

**APPENDIX A**  
NOP and Comment Letters



## NOTICE OF PREPARATION

### Program Environmental Impact Report Irvine 2045 Focused General Plan Update

**Date:** July 21, 2023

**To:** Reviewing Agencies, Interested Parties, and Organizations

**Subject:** Notice of Preparation of a Program Environmental Impact Report for the Irvine 2045 General Plan Update

**Scoping Meeting:** Tuesday, August 1, 2023 at 6:00 p.m.  
Virtual meeting accessible at the following link:  
<https://us06web.zoom.us/j/85141324890?pwd=eWdCN2NQaURTN21Vd245VmRHWE8zZz09>  
Passcode: 085026

**Comment Period:** July 21, 2023 to August 21, 2023

The City of Irvine (City) is preparing the 2045 Focused General Plan Update (project) that will serve as the long-range vision of the City for the next 20 to 25 years. The City as the lead agency has determined that the project will require the preparation of a Program Environmental Impact Report (Program EIR) in compliance with the California Environmental Quality Act (CEQA; California Public Resources Code, Section 21000 et seq.), and Title 14 of the California Code of Regulations (CCR; hereafter CEQA Guidelines, 14 CCR 15000 et seq.). The City has prepared this Notice of Preparation (NOP) in accordance with CEQA Guidelines Sections 15082(a) and 15375.

We need to know your views or the views of your agency or organization as to the scope and content of the environmental information that is germane to your agency's statutory responsibilities in connection with the project. If applicable, your agency will need to use the Program EIR prepared by our agency when considering your permit(s) or other approval(s) for the project. The project description, location, and the potential environmental effects are contained in the attached materials. Since the City has determined that a Program EIR is required for the project, pursuant to Section 15060(d) of the CEQA Guidelines (14 CCR 15000 et seq.), preparation of an Initial Study is not required and, therefore, one has not been prepared. Due to time limits mandated by state law, your response to this NOP must be submitted at the earliest possible date but no later than the close of the NOP review period, which runs as follows: July 21, 2023 to August 21, 2023. Written comments should be addressed to:

Marika Poynter  
City of Irvine  
1 Civic Center Plaza  
Irvine, CA 92606-5207  
mpoynter@cityofirvine.org

**Project Title:** Irvine 2045 Focused General Plan Update

**Project Applicant:** City of Irvine

## **PROJECT SETTING**

The City and its sphere of influence (SOI) encompass over 66 square miles located within the coastal and foothill region of central Orange County. Irvine is adjacent to the cities of Newport Beach, Lake Forest, Tustin, Santa Ana, Laguna Hills, Laguna Woods, and Laguna Beach. The City is a growing community with an increasing need for housing to accommodate its population. According to the California Department of Finance (DOF), the City has a total population of 303,051 (including 16,432 living in group quarters), which represents a 43 percent increase since 2010 and a 112 percent increase since 2000. The City of Irvine is the second largest jurisdiction in the County of Orange.

## **PROJECT DESCRIPTION**

With the adoption of the certified 2021-2029 Housing Element in May 2022, the City is required to update the appropriate elements of the General Plan to accommodate the residential site inventory from the 2021-2029 Housing Element. This includes updates to the land use element and the circulation element. Additionally, the City would update the open space element, safety element, and noise element to address statutory requirements. The City would introduce an environmental protection and climate action element and would also incorporate health and wellness throughout the updated General Plan. The project would provide long-term policy direction and communicate the vision, values, and goals for the City's physical development and overall quality of life. The project would serve to identify areas of opportunity and provide options to enhance development in key focus areas of the City.

Consistent with the 2021-2029 Housing Element, the project would update the General Plan land use element to support the City's Regional Housing Needs Assessment (RHNA) of 23,610 units. To ensure consistency with housing statute, including no-net loss and affirmatively furthering fair housing requirements, the 2021-2029 Housing Element identified adequate sites to accommodate 57,656 new residential units. The City's existing General Plan has a significant amount of unbuilt non-residential square footage available throughout the planning areas identified in the 2021-2029 Housing Element site inventory that would be available to convert to residential at a rate of 60 percent. This results in a residential equivalent of 23,113 units. Additionally, there are a remaining 4,249 units entitled throughout the City in the General Plan. As a result, the City would need to add an additional 30,294 new units to the General Plan. Specifically, to accommodate the City's RHNA requirement for new residential units, the project would implement 2021-

2029 Housing Element through the introduction of additional residential and/or mixed-use development throughout the City using overlay zones and/or specific plans to allow greater flexibility for property owners and developers. The overlays would promote higher density residential and mixed use in three main focus areas, targeted retail centers, conversion of hotel/motel, and on religious and school sites. The majority of the future residential growth would occur in the three main focus areas that are most suited for new growth and development as they are located near existing job centers, are along major travel corridors with access to existing and future public transit opportunities. Descriptions of these three key focus areas with the majority of the future residential potential are presented below:

- Focus Area 1 – Greater Irvine Business Complex Area: Planning Area 36 (Irvine Business Complex) and Planning Area 19 (Rancho San Joaquin) : Focus Area 1 includes expanding a residential and/or mixed-use overlay to the entire Irvine Business Complex (IBC) and the specific sites identified in the 2021-2029 Housing Element site inventory located in Rancho San Joaquin. Over the past 20 years, the IBC has transitioned from predominantly non-residential uses to a mixed-use area that is currently governed by the 2007 IBC Vision Plan. Under the existing General Plan, the IBC has a maximum of 15,000 units. The IBC continues to be one of the two employment centers located within the City and remains an opportunity area for high density residential. The IBC is connected to the Tustin Transportation Center (Metrolink and OCTA transit service) through the iShuttle and has direct access to Interstate 405, State Route 73, and State Route 55. The project proposes a new residential overlay and/or specific plan that would increase the total number of residential permitted in the Greater Irvine Business Complex Area by an additional 15,000 units.
- Focus Area 2 - Greater Spectrum Area: Planning Area 13 (Irvine Spectrum 4), Planning Area 31 (Irvine Spectrum 6), Planning Area 32 (Irvine Spectrum 3), and Planning Area 33 (Irvine Spectrum Center): The Greater Spectrum Area incorporates three non-residential planning areas (13, 31, and 32) that are located adjacent to the Irvine Spectrum Center area, are emerging employment centers, are located near the Irvine Transportation Center (ITC – Metrolink, Amtrak, and OCTA transit service), and with the introduction of a residential overlay and/or specific plan could transition to a network of micro-villages or residential nodes, connected by a variety of multi-modal and complete street strategies that provide new opportunities for residents and businesses in Irvine. The project proposes a new residential overlay and/or specific plan that would introduce a total number of 20,000 residential units to the Greater Spectrum Area.
- Focus Area 3 – Great Park Neighborhood Transit Village: Planning Area 51 (Great Park Neighborhood): The Great Park Neighborhood is an existing mixed-use planning area that features a mix of residential products at varying densities surrounding the Irvine Great Park. There are approximately 1,900 units remaining in the existing General Plan intensity, but a significant amount of the planning area remains vacant with no additional residential intensity. The project would increase

the number of residential units permitted in the Great Park with a focus on higher density product located near or adjacent to the ITC. The Great Park Neighborhood Transit Village area would have direct access to Focus Area 2, the Greater Spectrum Area through a network of proposed multi-modal improvements. The project would increase the residential intensity in Planning Area 51 by an additional 13,989 residential units.

The remaining units required by the City's RHNA assessment would be accommodated outside of the aforementioned focus areas, throughout the City, using the same residential overlays and/or specific plans. The project would encourage a micro-village approach, building upon the City's current approach to master planning in the City of Irvine. Utilizing a micro-village approach to planning would ensure that future development is balanced with a mix of uses including neighborhood supporting square footage, open space, and non-residential square footage that are connected through multi-modal transportation and complete street strategies. Figure 1 presents the boundaries of the three focus areas.

## **PROBABLE ENVIRONMENTAL EFFECTS**

The City has determined that a Program EIR will be prepared for the project. Section 15168 of the CEQA Guidelines states that a Program EIR may be prepared on a series of actions that can be characterized as one large project and are related either: (1) geographically; (2) as logical parts in the chain of contemplated actions; (3) in connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program; (4) as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects that can be mitigated in similar ways.

The Program EIR will be prepared in accordance with the requirements of CEQA Statute and Guidelines, as amended. Pursuant to Section 15146 of the CEQA Guidelines, the degree of specificity in the Program EIR will correspond to the degree of specificity involved in the project. The Program EIR will focus on the primary effects that can be expected to follow from adoption of the project and would allow future development in the three specific focus areas to move forward with streamlined environmental review. Specific development or construction projects within the three focus areas may be required to prepare subsequent site-specific analysis as required by the Program EIR, including traffic and/or access related studies. Based on the preliminary analysis of the project, the following environmental impact categories and their associated impact thresholds will be examined in the Program EIR: Aesthetics, Agricultural/Forest Resources, Air Quality, Biological Resources, Cultural Resources, Energy, Geology and Soils, Greenhouse Gas Emissions, Hazard/Hazardous Materials, Hydrology/Water Quality, Land Use/Planning, Mineral Resources, Noise, Population/Housing, Public Services, Recreation, Transportation, Tribal Cultural Resources, Utilities/Service Systems, and Wildfire.

The Draft Program EIR will address the short- and long-term effects of the project on the environment. A mitigation framework will be proposed for impacts that are determined to

be significant. A mitigation monitoring program will also be developed as required by Section 15100 of the CEQA Guidelines.

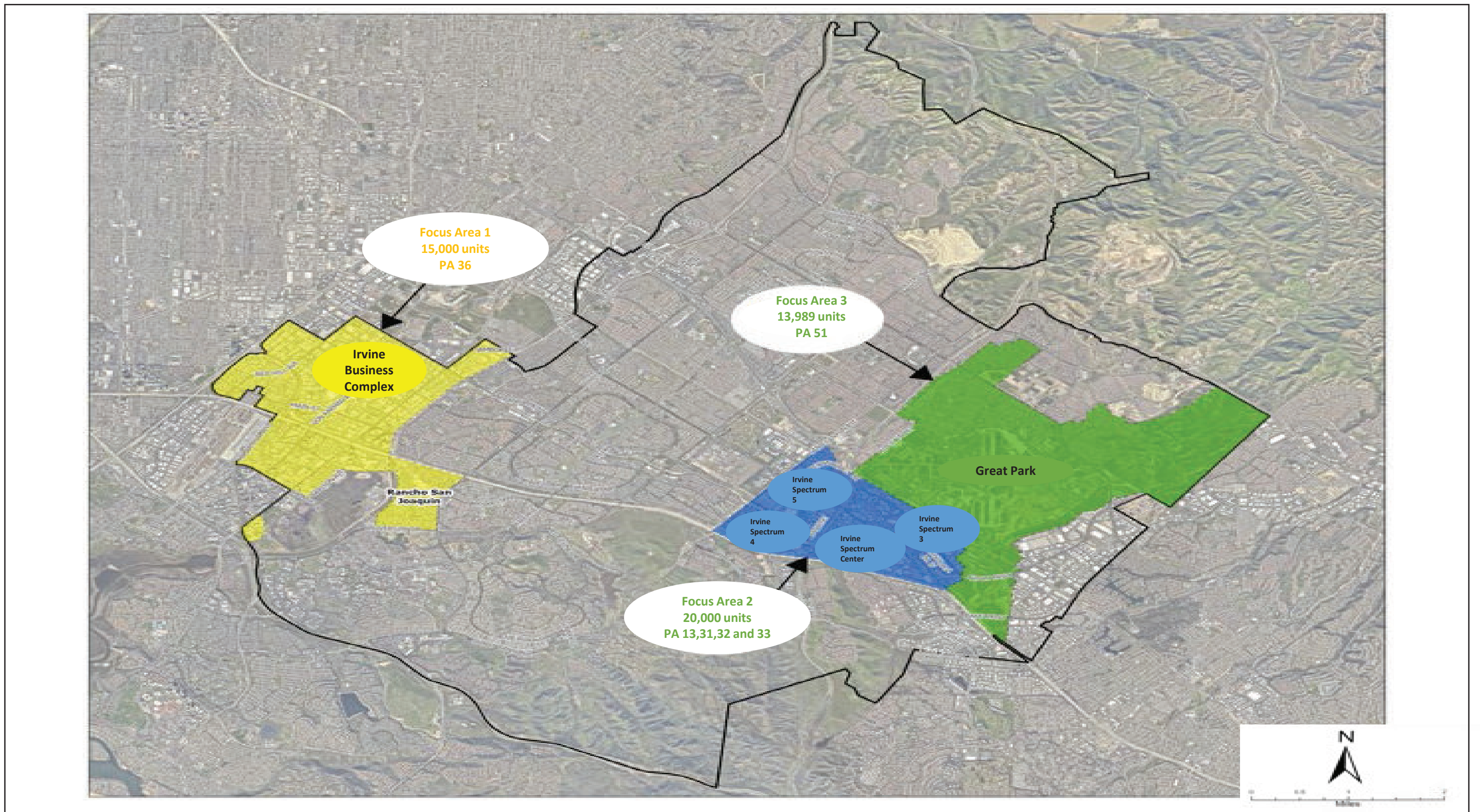
**SCOPING MEETING**

Pursuant to Section 21083.9(a)(2) of CEQA (California Public Resources Code, Section 21000 et seq.), scoping meetings are required for projects that may have statewide, regional, or area-wide environmental impacts. The City has determined that this project meets this threshold. A public scoping meeting has been scheduled and will be held by the City on Tuesday, August 1, 2023 at 6:00 p.m. The meeting will be virtual and can be accessed at the link provided above. Verbal and written comments regarding the scope of the proposed Program EIR will be accepted at the meeting. Written comments can also be mailed to the above-mentioned address, addressed to Marika Poynter, before the close of the NOP public comment period.

Please contact Marika Poynter at [mpoynter@cityofirvine.org](mailto:mpoynter@cityofirvine.org) with any questions regarding this notice or the scoping meeting.

  
Marika A Poynter  
Manager of Planning Services

  
Date



**Legend**

<span style="display:inline-block; width:15px; height:15px; background-color:yellow; border:1px solid black;"></span>	Focus Area 1 - PA 36 and 19
<span style="display:inline-block; width:15px; height:15px; background-color:blue; border:1px solid black;"></span>	Focus Area 2 - PA 13, 31, 32 and 33
<span style="display:inline-block; width:15px; height:15px; background-color:green; border:1px solid black;"></span>	Focus Area 3 - PA 51



# AIRPORT LAND USE COMMISSION

FOR ORANGE COUNTY

3160 Airway Avenue • Costa Mesa, California 92626 • 949.252.5170 fax: 949.252.6012

August 21, 2023

Marika Poynter  
City of Irvine  
1 Civic Center Plaza  
Irvine, CA 92606-5207

**Subject:** Notice of Preparation of a Program EIR for the Irvine 2045 General Plan Update

Dear Ms. Poynter:

Thank you for the opportunity to provide comments on the Notice of Preparation (NOP) of a Program EIR for the Irvine 2045 General Plan Update. In the context of the Airport Environs Land Use Plan for John Wayne Airport (*AELUP for JWA*), the Airport Land Use Commission for Orange County (ALUC) offers the following comments and requests consideration of these comments as you proceed with your DEIR and General Plan Update.

The City of Irvine is located within the AELUP Notification Area for JWA. The DEIR and General Plan should address height restrictions and imaginary surfaces by discussing Federal Aviation Administration (FAA) Federal Aviation Regulation (FAR) Part 77 as the criteria for determining height restrictions for projects located within the airport planning area. To ensure the safe operation of aircraft activity at JWA, structures anywhere in the JWA airport planning area should not exceed the applicable elevations defined in FAR Part 77 (Objects Affecting Navigable Air Space). The General Plan should include height policy language and a mitigation measure in the DEIR that states that no buildings will be allowed to penetrate the FAR Part 77 imaginary surfaces for JWA to ensure the protection of its airspace.

Development proposals within the City, which include the construction or alteration of structures more than 200 feet above ground level, require filing with the FAA and Airport Land Use Commission (ALUC) notification. Projects meeting this threshold must comply with procedures provided by Federal and State law, and with all conditions of approval imposed or recommended by FAA and ALUC including filing a Notice of Proposed Construction or Alteration (FAA Form 7460-1). Depending on the maximum building heights that will be allowed within the General Plan, the City may wish to consider a mitigation and condition of approval specifying this 200 feet above ground level height threshold. In addition, any project that penetrates the Notification Surface for JWA is required to file FAA Form 7460-1.

Portions of the City of Irvine fall within the 60 and 65 dB CNEL noise contours for JWA including sections of the Irvine Business Complex (Planning Area 36) located to the north and west of the Airport. ALUC does not support residential uses within the 65 dB CNEL contour. In



accordance with the *ALUP for JWA* Section 3.2.3, all residential units within the 65 dB CNEL contour are inconsistent in this area unless it can be shown conclusively that such units are sufficiently sound attenuated for present and projected noise exposure so as not to exceed an interior standard of 45 dB CNEL.

As for residential development within the 60 dB CNEL contour, the ALUC may not find residential units incompatible in this area but would strongly recommend that residential units be limited or excluded from this area unless sufficiently sound attenuated not to exceed an interior level of 45 db. Because of the IBC proximity to airport noise, any prospective resident should be notified of the presence of aircraft overflight. We recommend that the DEIR include reference to where in the City's General Plan or Zoning Code this notification requirement can be found.

Portions of the City of Irvine are located within Safety Zones 2, 3, 4 and 6, and the primary approach corridor for JWA. The DEIR and General Plan should include a discussion of how to minimize locating residential and other noise-sensitive uses within these Safety Zones.

We also recommend that the DEIR and the General Plan Update identify if the development of heliports will be allowed within your jurisdiction. Should the development of heliports occur within your jurisdiction, proposals to develop new heliports may be submitted through the City to the ALUC for review and action pursuant to Public Utilities Code Section 21661.5. Proposed heliport projects must comply fully with the state permit procedure provided by law and with all conditions of approval imposed or recommended by FAA, by the ALUC for Orange County and by Caltrans/Division of Aeronautics.

To address consistency with the *ALUP for Heliports* we suggest adding the following language to your General Plan Update and inclusion as a mitigation measure in the DEIR:

“The City will ensure that development proposals including the construction or operation of a heliport or helistop comply fully with permit procedures under State law, including referral of the project to the ALUC by the applicant, and with all conditions of approval imposed or recommended by the Federal Aviation Administration (FAA), ALUC, and Caltrans, including the filing of a Form 7480-1 (Notice of Landing Area Proposal) with the FAA. This requirement shall be in addition to all other City development requirements.”

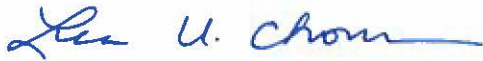
Section 21676 of the PUC requires that prior to the adoption or amendment of a general plan or specific plan, or the adoption or approval of a zoning ordinance or building regulation within the planning boundary established by the Airport Land Use Commission pursuant to Section 21675, the local agency shall first refer the proposed action to the ALUC. We recommend that the City include policy in its General Plan and a mitigation measure in the DEIR that states that the City shall refer projects to the Airport Land Use Commission (ALUC) for Orange County as required by Section 21676 of the California Public Utilities Code to determine consistency of projects with the *ALUP for JWA*.

With respect to submittals, please note that the Commission requests that referrals be submitted - to the ALUC for a determination between the Planning Commission and City Council hearings. Since the ALUC meets on the third Thursday afternoon of each month, complete submittals must be received in the ALUC office by the first of the month to ensure sufficient time for review, analysis, and agendizing. A General Plan submittal form is available at:

<https://www.ocair.com/about/administration/airport-governance/commissions/airport-land-use-commission/>

A separate form should be used for each element of the General Plan that is being amended. Thank you for the opportunity to comment on this Notice of Preparation. Please contact Julie Fitch at (949) 252-5284 or via email at [jfitch@ocair.com](mailto:jfitch@ocair.com) with any questions.

Sincerely,



Lea U. Choum  
Executive Officer

**From:** [Zachariasen, Judith@DOC](mailto:Zachariasen, Judith@DOC)  
**To:** [Marika Poynter](mailto:Marika Poynter)  
**Cc:** [OPR State Clearinghouse](mailto:OPR State Clearinghouse); [OLRA@DOC](mailto:OLRA@DOC)  
**Subject:** Irvine 2045 Focused General Plan Update - SCH #2023070463  
**Date:** Monday, August 21, 2023 4:35:07 PM  
**Attachments:** [image001.png](#)

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**CAUTION: EXTERNAL EMAIL**

Dear Marika Poynter,

The California Geological Survey (CGS) has received the Notice of Preparation of a Program Environmental Impact Report (Program EIR) for the Irvine 2045 General Plan Update. This email conveys the following recommendations from CGS concerning geologic issues related to the project area:

1. Liquefaction and Landslide Hazards

The project area encompasses earthquake zones of required investigation (ZORI) for liquefaction and landslides mapped by CGS. CGS has published Earthquake Zones of Required Investigation Maps (EZRIM) for liquefaction and landsliding covering the Tustin, Lake Forest, and Laguna Beach quadrangles, all of which affect the City of Irvine and the project area. The Program EIR and supporting documents should address this hazard as it relates to project development.

The combined extent of these EZRIM can be viewed here:

<https://maps.conservation.ca.gov/cgs/EQZApp/app/>

Individual Seismic Hazard Zone Reports, EZRIM, and associated GIS data are available for download here:

<https://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=regulatorymaps>

CGS suggests the hazard and the zones of required investigation for liquefaction and landsliding be shown and discussed in the Program EIR.

2. Ground Shaking Hazards

The project area is not located in an Earthquake Fault Zone mapped by CGS. However, several active faults are nearby, and the site could be subject to significant ground shaking. The Program EIR and supporting documents should address this hazard as it relates to the project development. Additional information about ground shaking hazard can be obtained at the following sites: <https://usgs.maps.arcgis.com/apps/webappviewer/index.html?id=14d2f75c7c4f4619936dac0d14e1e468>

<https://earthquake.usgs.gov/scenarios/catalog/bssc2014/>

If you have any additional comments or questions, please feel free to call or email.

Thank you,  
Judy Zachariasen



**Judith Zachariasen, PhD, PG, CEG**

Senior Engineering Geologist  
Fault Zoning Unit Supervisor  
Seismic Hazards Program  
**California Geological Survey**

**California Department of Conservation**

715 P Street, MS 1900, Sacramento, CA 95814

T: (916) 879-2844

E: [judith.zachariasen@conservation.ca.gov](mailto:judith.zachariasen@conservation.ca.gov)



August 18, 2023

Sent via email: [mpoynter@cityofirvine.org](mailto:mpoynter@cityofirvine.org)

Marika A. Poynter  
Manager of Planning Services  
City of Irvine  
1 Civic Center Plaza  
Irvine, CA 92606-5207

Subject: Response to Notice of Preparation, Program Environmental Impact Report,  
Irvine 2045 Focused General Plan Update

Dear Ms. Poynter:

Thank you for the opportunity to provide comments on the scope for the upcoming Program Draft Environmental Impact Report (EIR) for the 2045 Focused General Plan Update (Project). The Irvine Unified School District (District) welcomes the opportunity to review the Draft EIR for potential environmental impacts on its schools and to work collaboratively with the City to maintain the District's reputation for high quality education.

It is our understanding that the General Plan update is required following the adoption of the 2021-2029 Housing Element in May 2022. Moreover, the City plans to update the land use, circulation, open space, safety, and noise elements to add 30,294 residential units to the Genal Plan. To accomplish this, the City will establish "overlay zones" and/or specific plans to allow greater flexibility for property owners and developers. The overlays would promote higher density residential and mixed use in three (3) main focus areas, targeted retail centers, conversion of hotel/motel, and on religious and school sites. The majority of the future residential growth would occur in the following three (3) main focus areas:

- **Focus Area 1 – Greater Irvine Business Complex Area: Planning Area 36 (Irvine Business Complex) and Planning Area 19 (Rancho San Joaquin)**

The Project entails a new overlay or specific plan to increase the total number of residential units by 15,000.

- **Focus Area 2 – Greater Spectrum Area: Planning Area 13 (Irvine Spectrum 4), Planning Area 31 (Irvine Spectrum 6), Planning Area 32 (Irvine Spectrum 3), and Planning Area 33 (Irvine Spectrum Center)**

The Project would create a new overlay or specific plan to allow a total of 20,000 residential units within the Greater Spectrum Area. The increase in units is not identified.

- **Focus Area 3 Great Park Neighborhood Transit Village: Planning Area 51 (Great Park Neighborhood)**

The Project would increase the number of residential units allowed by 13,989.

#### BOARD OF EDUCATION

PAUL BOKOTA / LAUREN BROOKS / JEFF KIM / KATIE MCEWEN / CYRIL YU  
TERRY L. WALKER, *Superintendent of Schools*

JOHN FOGARTY, *Assistant Superintendent, Business Services* / BRIANNE FORD, *Assistant Superintendent, Information Technology*  
EAMONN O'DONOVAN, *Assistant Superintendent, Human Resources* / CASSIE PARHAM, *Assistant Superintendent, Education Services*



In addition, beyond the Focus Areas, the City will address additional units as follows:

- **Remaining Regional Housing Needs Allocation (RHNA) Units**

The remaining units required by the City’s RHNA assessment would be accommodated through overlays and specific plans across the city outside the focus areas. The City plans to target retail centers, conversion of hotels/motels, and religious and school sites.

**Comments on the Notice of Preparation**

The District’s student generation rates for grades K-6, 7-8, and 9-12 are presented in Table 1. The District requests that the Draft EIR identify the number, type, and location of units anticipated and apply these generation rates to determine the total number of students.

The District requests additional detail on the type of units anticipated, because the number of students generated is largely determined by the type of unit. The Notice of Preparation (NOP) does not provide details on the types of units proposed.

Please clarify the increase in the number of residential units in Focus Area 2. The NOP references 20,000 total units but does not include the increase.

**TABLE 1. STUDENT GENERATION RATES**

PRODUCT TYPE	K-6	7-8	9-12
High Density Multifamily (IBC)	0.040	0.007	0.017
High Density Multifamily (Spectrum)	0.086	0.016	0.026
Multifamily (Apartments)	0.133	0.038	0.056
Affordable (Apartments)	0.197	0.101	0.176
Single-Family Attached (Condos)	0.263	0.065	0.111
Single-Family Detached (Homes)	0.352	0.090	0.154

In addition to these generation rates, a new State-mandated Pre-Kindergarten (PK) program will be fully implemented in 2025. The District projects that enrollment in the PK program will be 80 to 90 percent of the Kindergarten cohort. The District requests that the Draft EIR include these additional students in its assessment of the Project’s impact on school facilities. Note that PK and Kindergarten classes have special room requirements to accommodate young students.

Tables 2, 3, and 4 present the existing 2022-2023 enrollment data and capacities of the District’s elementary/K-8, middle, and high schools, respectively. The reported capacities assume every classroom seat is perfectly filled with the correct grade-level student, which is infeasible. To accommodate the ebb and flow of students throughout the year, the District operates with 90 percent of capacity as full capacity. The District requests that the City use 90 percent of seats as full capacity in the analysis of the Project’s school facility impacts.



**TABLE 2. ELEMENTARY AND K-8 SCHOOL ENROLLMENT AND CAPACITY**

SCHOOL	2022-2023 ENROLLMENT	CAPACITY AS # OF SEATS*
Alderwood Elementary and PK	812	905
Beacon Park K-8	1,035	1,061
Bonita Canyon Elementary	404	503
Brywood Elementary	560	599
Cadence Park K-8 and PK	924	1,000
Canyon View Elementary and PK	736	826
College Park Elementary	568	707
Culverdale Elementary and PK	576	783
Cypress Village Elementary and PK	1,057	1,141
Deerfield Elementary and PK	640	660
Eastshore Elementary	534	665
Eastwood and PK	627	697
Greentree Elementary	449	548
Loma Ridge Elementary	676	708
Meadow Park Elementary and PK	602	754
Northwood Elementary	516	676
Oak Creek Elementary	895	937
Plaza Vista K-8	798	975
Portola Springs and PK	886	972
Santiago Hills and PK	546	650
Solis Park Elementary (K-8 in 2024)	429	779
Springbrook Elementary and PK	506	670
Stonecreek Elementary	461	566
Stonegate Elementary	1,011	1,057
Turtle Rock Elementary and PK	836	911
University Park Elementary and PK	496	750
Vista Verde K-8	805	1,045
Woodbury Elementary and PK	1,070	1,158
Westpark Elementary and PK	826	911

\*Note: Operational capacity runs at 90% of the number of seats available.



**TABLE 3. MIDDLE SCHOOL ENROLLMENT AND CAPACITY**

SCHOOL	2022-2023 ENROLLMENT	CAPACITY AS # OF SEATS*
Jeffrey Trail Middle School	1,078	1,170
Lakeside Middle School	635	956
Rancho San Joaquin Middle School	806	1,022
Sierra Vista Middle School	1,127	1,200
South Lake Middle School	601	796
Venado Middle School	583	914

\*Note: Operational capacity runs at 90% of the number of seats available.

**TABLE 4. HIGH SCHOOL ENROLLMENT AND CAPACITY**

SCHOOL	2022-2023 ENROLLMENT	CAPACITY AS # OF SEATS*
Irvine High School	1,861	2,229
Northwood High School	2,251	2,333
Portola High School	2,296	2,400
University High School	2,165	2,600
Woodbridge High School	2,219	2,600

\*Note: Operational capacity runs at 90% of the number of seats available.

The students generated by the addition of 30,294 residential units should be applied to the schools within their attendance areas. Please see Focus Areas 1, 2, and 3 below for the locations of District schools.

● **Focus Area 1**

- Area Elementary Schools: Culverdale ES, Westpark ES, University Park ES
- Area Middle Schools: Rancho San Joaquin MS, South Lake MS
- Area High Schools: University HS, Woodbridge HS

● **Focus Area 2**

- Area Elementary Schools: Cadence Park K-8, Oak Creek ES
- Area Middle Schools: Cadence Park K-8, South Lake MS
- Area High Schools: Portola HS, University HS

● **Focus Area 3**

- Area Elementary/Middle Schools: Beacon Park K-8, Cadence Park K-8, Solis Park K-8
- Area High Schools: Portola HS



Ms. Marika Poynter  
Response to Notice of Preparation, Program Environmental Impact Report,  
Irvine 2045 Focused General Plan Update  
August 18, 2023  
Page 5



The analysis of school impacts should identify the Focus Area schools that will reach capacity because of the proposed Project. Each school's impact should be addressed and the District's overall ability to fund all such supporting improvements should be considered including reservation of land for educational facility uses and the land acquisition and construction costs for potential new schools. A lack of sufficient funding may impact various other environmental issues, including the home-to-school travel distances. These issues should be addressed in the Draft EIR.

The NOP states that the City is targeting retail centers, conversion of hotels/motels, and religious and school sites for additional residential development. Please identify the number and type of residential units anticipated outside of the Focus Areas. Please explain how the City plans to target the District's school sites for future housing development.

The District requests that the Draft EIR address potential circulation/pedestrian safety impacts at school sites associated with additional residential development. To the extent that student generation exceeds the capacity of the schools in the Focus Area attendance areas and these students must attend more remote schools, the District requests the Draft EIR address the increase in traffic, vehicle miles traveled (VMT) and greenhouse gas (GHG) emissions.

We welcome the opportunity to work closely with the City throughout the California Environmental Quality Act process and would welcome the opportunity to discuss these issues further.

If you have any questions, please contact me at (949) 936-5305 or [kelvinokino@iusd.org](mailto:kelvinokino@iusd.org).

Sincerely,

A handwritten signature in blue ink, appearing to read "Kelvin Okino", with a stylized flourish at the end.

Kelvin Okino  
Executive Director of Facilities and Construction  
Irvine Unified School District

cc: Mr. John Fogarty, Irvine Unified School District  
Mr. Jesse Barron, Irvine Unified School District



Marika A. Poytner  
Manager of Planning Services  
1 Civic Center Plaza  
Irvine, CA 92606

August 21, 2023

Re: Response to Notice of Preparation for 2045 General Plan Update Environment Impact Report

PEG Companies and its affiliates (together “PEG”) would like to submit for inclusion of the Environmental Impact Study for the 2045 General Plan Update a proposed mixed-use residential and hospitality project located at 18700 McArthur Boulevard (“Project”). The tentative details of the Project are outlined below for your consideration.

PEG is pursuing 800 Class A, highly-amenitized residential units in conjunction with a 150 key high-end select-service hotel. The 6.45 acre site is currently home to the Artium Hotel, which will be completely redeveloped in pursuit of the Project. Congruent with the objectives of Focus Area 1 of the General Plan Update, the Project will provide a significant number of residential units designed to enhance the community fabric of the Irvine Business Complex, provide residential opportunities adjacent to major employers with walkability in mind, and integrate residents into the existing transportation infrastructure. Additionally, the hotel component of the Project will attract and accommodate travelers within walking distance of the John Wayne Airport.

PEG would welcome the opportunity to further discuss the proposed Project in concert with Irvine’s Comprehensive Plan Update process.

Sincerely,

Tyler Phelps  
Director, Development  
949.610.6090  
tphelps@pegcompanies.com



August 21, 2023

Marika A. Poytner  
Manager of Planning Services  
City of Irvine  
1 Civic Center Plaza  
Irvine, CA 92606

**Re: Notice of Preparation for 2045 General Plan Update Environment Impact Report / 2722 Michelson Drive**

Ms. Poytner:

Affiliates of IRA Capital own the approximately 9.35 acre site located at 2722 Michelson Drive on the southwest corner of Jamboree Road and Michelson Drive (APNs 445-102-11 and 445-102-12). By this letter, IRA respectfully requests that the Program Environmental Impact Report for the Irvine 2045 General Plan Update evaluate a mixed-use residential and/or hospitality project at this site consisting of up to one or more of the following:

1. 200 Residential Units per acre (i.e., 1,870 total Residential Units)
2. 500 Key Hotel
3. 200 Senior Housing Units
4. 500,000 SF Office

We believe the property is ideally suited for this level of density given its proximity to the airport, two freeways, as well as existing housing, employment, and commercial centers. We look forward to discussing our vision with City staff at your convenience.

Sincerely,

A handwritten signature in blue ink, appearing to read "Daniel Sitz".

Daniel Sitz  
Managing Director  
949.556.3906  
dsitz@iracapital.com

**From:** [arwanthro@cox.net](mailto:arwanthro@cox.net)  
**To:** [Marika Poynter](mailto:Marika Poynter)  
**Subject:** Comments re: Notice of Preparation - Program EIR Irvine 2045 Focused General Plan Update  
**Date:** Monday, August 7, 2023 1:37:04 PM

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**CAUTION: EXTERNAL EMAIL**

August 4, 2023

Marika Poynter  
City of Irvine  
1 Civic Center Plaza  
Irvine, CA 92606-5207  
[mpoynter@cityofirvine.org](mailto:mpoynter@cityofirvine.org)

Project Title: Notice of Preparation Program Environmental Impact Report (PEIR)  
Irvine 2045 Focused General Plan Update

Project Applicant: City of Irvine

Dear Ms. Poynter:

My name is Anne Whitehair, and I am writing to you as a representative and Board member of the California Cultural Resources Preservation Alliance, Inc. (CCRPA). CCRPA is a 501 (c) 3 non-profit organization with a mission to protect and preserve cultural resources such as sacred sites, archaeological sites, historical sites, and Traditional Cultural Places in Southern California, with a focus on Orange and Los Angeles Counties.

Thank you for the opportunity to comment on the Notice of Preparation of a Draft Environmental Impact Report for the proposed Irvine 2045 Focused General Plan Update. We believe that the project areas identified in the Notice are culturally sensitive and may contain archaeological sites. In particular, Focus Area 3 in the Great Park is geographically close to known areas of pre-historic tribal activity by the Acjachemen People in the Tomato Springs area near present-day Portola Springs Community Center.

We concur with your decision to examine multiple environmental impact categories in the Program EIR, particularly the categories of Cultural Resources and Tribal Cultural Resources. We look forward to the opportunity to review the Draft Program EIR and the proposed mitigation framework and monitoring programs when they are available.

Sincerely,

Anne R. Whitehair, MA  
Bioarchaeology  
Board Member and Secretary  
California Cultural Resources Preservation Alliance, Inc.

Email: [arwanthro@cox.net](mailto:arwanthro@cox.net) Cell: (714) 403-1753

**From:** [MICHELE JACKNIK](#)  
**To:** [Marika Poynter](#)  
**Subject:** 2045 General Plan Feedback  
**Date:** Wednesday, July 26, 2023 3:40:50 PM

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**CAUTION:** EXTERNAL EMAIL

Ms. Poynter:

I'm a 10 year resident of Stonegate Village near the Great Park. I'm writing in response to the Notice of Preparation of a Program Environmental Impact Report for the Irvine 2045 General Plan.

The concept of building almost 14,000 additional units in the Great Park is unrealistic given the lack of infrastructure to support them. The Woodbury Town Center is already seriously overcrowded because the Great Park does not have a locally available retail center. The Spectrum doesn't provide basic shopping needs for groceries, pharmacy, banking, etc. That's evident when it's hard to find parking in Woodbury on evenings and weekends. People prefer convenient neighborhood access that isn't always crowded. Irvine was built as a collection of self-contained villages, but the Great Park doesn't conform to that model.

Traffic is already heavy on Sand Canyon, especially during morning, mid afternoon, and evening rush times. The supposed timing of the lights hasn't significantly improved traffic flow. The reduction of one lane as you get closer to the 5 freeway makes the situation worse. It can take 15 minutes or more to drive the 4 miles from Crean High School to the 5 Freeway junction on Sand Canyon. Adding 14,000 units plus the 15,000 seat amphitheater and other planned amenities will severely impact traffic, and local residents.

I'm strongly opposed to the 2045 General Plan as currently proposed. Please consider common sense neighborhood consequences from intensive and excessive building. The vicinity around the Great Park can not absorb a dense urban plan in a suburban environment.

Concerned Resident,

Michele Jacknik  
46 Diamond  
Irvine, CA 92620

**From:** [Larry Lin](#)  
**To:** [Marika Poynter](#)  
**Subject:** Concern over poor planning of Irvine new development  
**Date:** Saturday, July 29, 2023 10:43:05 AM

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**CAUTION: EXTERNAL EMAIL**

Dear Ms. Poynter,

My name is Larry Lin and I am a Stonegate home owner at 55 Cummings.

I came across a new proposal by city of Irvine's 2045 development plan that called for nearly 14,000 units in the Great Park. Not mentioned the upcoming development of houses at the corner of Portola Parkway and Jeffrey up on the hill.

I can hardly imagine the impact on local streets this new development would bring about. With the Woodbury town center is already like a flea market with all the excessive residents coming this way to shop. We could not even find a parking place at the center Saturday morning when all grocery shoppers gushed out to the center. Other amenities like the planned 15,000 seat amphitheater will only add to magnitude of the problem.

I plead for the review and revisit of the proposal as an Irvine law abiding tax paying resident that the city of Irvine not to made the already deteriorating quality of living even worst.

Larry Lin ([lungchang\\_lin@yahoo.com](mailto:lungchang_lin@yahoo.com))  
(614)-260-3916 (Mobile)



Norm Grossman  
Laguna Greenbelt, Inc.  
P.O. Box 860  
Laguna Beach, CA 92652  
(949) 494-8190  
lgbsecretary@lagunagreenbelt.org

September 15, 2023

City of Irvine Community Development Department  
Attn: Tim Gehrich, General Plan Update  
P.O. Box 19575  
Irvine, CA 92623-9575  
gpupdate2045@cityofirvine.org

Re: Input on General Plan Updates

Dear Tim Gehrich and Staff Planners,

We are writing to weigh in on forthcoming General Plan updates in the City of Irvine to address climate resilience locally and regionally, with particular focus on the need to incorporate wildlife connectivity as a vital part of the City vision going forward.

As you know, In 2013, the City, FivePoint, and nonprofit partners achieved an important milestone - establishing a portion of the Irvine Wildlife Corridor at the Great Park. However, the Irvine Wildlife Corridor is only one segment of the longer Irvine-Laguna Wildlife Corridor (ILWC), spanning an urban landscape and connecting six miles between the Santa Ana Mountains and South Coast Wilderness.

There is State support for connectivity. Governor Newsom's [30 x 30 plan](#) highlights connectivity within statewide guidelines for conservation. The ILWC has now been named as the first priority project for climate resiliency in the Southland region, and is a multi-benefit project that is essential for retaining and enriching the biodiversity and mitigation of the effects of climate change. Additionally, [AB 2344](#) (Safe Roads Bill) directs transportation departments to prioritize connectivity in projects throughout the State.

This General Plan update is a special opportunity for the City to again be on the leading edge of conservation and climate change planning. We hope the City will reflect a robust attention to wildlife connectivity in light of emerging findings about how vital connectivity is to long-term urban sustainability.



We are grateful for the opportunity to participate in this process and look forward to a continued mutually beneficial relationship with the City of Irvine.

Sincerely,

A handwritten signature in black ink, appearing to read "Norm Grossman". The signature is fluid and cursive, with the first name "Norm" being more prominent than the last name "Grossman".

**Norm Grossman**

*President*

*Laguna Greenbelt, Inc.*

[www.wildlifecorridor.org](http://www.wildlifecorridor.org)

[www.lagunagreenbelt.org](http://www.lagunagreenbelt.org)

## APPENDIX B

# Irvine General Plan Update Air Quality and Greenhouse Gas Emissions Summary

**DATE:** March 12, 2024  
**TO:** Nick Larkin, Recon Environmental, Inc.  
**FROM:** Haseeb Qureshi, Shannon Wong  
**JOB NO:** AQ & GHG Assessment

## IRVINE GENERAL PLAN UPDATE AIR QUALITY & GREENHOUSE GAS EMISSIONS SUMMARY

Nick Larkin,

Urban Crossroads, Inc. is pleased to provide the following Air Quality & Greenhouse Gas Emissions Summary for the Irvine General Plan Update (**Project**). The City of Irvine is adjacent to the cities of Newport Beach, Costa Mesa, Orange, Lake Forest, Tustin, Santa Ana, Laguna Hills, Laguna Woods, and Laguna Beach, as well as unincorporated areas of the County. With the adoption of the certified 2021-2029 Housing Element in May 2022, the City is required to update the appropriate elements of the General Plan to accommodate the residential site inventory from the 2021-2029 Housing Element. This includes updates to the land use element and the circulation element. Additionally, the City would update the open space element, safety element, and noise element to address statutory requirements. The City would introduce an environmental protection and climate action element and would also incorporate health and wellness throughout the updated General Plan. The Draft Program EIR will address the short- and long-term effects of the project on the environment.

### PROJECT SCENARIOS

The Project Scenarios evaluated in the Air Quality & Greenhouse Gas Emissions Summary are as follows:

- **Current General Plan/No Project** – This scenario represents the currently approved Buildout land uses. Future development includes unbuilt dwelling units and non-residential uses. The Great Park Framework Plan Phase 1 land uses are also included in this scenario. The Current General Plan land uses modeled for this assessment were obtained from Table 3-2 from the *Irvine General Plan Update VMT Study* prepared by Iteris, Inc.

- Conservative Project Scenario** – This alternative evaluates the Current General Plan plus 57,656 RHNA housing units within the adopted Housing Site Inventory sites. The 57,656 new residential units consist of 55,395 new dwelling units and 2,261 unbuilt units already in the General Plan. For the purpose of evaluating potential effects, 55,395 dwelling units are analyzed under this alternative. Both Phase 1 and Buildout of the Great Park Framework Plan land uses and the extension of Ada from the Irvine Metrolink/Amtrak Station to Marine Way are also included in this scenario. The Conservative Project Scenario land uses modeled for this assessment were obtained from Tables 2-1 and 2-3 from the *Irvine General Plan Update VMT Study* prepared by Iteris, Inc.
- Cumulative Plus Conservative Project Scenario** – This scenario evaluates the Conservative Project Scenario plus additional cumulative projects that are assumed to be built in the background conditions in both the City of Irvine and in surrounding jurisdictions. Cumulative projects include known future residential development in adjacent Cities. The Cumulative Plus Conservative Project Scenario land uses modeled in this assessment were obtained from Tables 2-1, 2-3, and 2-4 from the *Irvine General Plan Update VMT Study* prepared by Iteris, Inc.

## AIR QUALITY EMISSIONS

### REGIONAL CONSTRUCTION EMISSIONS SUMMARY

Based on information provided by the City, a worst-case construction scenario for a future development occurring as a result of project implementation is expected to include the development of 1,500 units, with an average size of 670 square-feet (small apartments), on a 15-acre site. The estimated maximum daily construction emissions without mitigation are summarized on Table 1. Detailed construction model outputs are presented in Attachment A.

**TABLE 1: OVERALL REGIONAL CONSTRUCTION EMISSIONS SUMMARY**

Source	Emissions (lbs/day) <sup>1</sup>					
	VOC	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Summer						
2025	5.10	31.70	76.14	0.06	21.25	11.41
2026	4.82	18.26	72.45	0.06	15.90	4.07
Winter						
2025	5.07	20.23	68.03	0.06	15.96	4.12
2026	315.37	18.96	64.68	0.06	15.90	4.07
<b>Maximum Daily Emissions</b>	<b>315.37</b>	<b>31.70</b>	<b>76.14</b>	<b>0.06</b>	<b>21.25</b>	<b>11.41</b>

<sup>1</sup> The total maximum daily emissions number may not add up due to rounding.

## **REGIONAL OPERATIONAL EMISSIONS SUMMARY**

### **CURRENT GENERAL PLAN/NO PROJECT ALTERNATIVE**

The estimated operation-source emissions from the Current General Plan/No Project Alternative are summarized in Table 2. Detailed operation model outputs are presented in Attachment B.

**TABLE 2: CURRENT GENERAL PLAN/NO PROJECT OPERATIONAL EMISSIONS**

Source	Emissions (lbs/day) <sup>2</sup>					
	VOC	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Summer						
Mobile Source	1,068.28	1,681.22	33,999.83	119.11	14,476.88	3,698.14
Area Source	8,723.10	2,312.77	14,295.12	14.68	191.12	187.78
Energy Source	84.10	1,489.51	994.74	9.17	116.20	116.20
<b>Total Maximum Daily Emissions</b>	<b>9,875.48</b>	<b>5,483.50</b>	<b>49,289.69</b>	<b>142.96</b>	<b>14,784.20</b>	<b>4,002.12</b>
Winter						
Mobile Source	1,047.45	1,839.69	29,526.59	114.21	14,476.88	3,698.14
Area Source	7,114.92	2,194.52	933.84	14.01	177.43	177.43
Energy Source	84.10	1,489.51	994.74	9.17	116.20	116.20
<b>Total Maximum Daily Emissions</b>	<b>8,246.47</b>	<b>5,523.72</b>	<b>31,455.17</b>	<b>137.39</b>	<b>14,770.51</b>	<b>3,991.77</b>

<sup>2</sup>The total maximum daily emissions number may not add up due to rounding.

**CONSERVATIVE PROJECT/PROPOSED PROJECT SCENARIO**

The estimated operation-source emissions from the Conservative Project/Proposed Project Scenario are summarized in Table 3. Detailed operation model outputs are presented in Attachment C.

**TABLE 3: CONSERVATIVE PROJECT/PROPOSED PROJECT SCENARIO OPERATIONAL EMISSIONS**

Source	Emissions (lbs/day) <sup>3</sup>					
	VOC	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Summer						
Mobile Source	47.06	74.06	1,497.81	5.25	637.76	162.92
Area Source	1,671.31	948.26	3,590.26	6.00	75.77	75.41
Energy Source	16.63	284.60	124.17	1.81	22.97	22.97
<b>Total Maximum Daily Emissions</b>	<b>1,735.00</b>	<b>1,306.92</b>	<b>5,212.24</b>	<b>13.06</b>	<b>736.50</b>	<b>261.30</b>
Winter						
Mobile Source	46.14	81.04	1,300.75	5.03	637.76	162.92
Area Source	1,391.67	918.91	391.02	5.87	74.29	74.29
Energy Source	16.63	284.60	124.17	1.81	22.97	22.97
<b>Total Maximum Daily Emissions</b>	<b>1,454.44</b>	<b>1,284.55</b>	<b>1,815.94</b>	<b>12.71</b>	<b>735.02</b>	<b>260.18</b>

<sup>3</sup>The total maximum daily emissions number may not add up due to rounding.

**CUMULATIVE PLUS CONSERVATIVE/PROPOSED PROJECT SCENARIO**

The estimated operation-source emissions from the Cumulative Plus Conservative/Proposed Project Scenario are summarized in Table 4. Detailed operation model outputs are presented in Attachment D.

**TABLE 4: CUMULATIVE PLUS CONSERVATIVE PROJECT/PROPOSED PROJECT SCENARIO  
REGIONAL OPERATIONAL EMISSIONS**

Source	Emissions (lbs/day) <sup>4</sup>					
	VOC	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Summer						
Mobile Source	56.42	88.80	1,795.78	6.29	764.63	195.33
Area Source	2,127.01	1,204.91	4,561.45	7.63	96.28	95.82
Energy Source	21.44	367.06	160.16	2.34	29.63	29.63
<b>Total Maximum Daily Emissions</b>	<b>2,204.87</b>	<b>1,660.77</b>	<b>6,517.39</b>	<b>16.26</b>	<b>890.54</b>	<b>320.78</b>
Winter						
Mobile Source	55.32	97.17	1,559.51	6.03	764.63	195.33
Area Source	1,771.78	1,167.61	496.86	7.45	94.40	94.40
Energy Source	21.44	367.06	160.16	2.34	29.63	29.63
<b>Total Maximum Daily Emissions</b>	<b>1,848.54</b>	<b>1,631.84</b>	<b>2,216.53</b>	<b>15.82</b>	<b>888.66</b>	<b>319.36</b>

<sup>4</sup>The total maximum daily emissions number may not add up due to rounding.

## AIR QUALITY EMISSIONS SUMMARY

The estimated total operation-source emissions for all Project Scenarios are summarized in Table 5.

**TABLE 5: TOTAL REGIONAL OPERATIONAL EMISSIONS BY PROJECT SCENARIO**

Source	Emissions (lbs/day) <sup>5</sup>					
	VOC	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Summer						
Current General Plan/No Project Scenario	9,875.47	5,483.50	49,289.69	142.96	14,784.21	4,002.13
Current General Plan + Conservative/Proposed Project Scenario	11,610.47	6,790.42	54,501.94	156.02	15,520.71	4,263.43
Current General Plan + Cumulative + Conservative/Proposed Project	12,080.36	7,144.26	55,807.08	159.22	15,674.74	4,322.91
Winter						
Current General Plan/No Project Scenario	8,246.47	5,523.72	31,455.17	137.39	14,770.52	3,991.77
Current General Plan + Conservative/Proposed Project	9,700.91	6,808.27	33,271.12	150.10	15,505.54	4,251.96
Current General Plan + Cumulative + Conservative/Proposed Project Scenario	10,095.01	7,155.56	33,671.70	153.22	15,659.18	4,311.13

<sup>5</sup>The total maximum daily emissions number may not add up due to rounding.



## CO HOTSPOT ANALYSIS

It has long been recognized that CO hotspots are caused by vehicular emissions, primarily when idling at congested intersections. In response, vehicle emissions standards have become increasingly stringent in the last 20 years. Currently, the allowable CO emissions standard in California is a maximum of 3.4 grams/mile for passenger cars (there are requirements for certain vehicles that are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of increasingly sophisticated and efficient emissions control technologies, CO concentration in the SCAB is now designated as attainment. To establish a more accurate record of baseline CO concentrations affecting the SCAB a CO “hot spot” analysis was conducted in 2003 by the SCAQMD for four busy intersections in Los Angeles at the peak morning and afternoon time periods. This “hot spot” analysis did not predict any violation of CO standards. Based on the SCAQMD's 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide (*1992 CO Plan*), peak carbon monoxide concentrations in the SCAB were a result of unusual meteorological and topographical conditions and not a result of traffic volumes and congestion at a particular intersection. Similar considerations are also employed by other Air Districts when evaluating potential CO concentration impacts. More specifically, the Bay Area Air Quality Management District (BAAQMD) concludes that under existing and future vehicle emission rates, a given project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour (vph)—or 24,000 vph where vertical and/or horizontal air does not mix—to generate a significant CO impact. The busiest intersection evaluated was that at Wilshire Boulevard and Veteran Avenue in Los Angeles, which has a daily traffic volume of approximately 100,000 vph and AM/PM traffic volumes of 8,062 vph and 7,719 vph respectively. The *2003 AQMP* estimated that the 1-hour concentration for this intersection was 4.6 ppm; this indicates that, should the daily traffic volume increase four times to 400,000 vehicles per day, CO concentrations ( $4.6 \text{ ppm} \times 4 = 18.4 \text{ ppm}$ ) would still not likely exceed the most stringent 1-hour CO standard (20.0 ppm). The Level of Service Traffic Study completed for the project determined that roadway segment and intersection volumes under the Cumulative Plus Conservative Project Scenario would not exceed 100,000 average daily trips. Therefore, the Cumulative Plus Conservative Project Scenario would not produce the volume of traffic required to generate a CO “hot spot” either in the context of the 2003 Los Angeles hot spot study or based on representative BAAQMD CO threshold considerations. Therefore, new development adjacent to heavily traveled streets or intersections would not expose sensitive receptors to substantial pollutant concentrations associated with CO hot spots, and impacts would be less than significant.

## GREENHOUSE GAS EMISSIONS

### CURRENT GENERAL PLAN/NO PROJECT SCENARIO

The estimated greenhouse gas emissions from the Current General Plan/No Project Scenario are summarized on Table 6. Detailed operation model outputs are presented in Attachment B.

**TABLE 6: CURRENT GENERAL PLAN GHG EMISSIONS**

Source	Emission (MT/year) <sup>6</sup>				
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	R	Total CO <sub>2</sub> e
Annual construction-related emissions amortized over 30 years	102.34	2.73E-03	5.73E-03	1.27E-01	104.24
Mobile	1,851,493.34	38.22	51.64	207.16	1,868,045.34
Area	36,576.35	0.80	0.10	0.00	36,626.73
Energy	600,763.55	64.53	5.15	0.00	603,911.68
Water	62,683.06	1,703.66	41.05	0.00	117,506.72
Waste	20,754.76	2,074.36	0.00	0.00	72,613.85
Refrigerants	0.00	0.00	0.00	22,524.11	22,524.11
<b>Total CO<sub>2</sub>e (All Sources)</b>					<b>2,721,332.67</b>

<sup>6</sup>The total CO<sub>2</sub>e number may not add up due to rounding.

### CONSERVATIVE/PROPOSED PROJECT SCENARIO

The estimated greenhouse gas emissions from Conservative/Proposed Project Scenario are summarized in Table 7. Detailed operation model outputs are presented in Attachment C.

**TABLE 7: CONSERVATIVE/PROPOSED PROJECT SCENARIO GHG EMISSIONS**

Source	Emission (MT/year) <sup>7</sup>				
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	R	Total CO <sub>2</sub> e
Annual construction-related emissions amortized over 30 years	102.34	2.73E-03	5.73E-03	1.27E-01	104.24
Mobile	81,564.63	1.68	2.28	9.13	82,293.80
Area	14,198.46	0.29	0.03	0.00	14,215.53
Energy	89,742.83	9.08	0.57	0.00	90,140.70
Water	2,520.86	73.28	1.76	0.00	4,878.51
Waste	3,781.74	377.97	0.00	0.00	13,231.02
Refrigerants	0.00	0.00	0.00	73.87	73.87
<b>Total CO<sub>2</sub>e (All Sources)</b>					<b>204,937.67</b>

<sup>7</sup>The total CO<sub>2</sub>e number may not add up due to rounding.

**CUMULATIVE PLUS CONSERVATIVE/PROPOSED PROJECT SCENARIO**

The estimated greenhouse gas emissions from the Cumulative Plus Conservative/Proposed Project Scenario are summarized in Table 8. Detailed operation model outputs are presented in Attachment D.

**TABLE 8: CUMULATIVE PLUS CONSERVATIVE/PROPOSED PROJECT SCENARIO GHG EMISSIONS**

Source	Emission (MT/year) <sup>8</sup>				
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	R	Total CO <sub>2</sub> e
Annual construction-related emissions amortized over 30 years	102.34	2.73E-03	5.73E-03	1.27E-01	104.24
Mobile	97,790.77	2.02	2.73	10.94	98,665.00
Area	18,041.11	0.37	0.04	0.00	18,062.80
Energy	115,228.46	11.65	0.73	0.00	115,737.60
Water	3,186.30	92.63	2.23	0.00	6,166.32
Waste	4,845.67	484.31	0.00	0.00	16,953.36
Refrigerants	0.00	0.00	0.00	92.48	92.48
<b>Total CO<sub>2</sub>e (All Sources)</b>					<b>255,781.80</b>

<sup>8</sup>The total CO<sub>2</sub>e number may not add up due to rounding.

**GREENHOUSE GAS EMISSIONS SUMMARY**

The estimated greenhouse gas emissions from all Project Scenarios are summarized in Table 9.

**TABLE 9: TOTAL GHG EMISSIONS BY PROJECT SCENARIO**

Emission Source	Total CO <sub>2</sub> e <sup>9</sup>
Current General Plan/No Project Scenario	2,721,332.67
Current General Plan + Conservative/Proposed Project Scenario	2,926,270.34
Current General Plan + Cumulative + Conservative/Proposed Project Scenario	2,977,114.47

<sup>9</sup>The total CO<sub>2</sub>e number may not add up due to rounding.

ATTACHMENT A  
CALEEMOD CONSTRUCTION EMISSIONS MODEL OUTPUTS

# 15937 - Irvine GPU (Construction) Detailed Report

## Table of Contents

1. Basic Project Information
  - 1.1. Basic Project Information
  - 1.2. Land Use Types
  - 1.3. User-Selected Emission Reduction Measures by Emissions Sector
2. Emissions Summary
  - 2.1. Construction Emissions Compared Against Thresholds
  - 2.2. Construction Emissions by Year, Unmitigated
3. Construction Emissions Details
  - 3.1. Demolition (2025) - Unmitigated
  - 3.3. Site Preparation (2025) - Unmitigated
  - 3.5. Grading (2025) - Unmitigated
  - 3.7. Building Construction (2025) - Unmitigated
  - 3.9. Building Construction (2026) - Unmitigated
  - 3.11. Paving (2026) - Unmitigated

3.13. Architectural Coating (2026) - Unmitigated

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data



# 1. Basic Project Information

## 1.1. Basic Project Information

Data Field	Value
Project Name	15937 - Irvine GPU (Construction)
Construction Start Date	6/2/2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	19.6
Location	33.688397, -117.841364
County	Orange
City	Irvine
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	6804
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.21

## 1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Apartments High Rise	1,500	Dwelling Unit	15.0	1,005,000	0.00	—	4,470	—

### 1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

## 2. Emissions Summary

### 2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.09	5.10	31.7	76.1	0.06	1.37	19.9	21.3	1.26	10.2	11.4	—	21,847	21,847	0.55	1.24	68.2	22,299
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.06	315	20.2	68.0	0.06	0.47	15.5	16.0	0.43	3.69	4.12	—	21,155	21,155	0.57	1.24	1.77	21,541
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.21	20.1	11.4	39.6	0.04	0.30	8.99	9.25	0.28	2.14	2.38	—	12,369	12,369	0.32	0.72	15.7	12,609
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.59	3.67	2.09	7.24	0.01	0.06	1.64	1.69	0.05	0.39	0.43	—	2,048	2,048	0.05	0.12	2.59	2,087

### 2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2025	6.09	5.10	31.7	76.1	0.06	1.37	19.9	21.3	1.26	10.2	11.4	—	21,847	21,847	0.55	1.24	68.2	22,299
2026	5.41	4.82	18.3	72.4	0.06	0.41	15.5	15.9	0.38	3.69	4.07	—	21,490	21,490	0.51	1.24	61.9	21,934
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	6.06	5.07	20.2	68.0	0.06	0.47	15.5	16.0	0.43	3.69	4.12	—	21,155	21,155	0.57	1.24	1.77	21,541
2026	5.38	315	19.0	64.7	0.06	0.41	15.5	15.9	0.38	3.69	4.07	—	20,813	20,813	0.54	1.24	1.60	21,198
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.07	1.73	9.53	21.7	0.02	0.30	5.10	5.41	0.28	1.48	1.76	—	6,175	6,175	0.18	0.31	7.33	6,281
2026	3.21	20.1	11.4	39.6	0.04	0.26	8.99	9.25	0.24	2.14	2.38	—	12,369	12,369	0.32	0.72	15.7	12,609
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.38	0.32	1.74	3.97	< 0.005	0.06	0.93	0.99	0.05	0.27	0.32	—	1,022	1,022	0.03	0.05	1.21	1,040
2026	0.59	3.67	2.09	7.24	0.01	0.05	1.64	1.69	0.04	0.39	0.43	—	2,048	2,048	0.05	0.12	2.59	2,087

### 3. Construction Emissions Details

#### 3.1. Demolition (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.86	2.40	22.2	19.9	0.03	0.92	—	0.92	0.84	—	0.84	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	1.22	1.09	< 0.005	0.05	—	0.05	0.05	—	0.05	—	188	188	0.01	< 0.005	—	188
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.22	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	31.1	31.1	< 0.005	< 0.005	—	31.2
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.05	0.84	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	199	199	< 0.005	0.01	0.75	202
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.5	10.5	< 0.005	< 0.005	0.02	10.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.74	1.74	< 0.005	< 0.005	< 0.005	1.77
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

### 3.3. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.94	3.31	31.6	30.2	0.05	1.37	—	1.37	1.26	—	1.26	—	5,295	5,295	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.87	0.83	< 0.005	0.04	—	0.04	0.03	—	0.03	—	145	145	0.01	< 0.005	—	146
Dust From Material Movement	—	—	—	—	—	—	0.54	0.54	—	0.28	0.28	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.16	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01	—	24.0	24.0	< 0.005	< 0.005	—	24.1
Dust From Material Movement	—	—	—	—	—	—	0.10	0.10	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.06	0.98	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	232	232	< 0.005	0.01	0.88	236
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.14	6.14	< 0.005	< 0.005	0.01	6.22
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.02	1.02	< 0.005	< 0.005	< 0.005	1.03
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

### 3.5. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.80	3.20	29.7	28.3	0.06	1.23	—	1.23	1.14	—	1.14	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement:	—	—	—	—	—	—	9.20	9.20	—	3.65	3.65	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	0.26	2.44	2.33	0.01	0.10	—	0.10	0.09	—	0.09	—	542	542	0.02	< 0.005	—	544
Dust From Material Movement:	—	—	—	—	—	—	0.76	0.76	—	0.30	0.30	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.45	0.42	< 0.005	0.02	—	0.02	0.02	—	0.02	—	89.8	89.8	< 0.005	< 0.005	—	90.1
Dust From Material Movement:	—	—	—	—	—	—	0.14	0.14	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.07	1.12	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	265	265	< 0.005	0.01	1.01	269
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	21.1	21.1	< 0.005	< 0.005	0.04	21.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.49	3.49	< 0.005	< 0.005	0.01	3.53
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

### 3.7. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406



Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406	
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Off-Road Equipment	0.33	0.28	2.58	3.22	0.01	0.11	—	0.11	0.10	—	0.10	—	591	591	0.02	< 0.005	—	593	
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Off-Road Equipment	0.06	0.05	0.47	0.59	< 0.005	0.02	—	0.02	0.02	—	0.02	—	97.9	97.9	< 0.005	< 0.005	—	98.2	
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Worker	4.35	3.83	3.75	60.5	0.00	0.00	14.1	14.1	0.00	3.31	3.31	—	14,337	14,337	0.17	0.51	54.3	14,548	
Vendor	0.39	0.14	5.31	2.64	0.04	0.04	1.37	1.41	0.04	0.38	0.42	—	5,112	5,112	0.29	0.71	13.9	5,345	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Worker	4.32	3.81	4.26	52.3	0.00	0.00	14.1	14.1	0.00	3.31	3.31	—	13,643	13,643	0.19	0.51	1.41	13,802	
Vendor	0.39	0.14	5.52	2.71	0.04	0.04	1.37	1.41	0.04	0.38	0.42	—	5,115	5,115	0.29	0.71	0.36	5,334	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.05	0.93	1.05	13.5	0.00	0.00	3.44	3.44	0.00	0.80	0.80	—	3,410	3,410	0.05	0.13	5.78	3,455
Vendor	0.10	0.03	1.37	0.66	0.01	0.01	0.33	0.34	0.01	0.09	0.10	—	1,261	1,261	0.07	0.18	1.49	1,316
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.17	0.19	2.46	0.00	0.00	0.63	0.63	0.00	0.15	0.15	—	565	565	0.01	0.02	0.96	572
Vendor	0.02	0.01	0.25	0.12	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	209	209	0.01	0.03	0.25	218
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

### 3.9. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.74	0.62	5.69	7.49	0.01	0.22	—	0.22	0.20	—	0.20	—	1,384	1,384	0.06	0.01	—	1,389
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	1.04	1.37	< 0.005	0.04	—	0.04	0.04	—	0.04	—	229	229	0.01	< 0.005	—	230
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.74	3.64	3.29	56.9	0.00	0.00	14.1	14.1	0.00	3.31	3.31	—	14,063	14,063	0.17	0.51	48.9	14,269
Vendor	0.39	0.11	5.12	2.56	0.04	0.04	1.37	1.41	0.04	0.38	0.42	—	5,029	5,029	0.25	0.71	13.0	5,260
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.71	3.64	3.77	49.1	0.00	0.00	14.1	14.1	0.00	3.31	3.31	—	13,384	13,384	0.19	0.51	1.27	13,543
Vendor	0.39	0.10	5.33	2.62	0.04	0.04	1.37	1.41	0.04	0.38	0.42	—	5,032	5,032	0.25	0.71	0.34	5,250
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.14	2.09	2.18	29.5	0.00	0.00	8.05	8.05	0.00	1.88	1.88	—	7,832	7,832	0.11	0.30	12.2	7,935
Vendor	0.23	0.06	3.10	1.50	0.02	0.02	0.78	0.80	0.02	0.22	0.24	—	2,904	2,904	0.14	0.41	3.24	3,033
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.39	0.38	0.40	5.38	0.00	0.00	1.47	1.47	0.00	0.34	0.34	—	1,297	1,297	0.02	0.05	2.02	1,314
Vendor	0.04	0.01	0.57	0.27	< 0.005	< 0.005	0.14	0.15	< 0.005	0.04	0.04	—	481	481	0.02	0.07	0.54	502
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

## 3.11. Paving (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.91	0.76	7.12	9.94	0.01	0.32	—	0.32	0.29	—	0.29	—	1,511	1,511	0.06	0.01	—	1,516
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.39	0.54	< 0.005	0.02	—	0.02	0.02	—	0.02	—	82.8	82.8	< 0.005	< 0.005	—	83.1
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.7	13.7	< 0.005	< 0.005	—	13.8
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.05	0.68	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	186	186	< 0.005	0.01	0.02	188
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.3	10.3	< 0.005	< 0.005	0.02	10.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.71	1.71	< 0.005	< 0.005	< 0.005	1.73
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

### 3.13. Architectural Coating (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	0.86	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architect ural Coatings	—	315	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.32	7.32	< 0.005	< 0.005	—	7.34	
Architectural Coatings	—	17.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.21	1.21	< 0.005	< 0.005	—	1.22	
Architectural Coatings	—	3.15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Worker	0.74	0.73	0.75	9.82	0.00	0.00	2.82	2.82	0.00	0.66	0.66	—	2,677	2,677	0.04	0.10	0.25	2,709	
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Worker	0.04	0.04	0.04	0.56	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	149	149	< 0.005	0.01	0.23	151	
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	24.6	24.6	< 0.005	< 0.005	0.04	24.9	
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	

## 4. Operations Emissions Details

### 4.10. Soil Carbon Accumulation By Vegetation Type

#### 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

#### 4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
----------	-----	-----	-----	----	-----	-------	-------	-------	--------	--------	--------	------	-------	------	-----	-----	---	------

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—



Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

## 5. Activity Data

### 5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	6/2/2025	6/30/2025	5.00	20.0	—
Site Preparation	Site Preparation	7/1/2025	7/15/2025	5.00	10.0	—
Grading	Grading	7/16/2025	8/27/2025	5.00	30.0	—
Building Construction	Building Construction	8/28/2025	10/22/2026	5.00	300	—
Paving	Paving	10/23/2026	11/20/2026	5.00	20.0	—
Architectural Coating	Architectural Coating	11/21/2026	12/19/2026	5.00	20.0	—

## 5.2. Off-Road Equipment

### 5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

## 5.3. Construction Vehicles

### 5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	18.5	LDA,LDT1,LDT2
Demolition	Vendor	—	10.2	HHDT,MHDT
Demolition	Hauling	0.00	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10.2	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	—	10.2	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	1,080	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	160	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT

Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	216	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

## 5.4. Vehicles

### 5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

## 5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	2,035,125	678,375	0.00	0.00	—

## 5.6. Dust Mitigation

### 5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	—	—
Site Preparation	—	—	15.0	0.00	—
Grading	—	—	90.0	0.00	—
Paving	0.00	0.00	0.00	0.00	—

### 5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

### 5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Apartments High Rise	—	0%

### 5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	532	0.03	< 0.005
2026	0.00	532	0.03	< 0.005

### 5.18. Vegetation

#### 5.18.1. Land Use Change

##### 5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
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#### 5.18.1. Biomass Cover Type

##### 5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
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#### 5.18.2. Sequestration

##### 5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
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## 6. Climate Risk Detailed Report

### 6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	9.03	annual days of extreme heat
Extreme Precipitation	3.50	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	1.31	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about  $\frac{3}{4}$  an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

### 6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A

Air Quality Degradation	0	0	0	N/A
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The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

### 6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

### 6.4. Climate Risk Reduction Measures

## 7. Health and Equity Details

### 7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—

AQ-Ozone	58.2
AQ-PM	68.7
AQ-DPM	84.2
Drinking Water	53.2
Lead Risk Housing	28.7
Pesticides	11.8
Toxic Releases	91.4
Traffic	88.9
Effect Indicators	—
CleanUp Sites	97.3
Groundwater	99.0
Haz Waste Facilities/Generators	98.4
Impaired Water Bodies	83.0
Solid Waste	97.7
Sensitive Population	—
Asthma	17.0
Cardio-vascular	20.8
Low Birth Weights	54.8
Socioeconomic Factor Indicators	—
Education	49.2
Housing	39.2
Linguistic	59.4
Poverty	55.5
Unemployment	5.57

## 7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.



Indicator	Result for Project Census Tract
Economic	—
Above Poverty	47.45284229
Employed	76.27357885
Median HI	69.01065058
Education	—
Bachelor's or higher	70.42217375
High school enrollment	100
Preschool enrollment	16.21968433
Transportation	—
Auto Access	57.21801617
Active commuting	69.0619787
Social	—
2-parent households	42.17887848
Voting	31.99024766
Neighborhood	—
Alcohol availability	44.80944437
Park access	28.53843193
Retail density	94.63621199
Supermarket access	58.28307455
Tree canopy	29.41100988
Housing	—
Homeownership	19.54317978
Housing habitability	30.20659566
Low-inc homeowner severe housing cost burden	97.88271526
Low-inc renter severe housing cost burden	75.33684075
Uncrowded housing	22.40472219

Health Outcomes	—
Insured adults	50.3143847
Arthritis	98.6
Asthma ER Admissions	82.6
High Blood Pressure	98.8
Cancer (excluding skin)	96.0
Asthma	65.7
Coronary Heart Disease	98.7
Chronic Obstructive Pulmonary Disease	94.6
Diagnosed Diabetes	98.6
Life Expectancy at Birth	99.4
Cognitively Disabled	52.2
Physically Disabled	81.6
Heart Attack ER Admissions	76.4
Mental Health Not Good	58.7
Chronic Kidney Disease	99.0
Obesity	94.5
Pedestrian Injuries	72.5
Physical Health Not Good	93.2
Stroke	98.4
Health Risk Behaviors	—
Binge Drinking	4.3
Current Smoker	42.3
No Leisure Time for Physical Activity	69.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0

Children	25.4
Elderly	82.5
English Speaking	49.5
Foreign-born	80.9
Outdoor Workers	61.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	18.1
Traffic Density	92.8
Traffic Access	65.3
Other Indices	—
Hardship	52.6
Other Decision Support	—
2016 Voting	59.2

### 7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	64.0
Healthy Places Index Score for Project Location (b)	56.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

### 7.4. Health & Equity Measures

No Health & Equity Measures selected.

### 7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

## 7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

## 8. User Changes to Default Data

Screen	Justification
Land Use	Taken from client data
Construction: Construction Phases	Project start date taken from client data
Construction: Off-Road Equipment	T/L/B replaced with Crawler Tractor to accurately calculate disturbance for Site Preparation and Grading phases. Standard 8 hours work days.

ATTACHMENT B  
CALEEMOD CURRENT GENERAL PLAN/NO PROJECT SCENARIO  
EMISSIONS MODEL OUTPUTS

# 15369 - Irvine GPU Current General Plan (Operations) Detailed Report

## Table of Contents

- 1. Basic Project Information
  - 1.1. Basic Project Information
  - 1.2. Land Use Types
  - 1.3. User-Selected Emission Reduction Measures by Emissions Sector
- 2. Emissions Summary
  - 2.4. Operations Emissions Compared Against Thresholds
  - 2.5. Operations Emissions by Sector, Unmitigated
- 4. Operations Emissions Details
  - 4.1. Mobile Emissions by Land Use
    - 4.1.1. Unmitigated
  - 4.2. Energy
    - 4.2.1. Electricity Emissions By Land Use - Unmitigated
    - 4.2.3. Natural Gas Emissions By Land Use - Unmitigated
  - 4.3. Area Emissions by Source

4.3.1. Unmitigated

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

## 5. Activity Data

### 5.9. Operational Mobile Sources

#### 5.9.1. Unmitigated

### 5.10. Operational Area Sources

#### 5.10.1. Hearths

##### 5.10.1.1. Unmitigated

#### 5.10.2. Architectural Coatings

#### 5.10.3. Landscape Equipment

### 5.11. Operational Energy Consumption

#### 5.11.1. Unmitigated

### 5.12. Operational Water and Wastewater Consumption

#### 5.12.1. Unmitigated

### 5.13. Operational Waste Generation

#### 5.13.1. Unmitigated

### 5.14. Operational Refrigeration and Air Conditioning Equipment

#### 5.14.1. Unmitigated

### 5.15. Operational Off-Road Equipment



5.15.1. Unmitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

## 7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

## 8. User Changes to Default Data

# 1. Basic Project Information

## 1.1. Basic Project Information

Data Field	Value
Project Name	15369 - Irvine GPU Current General Plan (Operations)
Operational Year	2045
Lead Agency	—
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	19.6
Location	33.688397, -117.841364
County	Orange
City	Irvine
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	6804
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.21

## 1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Other Non-Asphalt Surfaces	5,000	Acre	5,000	0.00	0.00	—	—	Agriculture/Open Space

15369 - Irvine GPU Current General Plan (Operations) Detailed Report, 2/22/2024

Mobile Home Park	893	Dwelling Unit	112	1,160,900	0.00	—	2,661	—
Apartments High Rise	95,136	Dwelling Unit	1,534	91,330,560	0.00	—	283,505	Multi-family Housing
Retirement Community	1,079	Dwelling Unit	216	1,143,740	0.00	—	3,215	Senior Housing
Single Family Housing	30,000	Dwelling Unit	9,740	58,500,000	351,385,710	—	89,400	—
Single Family Housing	5,186	Dwelling Unit	1,684	10,112,700	60,742,876	—	15,454	—
Automobile Care Center	635	1000sqft	14.6	635,000	0.00	—	—	—
Day-Care Center	220	1000sqft	5.05	220,000	0.00	—	—	Childcare Center
Place of Worship	1,617	1000sqft	37.1	1,617,000	0.00	—	—	Church/Synagogue
University/College (4yr)	5,229	Student	22.1	961,077	0.00	0.00	—	—
Regional Shopping Center	8,734	1000sqft	201	8,734,000	0.00	—	—	Commercial
General Office Building	1,499	1000sqft	34.4	1,499,000	0.00	—	—	—
Government Office Building	1,357	1000sqft	31.2	1,357,000	0.00	—	—	—
Hospital	6,170	1000sqft	142	6,170,000	0.00	—	—	—
Hotel	504	Room	16.8	731,808	0.00	—	—	—
Junior High School	3,640	1000sqft	83.6	3,640,000	0.00	0.00	—	K-12 TSF
Research & Development	78,047	1000sqft	1,792	78,047,000	0.00	—	—	Office/R&D
City Park	51.0	Acre	51.0	0.00	0.00	0.00	—	Park and Recreation
Regional Shopping Center	1,894	1000sqft	43.5	1,894,000	0.00	—	—	Retail TSF
Other Asphalt Surfaces	23.0	1000sqft	0.53	0.00	0.00	—	—	Transportation TSF

Other Asphalt Surfaces	89.0	1000sqft	2.04	0.00	0.00	—	—	Utilities
Unrefrigerated Warehouse-No Rail	28,261	1000sqft	649	28,261,000	0.00	—	—	Warehouse/Industrial /Manufacturing

### 1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

## 2. Emissions Summary

### 2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3,558	9,875	5,483	49,290	143	345	14,439	14,784	340	3,663	4,002	225,371	18,861,898	19,087,269	23,510	596	139,095	19,991,808
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1,806	8,246	5,524	31,455	137	332	14,439	14,771	329	3,663	3,992	225,371	18,322,642	18,548,012	23,504	609	136,126	19,453,286
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2,685	9,181	3,507	39,410	120	174	13,554	13,728	169	3,439	3,608	225,371	15,311,287	15,536,658	23,445	592	137,298	16,436,369
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	490	1,676	640	7,192	22.0	31.7	2,474	2,505	30.9	628	658	37,313	2,534,958	2,572,271	3,882	97.9	22,731	2,721,228

## 2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1,408	1,068	1,681	34,000	119	38.0	14,439	14,477	35.6	3,663	3,698	—	12,125,097	12,125,097	247	312	3,048	12,227,173
Area	1,981	8,723	2,313	14,295	14.7	191	—	191	188	—	188	0.00	2,829,558	2,829,558	54.3	5.62	—	2,832,589
Energy	168	84.1	1,490	995	9.17	116	—	116	116	—	116	—	3,628,645	3,628,645	390	31.1	—	3,647,660
Water	—	—	—	—	—	—	—	—	—	—	—	100,011	278,598	378,609	10,290	248	—	709,747
Waste	—	—	—	—	—	—	—	—	—	—	—	125,360	0.00	125,360	12,529	0.00	—	438,592
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	136,047	136,047
Total	3,558	9,875	5,483	49,290	143	345	14,439	14,784	340	3,663	4,002	225,371	18,861,898	19,087,269	23,510	596	139,095	19,991,808
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1,381	1,047	1,840	29,527	114	38.0	14,439	14,477	35.6	3,663	3,698	—	11,629,831	11,629,831	242	325	79.0	11,732,799
Area	257	7,115	2,195	934	14.0	177	—	177	177	—	177	0.00	2,785,567	2,785,567	52.5	5.25	—	2,788,442
Energy	168	84.1	1,490	995	9.17	116	—	116	116	—	116	—	3,628,645	3,628,645	390	31.1	—	3,647,660
Water	—	—	—	—	—	—	—	—	—	—	—	100,011	278,598	378,609	10,290	248	—	709,747
Waste	—	—	—	—	—	—	—	—	—	—	—	125,360	0.00	125,360	12,529	0.00	—	438,592
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	136,047	136,047
Total	1,806	8,246	5,524	31,455	137	332	14,439	14,771	329	3,663	3,992	225,371	18,322,642	18,548,012	23,504	609	136,126	19,453,286

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1,318	1,000	1,787	29,200	110	36.2	13,554	13,590	33.8	3,439	3,473	—	11,183,121	11,183,121	231	312	1,251	11,283,096
Area	1,199	8,097	231	9,216	1.42	21.5	—	21.5	19.2	—	19.2	0.00	220,923	220,923	4.85	0.61	—	221,227
Energy	168	84.1	1,490	995	9.17	116	—	116	116	—	116	—	3,628,645	3,628,645	390	31.1	—	3,647,660
Water	—	—	—	—	—	—	—	—	—	—	—	100,011	278,598	378,609	10,290	248	—	709,747
Waste	—	—	—	—	—	—	—	—	—	—	—	125,360	0.00	125,360	12,529	0.00	—	438,592
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	136,047	136,047
Total	2,685	9,181	3,507	39,410	120	174	13,554	13,728	169	3,439	3,608	225,371	15,311,287	15,536,658	23,445	592	137,298	16,436,369
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	241	182	326	5,329	20.0	6.60	2,474	2,480	6.17	628	634	—	1,851,493	1,851,493	38.2	51.6	207	1,868,045
Area	219	1,478	42.2	1,682	0.26	3.93	—	3.93	3.51	—	3.51	0.00	36,576	36,576	0.80	0.10	—	36,627
Energy	30.7	15.3	272	182	1.67	21.2	—	21.2	21.2	—	21.2	—	600,764	600,764	64.5	5.15	—	603,912
Water	—	—	—	—	—	—	—	—	—	—	—	16,558	46,125	62,683	1,704	41.0	—	117,507
Waste	—	—	—	—	—	—	—	—	—	—	—	20,755	0.00	20,755	2,074	0.00	—	72,614
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	22,524	22,524
Total	490	1,676	640	7,192	22.0	31.7	2,474	2,505	30.9	628	658	37,313	2,534,958	2,572,271	3,882	97.9	22,731	2,721,228

## 4. Operations Emissions Details

### 4.1. Mobile Emissions by Land Use

#### 4.1.1. Unmitigated

Mobile source emissions results are presented in Sections 2.6. No further detailed breakdown of emissions is available.

## 4.2. Energy

### 4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Mobile Home Park	—	—	—	—	—	—	—	—	—	—	—	—	3,058	3,058	0.39	0.05	—	3,082
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	249,180	249,180	31.5	3.82	—	251,107
Retirement Community	—	—	—	—	—	—	—	—	—	—	—	—	2,957	2,957	0.37	0.05	—	2,979
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	173,344	173,344	21.9	2.66	—	174,684
Automobile Care Center	—	—	—	—	—	—	—	—	—	—	—	—	4,352	4,352	0.55	0.07	—	4,386
Day-Care Center	—	—	—	—	—	—	—	—	—	—	—	—	983	983	0.12	0.02	—	991
Place of Worship	—	—	—	—	—	—	—	—	—	—	—	—	11,083	11,083	1.40	0.17	—	11,168



15369 - Irvine GPU Current General Plan (Operations) Detailed Report, 2/22/2024

University/College	—	—	—	—	—	—	—	—	—	—	—	—	7,692	7,692	0.97	0.12	—	7,751
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	74,579	74,579	9.44	1.14	—	75,156
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	19,086	19,086	2.42	0.29	—	19,233
Government Office Building	—	—	—	—	—	—	—	—	—	—	—	—	17,278	17,278	2.19	0.27	—	17,411
Hospital	—	—	—	—	—	—	—	—	—	—	—	—	128,881	128,881	16.3	1.98	—	129,878
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	7,317	7,317	0.93	0.11	—	7,373
Junior High School	—	—	—	—	—	—	—	—	—	—	—	—	16,266	16,266	2.06	0.25	—	16,392
Research & Development	—	—	—	—	—	—	—	—	—	—	—	—	993,724	993,724	126	15.2	—	1,001,410
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	94,507	94,507	12.0	1.45	—	95,237
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,804,286	1,804,286	228	27.7	—	1,818,241
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Mobile Home Park	—	—	—	—	—	—	—	—	—	—	—	—	3,058	3,058	0.39	0.05	—	3,082
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	249,180	249,180	31.5	3.82	—	251,107
Retirement Community	—	—	—	—	—	—	—	—	—	—	—	—	2,957	2,957	0.37	0.05	—	2,979
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	173,344	173,344	21.9	2.66	—	174,684
Automobile Care Center	—	—	—	—	—	—	—	—	—	—	—	—	4,352	4,352	0.55	0.07	—	4,386
Day-Care Center	—	—	—	—	—	—	—	—	—	—	—	—	983	983	0.12	0.02	—	991
Place of Worship	—	—	—	—	—	—	—	—	—	—	—	—	11,083	11,083	1.40	0.17	—	11,168
University/College (4yr)	—	—	—	—	—	—	—	—	—	—	—	—	7,692	7,692	0.97	0.12	—	7,751
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	74,579	74,579	9.44	1.14	—	75,156
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	19,086	19,086	2.42	0.29	—	19,233

Government Office Building	—	—	—	—	—	—	—	—	—	—	—	—	17,278	17,278	2.19	0.27	—	17,411
Hospital	—	—	—	—	—	—	—	—	—	—	—	—	128,881	128,881	16.3	1.98	—	129,878
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	7,317	7,317	0.93	0.11	—	7,373
Junior High School	—	—	—	—	—	—	—	—	—	—	—	—	16,266	16,266	2.06	0.25	—	16,392
Research & Development	—	—	—	—	—	—	—	—	—	—	—	—	993,724	993,724	126	15.2	—	1,001,410
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	94,507	94,507	12.0	1.45	—	95,237
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,804,286	1,804,286	228	27.7	—	1,818,241
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Mobile Home Park	—	—	—	—	—	—	—	—	—	—	—	—	506	506	0.06	0.01	—	510
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	41,255	41,255	5.22	0.63	—	41,574

Retirement Community	—	—	—	—	—	—	—	—	—	—	—	—	489	489	0.06	0.01	—	493
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	28,699	28,699	3.63	0.44	—	28,921
Automobile Care Center	—	—	—	—	—	—	—	—	—	—	—	—	721	721	0.09	0.01	—	726
Day-Care Center	—	—	—	—	—	—	—	—	—	—	—	—	163	163	0.02	< 0.005	—	164
Place of Worship	—	—	—	—	—	—	—	—	—	—	—	—	1,835	1,835	0.23	0.03	—	1,849
University/College (4yr)	—	—	—	—	—	—	—	—	—	—	—	—	1,273	1,273	0.16	0.02	—	1,283
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	12,347	12,347	1.56	0.19	—	12,443
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	3,160	3,160	0.40	0.05	—	3,184
Government Office Building	—	—	—	—	—	—	—	—	—	—	—	—	2,861	2,861	0.36	0.04	—	2,883
Hospital	—	—	—	—	—	—	—	—	—	—	—	—	21,338	21,338	2.70	0.33	—	21,503
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	1,211	1,211	0.15	0.02	—	1,221
Junior High School	—	—	—	—	—	—	—	—	—	—	—	—	2,693	2,693	0.34	0.04	—	2,714

Research & Development	—	—	—	—	—	—	—	—	—	—	—	—	164,522	164,522	20.8	2.52	—	165,795
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	15,647	15,647	1.98	0.24	—	15,768
Total	—	—	—	—	—	—	—	—	—	—	—	—	298,720	298,720	37.8	4.58	—	301,030

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Mobile Home Park	0.81	0.41	6.94	2.95	0.04	0.56	—	0.56	0.56	—	0.56	—	8,809	8,809	0.78	0.02	—	8,833
Apartments High Rise	31.2	15.6	267	114	1.70	21.6	—	21.6	21.6	—	21.6	—	338,644	338,644	30.0	0.64	—	339,583
Retirement Community	0.52	0.26	4.44	1.89	0.03	0.36	—	0.36	0.36	—	0.36	—	5,639	5,639	0.50	0.01	—	5,654

15369 - Irvine GPU Current General Plan (Operations) Detailed Report, 2/22/2024

Single Family Housing	39.9	19.9	341	145	2.17	27.5	—	27.5	27.5	—	27.5	—	432,292	432,292	38.3	0.81	—	433,491
Automobile Care Center	0.80	0.40	7.30	6.13	0.04	0.55	—	0.55	0.55	—	0.55	—	8,711	8,711	0.77	0.02	—	8,735
Day-Care Center	0.14	0.07	1.24	1.04	0.01	0.09	—	0.09	0.09	—	0.09	—	1,479	1,479	0.13	< 0.005	—	1,483
Place of Worship	2.04	1.02	18.6	15.6	0.11	1.41	—	1.41	1.41	—	1.41	—	22,181	22,181	1.96	0.04	—	22,243
University/College (4yr)	1.41	0.71	12.9	10.8	0.08	0.98	—	0.98	0.98	—	0.98	—	15,343	15,343	1.36	0.03	—	15,385
Regional Shopping Center	1.88	0.94	17.1	14.4	0.10	1.30	—	1.30	1.30	—	1.30	—	20,392	20,392	1.80	0.04	—	20,449
General Office Building	1.12	0.56	10.2	8.57	0.06	0.78	—	0.78	0.78	—	0.78	—	12,177	12,177	1.08	0.02	—	12,210
Government Office Building	1.02	0.51	9.24	7.76	0.06	0.70	—	0.70	0.70	—	0.70	—	11,023	11,023	0.98	0.02	—	11,054
Hospital	9.94	4.97	90.4	75.9	0.54	6.87	—	6.87	6.87	—	6.87	—	107,846	107,846	9.54	0.20	—	108,145
Hotel	0.62	0.31	5.68	4.77	0.03	0.43	—	0.43	0.43	—	0.43	—	6,771	6,771	0.60	0.01	—	6,790
Junior High School	2.26	1.13	20.5	17.2	0.12	1.56	—	1.56	1.56	—	1.56	—	24,474	24,474	2.17	0.05	—	24,542
Research & Development	58.4	29.2	531	446	3.19	40.4	—	40.4	40.4	—	40.4	—	633,989	633,989	56.1	1.19	—	635,748
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

15369 - Irvine GPU Current General Plan (Operations) Detailed Report, 2/22/2024

Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Unrefrigerated Warehouse-No Rail	16.1	8.05	146	123	0.88	11.1	—	11.1	11.1	—	11.1	—	174,589	174,589	15.5	0.33	—	175,073
Total	168	84.1	1,490	995	9.17	116	—	116	116	—	116	—	1,824,359	1,824,359	161	3.44	—	1,829,419
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Mobile Home Park	0.81	0.41	6.94	2.95	0.04	0.56	—	0.56	0.56	—	0.56	—	8,809	8,809	0.78	0.02	—	8,833
Apartments High Rise	31.2	15.6	267	114	1.70	21.6	—	21.6	21.6	—	21.6	—	338,644	338,644	30.0	0.64	—	339,583
Retirement Community	0.52	0.26	4.44	1.89	0.03	0.36	—	0.36	0.36	—	0.36	—	5,639	5,639	0.50	0.01	—	5,654
Single Family Housing	39.9	19.9	341	145	2.17	27.5	—	27.5	27.5	—	27.5	—	432,292	432,292	38.3	0.81	—	433,491
Automobile Care Center	0.80	0.40	7.30	6.13	0.04	0.55	—	0.55	0.55	—	0.55	—	8,711	8,711	0.77	0.02	—	8,735
Day-Care Center	0.14	0.07	1.24	1.04	0.01	0.09	—	0.09	0.09	—	0.09	—	1,479	1,479	0.13	< 0.005	—	1,483

15369 - Irvine GPU Current General Plan (Operations) Detailed Report, 2/22/2024

Place of Worship	2.04	1.02	18.6	15.6	0.11	1.41	—	1.41	1.41	—	1.41	—	22,181	22,181	1.96	0.04	—	22,243
University/College (4yr)	1.41	0.71	12.9	10.8	0.08	0.98	—	0.98	0.98	—	0.98	—	15,343	15,343	1.36	0.03	—	15,385
Regional Shopping Center	1.88	0.94	17.1	14.4	0.10	1.30	—	1.30	1.30	—	1.30	—	20,392	20,392	1.80	0.04	—	20,449
General Office Building	1.12	0.56	10.2	8.57	0.06	0.78	—	0.78	0.78	—	0.78	—	12,177	12,177	1.08	0.02	—	12,210
Government Office Building	1.02	0.51	9.24	7.76	0.06	0.70	—	0.70	0.70	—	0.70	—	11,023	11,023	0.98	0.02	—	11,054
Hospital	9.94	4.97	90.4	75.9	0.54	6.87	—	6.87	6.87	—	6.87	—	107,846	107,846	9.54	0.20	—	108,145
Hotel	0.62	0.31	5.68	4.77	0.03	0.43	—	0.43	0.43	—	0.43	—	6,771	6,771	0.60	0.01	—	6,790
Junior High School	2.26	1.13	20.5	17.2	0.12	1.56	—	1.56	1.56	—	1.56	—	24,474	24,474	2.17	0.05	—	24,542
Research & Development	58.4	29.2	531	446	3.19	40.4	—	40.4	40.4	—	40.4	—	633,989	633,989	56.1	1.19	—	635,748
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Unrefrigerated Warehouse-No Rail	16.1	8.05	146	123	0.88	11.1	—	11.1	11.1	—	11.1	—	174,589	174,589	15.5	0.33	—	175,073
Total	168	84.1	1,490	995	9.17	116	—	116	116	—	116	—	1,824,359	1,824,359	161	3.44	—	1,829,419
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—



Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Mobile Home Park	0.15	0.07	1.27	0.54	0.01	0.10	—	0.10	0.10	—	0.10	—	1,458	1,458	0.13	< 0.005	—	1,462
Apartments High Rise	5.70	2.85	48.7	20.7	0.31	3.94	—	3.94	3.94	—	3.94	—	56,066	56,066	4.96	0.11	—	56,222
Retirement Community	0.09	0.05	0.81	0.34	0.01	0.07	—	0.07	0.07	—	0.07	—	934	934	0.08	< 0.005	—	936
Single Family Housing	7.27	3.64	62.2	26.4	0.40	5.03	—	5.03	5.03	—	5.03	—	71,571	71,571	6.33	0.13	—	71,769
Automobile Care Center	0.15	0.07	1.33	1.12	0.01	0.10	—	0.10	0.10	—	0.10	—	1,442	1,442	0.13	< 0.005	—	1,446
Day-Care Center	0.02	0.01	0.23	0.19	< 0.005	0.02	—	0.02	0.02	—	0.02	—	245	245	0.02	< 0.005	—	246
Place of Worship	0.37	0.19	3.39	2.85	0.02	0.26	—	0.26	0.26	—	0.26	—	3,672	3,672	0.32	0.01	—	3,683
University/College (4yr)	0.26	0.13	2.35	1.97	0.01	0.18	—	0.18	0.18	—	0.18	—	2,540	2,540	0.22	< 0.005	—	2,547
Regional Shopping Center	0.34	0.17	3.12	2.62	0.02	0.24	—	0.24	0.24	—	0.24	—	3,376	3,376	0.30	0.01	—	3,386
General Office Building	0.20	0.10	1.86	1.56	0.01	0.14	—	0.14	0.14	—	0.14	—	2,016	2,016	0.18	< 0.005	—	2,022

Government Office Building	0.19	0.09	1.69	1.42	0.01	0.13	—	0.13	0.13	—	0.13	—	1,825	1,825	0.16	< 0.005	—	1,830
Hospital	1.81	0.91	16.5	13.9	0.10	1.25	—	1.25	1.25	—	1.25	—	17,855	17,855	1.58	0.03	—	17,905
Hotel	0.11	0.06	1.04	0.87	0.01	0.08	—	0.08	0.08	—	0.08	—	1,121	1,121	0.10	< 0.005	—	1,124
Junior High School	0.41	0.21	3.74	3.14	0.02	0.28	—	0.28	0.28	—	0.28	—	4,052	4,052	0.36	0.01	—	4,063
Research & Development	10.7	5.33	97.0	81.5	0.58	7.37	—	7.37	7.37	—	7.37	—	104,964	104,964	9.29	0.20	—	105,255
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Unrefrigerated Warehouse-No Rail	2.94	1.47	26.7	22.4	0.16	2.03	—	2.03	2.03	—	2.03	—	28,905	28,905	2.56	0.05	—	28,985
<b>Total</b>	<b>30.7</b>	<b>15.3</b>	<b>272</b>	<b>182</b>	<b>1.67</b>	<b>21.2</b>	<b>—</b>	<b>21.2</b>	<b>21.2</b>	<b>—</b>	<b>21.2</b>	<b>—</b>	<b>302,043</b>	<b>302,043</b>	<b>26.7</b>	<b>0.57</b>	<b>—</b>	<b>302,881</b>

### 4.3. Area Emissions by Source

#### 4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	257	128	2,195	934	14.0	177	—	177	177	—	177	0.00	2,785,567	2,785,567	52.5	5.25	—	2,788,442

Consum Products	—	6,352	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architect ural Coatings	—	635	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipme nt	1,725	1,608	118	13,361	0.67	13.7	—	13.7	10.4	—	10.4	—	43,991	43,991	1.84	0.37	—	44,148
Total	1,981	8,723	2,313	14,295	14.7	191	—	191	188	—	188	0.00	2,829,558	2,829,558	54.3	5.62	—	2,832,589
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	257	128	2,195	934	14.0	177	—	177	177	—	177	0.00	2,785,567	2,785,567	52.5	5.25	—	2,788,442
Consum er Products	—	6,352	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architect ural Coatings	—	635	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	257	7,115	2,195	934	14.0	177	—	177	177	—	177	0.00	2,785,567	2,785,567	52.5	5.25	—	2,788,442
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	3.21	1.61	27.4	11.7	0.18	2.22	—	2.22	2.22	—	2.22	0.00	31,588	31,588	0.59	0.06	—	31,620
Consum er Products	—	1,159	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architect ural Coatings	—	116	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipme nt	216	201	14.8	1,670	0.08	1.71	—	1.71	1.29	—	1.29	—	4,989	4,989	0.21	0.04	—	5,006

Total	219	1,478	42.2	1,682	0.26	3.93	—	3.93	3.51	—	3.51	0.00	36,576	36,576	0.80	0.10	—	36,627
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### 4.4. Water Emissions by Land Use

#### 4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Mobile Home Park	—	—	—	—	—	—	—	—	—	—	—	64.2	163	227	6.61	0.16	—	440
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	6,841	17,364	24,205	704	16.9	—	46,843
Retirement Community	—	—	—	—	—	—	—	—	—	—	—	77.6	197	275	7.98	0.19	—	531
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	2,530	31,175	33,705	263	6.64	—	42,269
Automobile Care Center	—	—	—	—	—	—	—	—	—	—	—	114	291	405	11.8	0.28	—	784
Day-Care Center	—	—	—	—	—	—	—	—	—	—	—	18.1	45.9	64.0	1.86	0.04	—	124

Place of Worship	—	—	—	—	—	—	—	—	—	—	—	97.0	246	343	9.97	0.24	—	664
University/College (4yr)	—	—	—	—	—	—	—	—	—	—	—	21.5	54.5	75.9	2.21	0.05	—	147
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	1,509	3,829	5,337	155	3.73	—	10,329
General Office Building	—	—	—	—	—	—	—	—	—	—	—	511	1,296	1,806	52.5	1.26	—	3,496
Government Office Building	—	—	—	—	—	—	—	—	—	—	—	517	1,311	1,828	53.1	1.28	—	3,537
Hospital	—	—	—	—	—	—	—	—	—	—	—	1,484	3,766	5,249	153	3.67	—	10,158
Hotel	—	—	—	—	—	—	—	—	—	—	—	24.5	62.2	86.7	2.52	0.06	—	168
Junior High School	—	—	—	—	—	—	—	—	—	—	—	144	365	509	14.8	0.36	—	985
Research & Development	—	—	—	—	—	—	—	—	—	—	—	73,536	186,648	260,184	7,564	182	—	503,522
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	12,523	31,786	44,310	1,288	31.0	—	85,751
Total	—	—	—	—	—	—	—	—	—	—	—	100,011	278,598	378,609	10,290	248	—	709,747

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Mobile Home Park	—	—	—	—	—	—	—	—	—	—	—	64.2	163	227	6.61	0.16	—	440
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	6,841	17,364	24,205	704	16.9	—	46,843
Retirement Community	—	—	—	—	—	—	—	—	—	—	—	77.6	197	275	7.98	0.19	—	531
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	2,530	31,175	33,705	263	6.64	—	42,269
Automobile Care Center	—	—	—	—	—	—	—	—	—	—	—	114	291	405	11.8	0.28	—	784
Day-Care Center	—	—	—	—	—	—	—	—	—	—	—	18.1	45.9	64.0	1.86	0.04	—	124
Place of Worship	—	—	—	—	—	—	—	—	—	—	—	97.0	246	343	9.97	0.24	—	664
University/College (4yr)	—	—	—	—	—	—	—	—	—	—	—	21.5	54.5	75.9	2.21	0.05	—	147
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	1,509	3,829	5,337	155	3.73	—	10,329
General Office Building	—	—	—	—	—	—	—	—	—	—	—	511	1,296	1,806	52.5	1.26	—	3,496

Government Office Building	—	—	—	—	—	—	—	—	—	—	—	517	1,311	1,828	53.1	1.28	—	3,537
Hospital	—	—	—	—	—	—	—	—	—	—	—	1,484	3,766	5,249	153	3.67	—	10,158
Hotel	—	—	—	—	—	—	—	—	—	—	—	24.5	62.2	86.7	2.52	0.06	—	168
Junior High School	—	—	—	—	—	—	—	—	—	—	—	144	365	509	14.8	0.36	—	985
Research & Development	—	—	—	—	—	—	—	—	—	—	—	73,536	186,648	260,184	7,564	182	—	503,522
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	12,523	31,786	44,310	1,288	31.0	—	85,751
Total	—	—	—	—	—	—	—	—	—	—	—	100,011	278,598	378,609	10,290	248	—	709,747
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Mobile Home Park	—	—	—	—	—	—	—	—	—	—	—	10.6	27.0	37.6	1.09	0.03	—	72.8
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	1,133	2,875	4,007	117	2.80	—	7,755
Retirement Community	—	—	—	—	—	—	—	—	—	—	—	12.8	32.6	45.5	1.32	0.03	—	88.0

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	419	5,161	5,580	43.6	1.10	—	6,998
Automobile Care Center	—	—	—	—	—	—	—	—	—	—	—	19.0	48.1	67.1	1.95	0.05	—	130
Day-Care Center	—	—	—	—	—	—	—	—	—	—	—	2.99	7.60	10.6	0.31	0.01	—	20.5
Place of Worship	—	—	—	—	—	—	—	—	—	—	—	16.1	40.7	56.8	1.65	0.04	—	110
University/College (4yr)	—	—	—	—	—	—	—	—	—	—	—	3.55	9.02	12.6	0.37	0.01	—	24.3
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	250	634	884	25.7	0.62	—	1,710
General Office Building	—	—	—	—	—	—	—	—	—	—	—	84.5	215	299	8.69	0.21	—	579
Government Office Building	—	—	—	—	—	—	—	—	—	—	—	85.5	217	303	8.80	0.21	—	586
Hospital	—	—	—	—	—	—	—	—	—	—	—	246	623	869	25.3	0.61	—	1,682
Hotel	—	—	—	—	—	—	—	—	—	—	—	4.06	10.3	14.4	0.42	0.01	—	27.8
Junior High School	—	—	—	—	—	—	—	—	—	—	—	23.8	60.4	84.3	2.45	0.06	—	163
Research & Development	—	—	—	—	—	—	—	—	—	—	—	12,175	30,902	43,076	1,252	30.1	—	83,364
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00



Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	2,073	5,263	7,336	213	5.13	—	14,197
Total	—	—	—	—	—	—	—	—	—	—	—	16,558	46,125	62,683	1,704	41.0	—	117,507

### 4.5. Waste Emissions by Land Use

#### 4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Mobile Home Park	—	—	—	—	—	—	—	—	—	—	—	356	0.00	356	35.6	0.00	—	1,245
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	37,914	0.00	37,914	3,789	0.00	—	132,649
Retirement Community	—	—	—	—	—	—	—	—	—	—	—	1,582	0.00	1,582	158	0.00	—	5,535
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	14,991	0.00	14,991	1,498	0.00	—	52,449

Automob Care Center	—	—	—	—	—	—	—	—	—	—	—	1,307	0.00	1,307	131	0.00	—	4,574
Day-Car e Center	—	—	—	—	—	—	—	—	—	—	—	154	0.00	154	15.4	0.00	—	539
Place of Worship	—	—	—	—	—	—	—	—	—	—	—	4,967	0.00	4,967	496	0.00	—	17,379
Universit y/College (4yr)	—	—	—	—	—	—	—	—	—	—	—	514	0.00	514	51.4	0.00	—	1,799
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	6,014	0.00	6,014	601	0.00	—	21,042
General Office Building	—	—	—	—	—	—	—	—	—	—	—	751	0.00	751	75.1	0.00	—	2,629
Governm ent Office Building	—	—	—	—	—	—	—	—	—	—	—	680	0.00	680	68.0	0.00	—	2,380
Hospital	—	—	—	—	—	—	—	—	—	—	—	35,913	0.00	35,913	3,589	0.00	—	125,646
Hotel	—	—	—	—	—	—	—	—	—	—	—	149	0.00	149	14.9	0.00	—	520
Junior High School	—	—	—	—	—	—	—	—	—	—	—	2,550	0.00	2,550	255	0.00	—	8,922
Researc & Development	—	—	—	—	—	—	—	—	—	—	—	3,196	0.00	3,196	319	0.00	—	11,183
City Park	—	—	—	—	—	—	—	—	—	—	—	2.36	0.00	2.36	0.24	0.00	—	8.27
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Unrefrigerated Warehouse Rail	—	—	—	—	—	—	—	—	—	—	—	14,317	0.00	14,317	1,431	0.00	—	50,091
Total	—	—	—	—	—	—	—	—	—	—	—	125,360	0.00	125,360	12,529	0.00	—	438,592
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Mobile Home Park	—	—	—	—	—	—	—	—	—	—	—	356	0.00	356	35.6	0.00	—	1,245
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	37,914	0.00	37,914	3,789	0.00	—	132,649
Retirement Community	—	—	—	—	—	—	—	—	—	—	—	1,582	0.00	1,582	158	0.00	—	5,535
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	14,991	0.00	14,991	1,498	0.00	—	52,449
Automobile Care Center	—	—	—	—	—	—	—	—	—	—	—	1,307	0.00	1,307	131	0.00	—	4,574
Day-Care Center	—	—	—	—	—	—	—	—	—	—	—	154	0.00	154	15.4	0.00	—	539
Place of Worship	—	—	—	—	—	—	—	—	—	—	—	4,967	0.00	4,967	496	0.00	—	17,379
University/College (4yr)	—	—	—	—	—	—	—	—	—	—	—	514	0.00	514	51.4	0.00	—	1,799

Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	6,014	0.00	6,014	601	0.00	—	21,042
General Office Building	—	—	—	—	—	—	—	—	—	—	—	751	0.00	751	75.1	0.00	—	2,629
Government Office Building	—	—	—	—	—	—	—	—	—	—	—	680	0.00	680	68.0	0.00	—	2,380
Hospital	—	—	—	—	—	—	—	—	—	—	—	35,913	0.00	35,913	3,589	0.00	—	125,646
Hotel	—	—	—	—	—	—	—	—	—	—	—	149	0.00	149	14.9	0.00	—	520
Junior High School	—	—	—	—	—	—	—	—	—	—	—	2,550	0.00	2,550	255	0.00	—	8,922
Research & Development	—	—	—	—	—	—	—	—	—	—	—	3,196	0.00	3,196	319	0.00	—	11,183
City Park	—	—	—	—	—	—	—	—	—	—	—	2.36	0.00	2.36	0.24	0.00	—	8.27
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	14,317	0.00	14,317	1,431	0.00	—	50,091
Total	—	—	—	—	—	—	—	—	—	—	—	125,360	0.00	125,360	12,529	0.00	—	438,592
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Mobile Home Park	—	—	—	—	—	—	—	—	—	—	—	58.9	0.00	58.9	5.89	0.00	—	206

Apartment High Rise	—	—	—	—	—	—	—	—	—	—	—	6,277	0.00	6,277	627	0.00	—	21,962
Retirement Community	—	—	—	—	—	—	—	—	—	—	—	262	0.00	262	26.2	0.00	—	916
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	2,482	0.00	2,482	248	0.00	—	8,683
Automobile Care Center	—	—	—	—	—	—	—	—	—	—	—	216	0.00	216	21.6	0.00	—	757
Day-Care Center	—	—	—	—	—	—	—	—	—	—	—	25.5	0.00	25.5	2.55	0.00	—	89.3
Place of Worship	—	—	—	—	—	—	—	—	—	—	—	822	0.00	822	82.2	0.00	—	2,877
University/College (4yr)	—	—	—	—	—	—	—	—	—	—	—	85.1	0.00	85.1	8.51	0.00	—	298
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	996	0.00	996	99.5	0.00	—	3,484
General Office Building	—	—	—	—	—	—	—	—	—	—	—	124	0.00	124	12.4	0.00	—	435
Government Office Building	—	—	—	—	—	—	—	—	—	—	—	113	0.00	113	11.3	0.00	—	394
Hospital	—	—	—	—	—	—	—	—	—	—	—	5,946	0.00	5,946	594	0.00	—	20,802
Hotel	—	—	—	—	—	—	—	—	—	—	—	24.6	0.00	24.6	2.46	0.00	—	86.1

Junior High School	—	—	—	—	—	—	—	—	—	—	—	422	0.00	422	42.2	0.00	—	1,477
Research & Development	—	—	—	—	—	—	—	—	—	—	—	529	0.00	529	52.9	0.00	—	1,852
City Park	—	—	—	—	—	—	—	—	—	—	—	0.39	0.00	0.39	0.04	0.00	—	1.37
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	2,370	0.00	2,370	237	0.00	—	8,293
Total	—	—	—	—	—	—	—	—	—	—	—	20,755	0.00	20,755	2,074	0.00	—	72,614

## 4.6. Refrigerant Emissions by Land Use

### 4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile Home Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.31	8.31
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	654	654

Retirement Community	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	14.5	14.5
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	491	491
Automobile Care Center	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	131,648	131,648
Day-Care Center	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.85	0.85
Place of Worship	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.25	6.25
University/College (4yr)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.71	3.71
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	51.0	51.0
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.65	3.65
Government Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.30	3.30
Hospital	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.67	9.67
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,144	1,144
Junior High School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	14.1	14.1

Research & Development	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,994	1,994
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	136,047	136,047
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile Home Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.31	8.31
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	654	654
Retirement Community	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	14.5	14.5
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	491	491
Automobile Care Center	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	131,648	131,648
Day-Care Center	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.85	0.85
Place of Worship	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.25	6.25
University/College (4yr)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.71	3.71



Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	51.0	51.0
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.65	3.65
Government Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.30	3.30
Hospital	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.67	9.67
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,144	1,144
Junior High School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	14.1	14.1
Research & Development	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,994	1,994
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	136,047	136,047
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile Home Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.38	1.38
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	108	108
Retirement Community	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.40	2.40
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	81.4	81.4

Automob Care Center	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	21,796	21,796
Day-Car e Center	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.14	0.14
Place of Worship	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.03	1.03
Universit y/College (4yr)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.61	0.61
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.45	8.45
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.60	0.60
Governm ent Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.55	0.55
Hospital	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.60	1.60
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	189	189
Junior High School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.33	2.33
Researc h & Development	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	330	330
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	22,524	22,524

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

### 4.9. User Defined Emissions By Equipment Type

#### 4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

### 4.10. Soil Carbon Accumulation By Vegetation Type

#### 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

## 5. Activity Data

### 5.9. Operational Mobile Sources

#### 5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Total all Land Uses	0.00	0.00	0.00	0.00	20,437,228	16,909,651	16,909,651	7,091,712,333

### 5.10. Operational Area Sources

#### 5.10.1. Hearths

##### 5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Mobile Home Park	—
Wood Fireplaces	0
Gas Fireplaces	893
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Apartments High Rise	—
Wood Fireplaces	0
Gas Fireplaces	95136
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Retirement Community	—

Wood Fireplaces	0
Gas Fireplaces	1079
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	30000
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Wood Fireplaces	0
Gas Fireplaces	5186
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
328551997.5	109,517,333	200,650,328	66,883,443	13,074,720

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250



## 5.11. Operational Energy Consumption

### 5.11.1. Unmitigated

#### Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Other Non-Asphalt Surfaces	0.00	261	0.0330	0.0040	0.00
Mobile Home Park	4,280,332	261	0.0330	0.0040	27,486,431
Apartments High Rise	348,752,793	261	0.0330	0.0040	1,056,660,606
Retirement Community	4,138,014	261	0.0330	0.0040	17,593,824
Single Family Housing	206,854,353	261	0.0330	0.0040	1,150,060,385
Single Family Housing	35,758,222	261	0.0330	0.0040	198,807,105
Automobile Care Center	6,091,387	261	0.0330	0.0040	27,179,233
Day-Care Center	1,375,956	261	0.0330	0.0040	4,615,576
Place of Worship	15,511,454	261	0.0330	0.0040	69,210,740
University/College (4yr)	10,765,681	261	0.0330	0.0040	47,874,017
Regional Shopping Center	85,779,814	261	0.0330	0.0040	52,289,970
General Office Building	26,712,609	261	0.0330	0.0040	37,994,355
Government Office Building	24,182,129	261	0.0330	0.0040	34,395,156
Hospital	180,382,780	261	0.0330	0.0040	336,508,111
Hotel	10,240,704	261	0.0330	0.0040	21,128,542
Junior High School	22,765,819	261	0.0330	0.0040	76,366,803
Research & Development	1,390,819,885	261	0.0330	0.0040	1,978,215,744
City Park	0.00	261	0.0330	0.0040	0.00
Regional Shopping Center	18,601,668	261	0.0330	0.0040	11,339,272
Other Asphalt Surfaces	0.00	261	0.0330	0.0040	0.00
Other Asphalt Surfaces	0.00	261	0.0330	0.0040	0.00
Unrefrigerated Warehouse-No Rail	132,271,738	261	0.0330	0.0040	544,763,167

## 5.12. Operational Water and Wastewater Consumption

### 5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Other Non-Asphalt Surfaces	0.00	0.00
Mobile Home Park	33,510,405	0.00
Apartments High Rise	3,570,040,238	0.00
Retirement Community	40,490,176	0.00
Single Family Housing	1,125,769,500	5,566,109,604
Single Family Housing	194,608,021	962,194,807
Automobile Care Center	59,741,503	0.00
Day-Care Center	9,435,705	0.00
Place of Worship	50,594,165	0.00
University/College (4yr)	11,195,812	0.00
Regional Shopping Center	646,949,403	0.00
General Office Building	266,422,888	0.00
Government Office Building	269,581,194	0.00
Hospital	774,214,917	0.00
Hotel	12,784,852	0.00
Junior High School	75,060,456	0.00
Research & Development	38,375,237,497	0.00
City Park	0.00	0.00
Regional Shopping Center	140,293,356	0.00
Other Asphalt Surfaces	0.00	0.00
Other Asphalt Surfaces	0.00	0.00
Unrefrigerated Warehouse-No Rail	6,535,356,250	0.00

## 5.13. Operational Waste Generation

### 5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Other Non-Asphalt Surfaces	0.00	—
Mobile Home Park	660	—
Apartments High Rise	70,350	—
Retirement Community	2,936	—
Single Family Housing	23,716	—
Single Family Housing	4,100	—
Automobile Care Center	2,426	—
Day-Care Center	286	—
Place of Worship	9,217	—
University/College (4yr)	954	—
Regional Shopping Center	9,171	—
General Office Building	1,394	—
Government Office Building	1,262	—
Hospital	66,636	—
Hotel	276	—
Junior High School	4,732	—
Research & Development	5,931	—
City Park	4.39	—
Regional Shopping Center	1,989	—
Other Asphalt Surfaces	0.00	—
Other Asphalt Surfaces	0.00	—
Unrefrigerated Warehouse-No Rail	26,565	—

## 5.14. Operational Refrigeration and Air Conditioning Equipment

### 5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Mobile Home Park	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Mobile Home Park	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Apartments High Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments High Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Retirement Community	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Retirement Community	Household refrigerators and/or freezers	R-134a	1,430	0.22	0.60	0.00	1.00
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Automobile Care Center	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Automobile Care Center	Supermarket refrigeration and condensing units	R-404A	3,922	26.5	16.5	16.5	18.0

Day-Care Center	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
Day-Care Center	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Day-Care Center	Stand-alone retail refrigerators and freezers	R-134a	1,430	< 0.005	1.00	0.00	1.00
Day-Care Center	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
Place of Worship	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
Place of Worship	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Place of Worship	Stand-alone retail refrigerators and freezers	R-134a	1,430	< 0.005	1.00	0.00	1.00
Place of Worship	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
University/College (4yr)	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
University/College (4yr)	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
University/College (4yr)	Stand-alone retail refrigerators and freezers	R-134a	1,430	< 0.005	1.00	0.00	1.00
University/College (4yr)	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
Regional Shopping Center	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Regional Shopping Center	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
General Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00

General Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Government Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
Government Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Hospital	Chillers	R-134a	1,430	< 0.005	2.00	2.00	23.0
Hospital	Household refrigerators and/or freezers	R-134a	1,430	< 0.005	0.60	0.00	1.00
Hospital	Stand-alone retail refrigerators and freezers	R-134a	1,430	< 0.005	1.00	0.00	1.00
Hospital	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
Hotel	Household refrigerators and/or freezers	R-134a	1,430	0.00	0.60	0.00	1.00
Hotel	Other commercial A/C and heat pumps	R-410A	2,088	1.80	4.00	4.00	18.0
Hotel	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
Junior High School	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
Junior High School	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Junior High School	Stand-alone retail refrigerators and freezers	R-134a	1,430	< 0.005	1.00	0.00	1.00
Junior High School	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
Research & Development	Household refrigerators and/or freezers	R-134a	1,430	0.45	0.60	0.00	1.00
Research & Development	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Regional Shopping Center	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Regional Shopping Center	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00

## 5.15. Operational Off-Road Equipment

### 5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
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## 5.16. Stationary Sources

### 5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
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### 5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)
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## 5.17. User Defined

Equipment Type	Fuel Type
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## 5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
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5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
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5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
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## 6. Climate Risk Detailed Report

### 6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	9.03	annual days of extreme heat
Extreme Precipitation	3.50	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	1.31	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.



Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events.

Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

## 6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

## 6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2

Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

## 6.4. Climate Risk Reduction Measures

# 7. Health and Equity Details

## 7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	58.2
AQ-PM	68.7
AQ-DPM	84.2
Drinking Water	53.2
Lead Risk Housing	28.7
Pesticides	11.8
Toxic Releases	91.4
Traffic	88.9
Effect Indicators	—
CleanUp Sites	97.3
Groundwater	99.0

Haz Waste Facilities/Generators	98.4
Impaired Water Bodies	83.0
Solid Waste	97.7
Sensitive Population	—
Asthma	17.0
Cardio-vascular	20.8
Low Birth Weights	54.8
Socioeconomic Factor Indicators	—
Education	49.2
Housing	39.2
Linguistic	59.4
Poverty	55.5
Unemployment	5.57

## 7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	47.45284229
Employed	76.27357885
Median HI	69.01065058
Education	—
Bachelor's or higher	70.42217375
High school enrollment	100
Preschool enrollment	16.21968433
Transportation	—
Auto Access	57.21801617

Active commuting	69.0619787
Social	—
2-parent households	42.17887848
Voting	31.99024766
Neighborhood	—
Alcohol availability	44.80944437
Park access	28.53843193
Retail density	94.63621199
Supermarket access	58.28307455
Tree canopy	29.41100988
Housing	—
Homeownership	19.54317978
Housing habitability	30.20659566
Low-inc homeowner severe housing cost burden	97.88271526
Low-inc renter severe housing cost burden	75.33684075
Uncrowded housing	22.40472219
Health Outcomes	—
Insured adults	50.3143847
Arthritis	98.6
Asthma ER Admissions	82.6
High Blood Pressure	98.8
Cancer (excluding skin)	96.0
Asthma	65.7
Coronary Heart Disease	98.7
Chronic Obstructive Pulmonary Disease	94.6
Diagnosed Diabetes	98.6
Life Expectancy at Birth	99.4

Cognitively Disabled	52.2
Physically Disabled	81.6
Heart Attack ER Admissions	76.4
Mental Health Not Good	58.7
Chronic Kidney Disease	99.0
Obesity	94.5
Pedestrian Injuries	72.5
Physical Health Not Good	93.2
Stroke	98.4
Health Risk Behaviors	—
Binge Drinking	4.3
Current Smoker	42.3
No Leisure Time for Physical Activity	69.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	25.4
Elderly	82.5
English Speaking	49.5
Foreign-born	80.9
Outdoor Workers	61.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	18.1
Traffic Density	92.8
Traffic Access	65.3
Other Indices	—
Hardship	52.6

Other Decision Support	—
2016 Voting	59.2

### 7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	64.0
Healthy Places Index Score for Project Location (b)	56.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

### 7.4. Health & Equity Measures

No Health & Equity Measures selected.

### 7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

### 7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

## 8. User Changes to Default Data

Screen	Justification
Operations: Hearths	SCAQMD Rule 445 no wood burning devices. Wood burning devices added to gas devices.

ATTACHMENT C  
CALEEMOD CONSERVATIVE/PROPOSED PROJECT SCENARIO  
EMISSIONS MODEL OUTPUTS

# 15937 - Irvine GPU Conservative Project Alternative (Operations) Detailed Report

## Table of Contents

### 1. Basic Project Information

#### 1.1. Basic Project Information

#### 1.2. Land Use Types

#### 1.3. User-Selected Emission Reduction Measures by Emissions Sector

### 2. Emissions Summary

#### 2.4. Operations Emissions Compared Against Thresholds

#### 2.5. Operations Emissions by Sector, Unmitigated

### 4. Operations Emissions Details

#### 4.1. Mobile Emissions by Land Use

##### 4.1.1. Unmitigated

#### 4.2. Energy

##### 4.2.1. Electricity Emissions By Land Use - Unmitigated

##### 4.2.3. Natural Gas Emissions By Land Use - Unmitigated



#### 4.3. Area Emissions by Source

##### 4.3.1. Unmitigated

#### 4.4. Water Emissions by Land Use

##### 4.4.1. Unmitigated

#### 4.5. Waste Emissions by Land Use

##### 4.5.1. Unmitigated

#### 4.6. Refrigerant Emissions by Land Use

##### 4.6.1. Unmitigated

#### 4.7. Offroad Emissions By Equipment Type

##### 4.7.1. Unmitigated

#### 4.8. Stationary Emissions By Equipment Type

##### 4.8.1. Unmitigated

#### 4.9. User Defined Emissions By Equipment Type

##### 4.9.1. Unmitigated

#### 4.10. Soil Carbon Accumulation By Vegetation Type

##### 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

##### 4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

## 5.15. Operational Off-Road Equipment

### 5.15.1. Unmitigated

## 5.16. Stationary Sources

### 5.16.1. Emergency Generators and Fire Pumps

### 5.16.2. Process Boilers

## 5.17. User Defined

## 5.18. Vegetation

### 5.18.1. Land Use Change

#### 5.18.1.1. Unmitigated

### 5.18.1. Biomass Cover Type

#### 5.18.1.1. Unmitigated

### 5.18.2. Sequestration

#### 5.18.2.1. Unmitigated

## 6. Climate Risk Detailed Report

### 6.1. Climate Risk Summary

### 6.2. Initial Climate Risk Scores

### 6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

# 1. Basic Project Information

## 1.1. Basic Project Information

Data Field	Value
Project Name	15937 - Irvine GPU Conservative Project Alternative (Operations)
Operational Year	2045
Lead Agency	—
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	19.6
Location	33.688397, -117.841364
County	Orange
City	Irvine
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	6804
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.21

## 1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Condo/Townhouse	37,345	Dwelling Unit	2,334	39,585,700	0.00	—	111,288	—

Apartments High Rise	18,050	Dwelling Unit	291	17,328,000	0.00	—	53,789	Multi-Family Housing
City Park	20.0	Acre	20.0	0.00	0.00	0.00	—	Botanical Garden
City Park	20.0	Acre	20.0	0.00	0.00	0.00	—	Veterans Memorial Garden
Library	60.0	1000sqft	1.38	60,000	0.00	—	—	—
General Office Building	7.18	1000sqft	0.16	7,180	0.00	—	—	Discovery Center
General Office Building	800	1000sqft	18.4	800,000	0.00	—	—	New Museum
City Park	65.0	Acre	65.0	0.00	0.00	0.00	—	—
High Turnover (Sit Down Restaurant)	23.0	1000sqft	0.53	23,000	0.00	—	—	Accessory Restaurant
Recreational Swimming Pool	40.4	1000sqft	0.93	40,365	0.00	—	—	Aquatic Center Pools
Arena	26.1	1000sqft	8.41	26,150	0.00	—	—	Aquatic Stadium
City Park	6.00	Acre	6.00	0.00	0.00	0.00	—	Skate Park
Racquet Club	17.6	1000sqft	0.40	17,600	0.00	—	—	Pickleball Court

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	498	1,735	1,307	5,212	13.1	100	636	737	100.0	161	261	27,145	2,262,087	2,289,232	2,814	30.1	580	2,369,127
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	202	1,454	1,285	1,816	12.7	98.9	636	735	98.8	161	260	27,145	2,231,699	2,258,844	2,813	30.6	450	2,338,748
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	301	1,594	446	3,629	7.15	30.7	597	628	30.3	151	182	27,145	1,131,389	1,158,534	2,792	28.1	501	1,237,205
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	54.9	291	81.5	662	1.30	5.60	109	115	5.53	27.6	33.2	4,494	187,314	191,809	462	4.64	83.0	204,833

## 2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	62.0	47.1	74.1	1,498	5.25	1.68	636	638	1.57	161	163	—	534,152	534,152	10.9	13.7	134	538,649
Area	403	1,671	948	3,590	6.00	75.8	—	75.8	75.4	—	75.4	0.00	1,174,960	1,174,960	22.3	2.27	—	1,176,194
Energy	33.3	16.6	285	124	1.81	23.0	—	23.0	23.0	—	23.0	—	542,052	542,052	54.9	3.46	—	544,455
Water	—	—	—	—	—	—	—	—	—	—	—	4,303	10,923	15,226	443	10.7	—	29,466
Waste	—	—	—	—	—	—	—	—	—	—	—	22,842	0.00	22,842	2,283	0.00	—	79,916
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	446	446
Total	498	1,735	1,307	5,212	13.1	100	636	737	100.0	161	261	27,145	2,262,087	2,289,232	2,814	30.1	580	2,369,127

15937 - Irvine GPU Conservative Project Alternative (Operations) Detailed Report, 2/21/2024

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	60.8	46.1	81.0	1,301	5.03	1.68	636	638	1.57	161	163	—	512,334	512,334	10.7	14.3	3.48	516,870
Area	108	1,392	919	391	5.87	74.3	—	74.3	74.3	—	74.3	0.00	1,166,391	1,166,391	22.0	2.20	—	1,167,594
Energy	33.3	16.6	285	124	1.81	23.0	—	23.0	23.0	—	23.0	—	542,052	542,052	54.9	3.46	—	544,455
Water	—	—	—	—	—	—	—	—	—	—	—	4,303	10,923	15,226	443	10.7	—	29,466
Waste	—	—	—	—	—	—	—	—	—	—	—	22,842	0.00	22,842	2,283	0.00	—	79,916
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	446	446
Total	202	1,454	1,285	1,816	12.7	98.9	636	735	98.8	161	260	27,145	2,231,699	2,258,844	2,813	30.6	450	2,338,748
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	58.1	44.1	78.7	1,286	4.84	1.59	597	599	1.49	151	153	—	492,655	492,655	10.2	13.7	55.1	497,059
Area	210	1,533	83.0	2,218	0.50	6.10	—	6.10	5.85	—	5.85	0.00	85,759	85,759	1.75	0.20	—	85,863
Energy	33.3	16.6	285	124	1.81	23.0	—	23.0	23.0	—	23.0	—	542,052	542,052	54.9	3.46	—	544,455
Water	—	—	—	—	—	—	—	—	—	—	—	4,303	10,923	15,226	443	10.7	—	29,466
Waste	—	—	—	—	—	—	—	—	—	—	—	22,842	0.00	22,842	2,283	0.00	—	79,916
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	446	446
Total	301	1,594	446	3,629	7.15	30.7	597	628	30.3	151	182	27,145	1,131,389	1,158,534	2,792	28.1	501	1,237,205
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	10.6	8.04	14.4	235	0.88	0.29	109	109	0.27	27.6	27.9	—	81,565	81,565	1.68	2.28	9.13	82,294
Area	38.3	280	15.2	405	0.09	1.11	—	1.11	1.07	—	1.07	0.00	14,198	14,198	0.29	0.03	—	14,216
Energy	6.07	3.03	51.9	22.7	0.33	4.19	—	4.19	4.19	—	4.19	—	89,743	89,743	9.08	0.57	—	90,141
Water	—	—	—	—	—	—	—	—	—	—	—	712	1,808	2,521	73.3	1.76	—	4,879
Waste	—	—	—	—	—	—	—	—	—	—	—	3,782	0.00	3,782	378	0.00	—	13,231
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	73.9	73.9
Total	54.9	291	81.5	662	1.30	5.60	109	115	5.53	27.6	33.2	4,494	187,314	191,809	462	4.64	83.0	204,833



## 4. Operations Emissions Details

### 4.1. Mobile Emissions by Land Use

#### 4.1.1. Unmitigated

Mobile source emissions results are presented in Sections 2.6. No further detailed breakdown of emissions is available.

### 4.2. Energy

#### 4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	122,531	122,531	15.5	1.88	—	123,478
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	47,276	47,276	5.98	0.73	—	47,642
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Library	—	—	—	—	—	—	—	—	—	—	—	—	411	411	0.05	0.01	—	414
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	10,277	10,277	1.30	0.16	—	10,357
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	569	569	0.07	0.01	—	573

Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Arena	—	—	—	—	—	—	—	—	—	—	—	—	179	179	0.02	< 0.005	—	181
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	—	121	121	0.02	< 0.005	—	122
Total	—	—	—	—	—	—	—	—	—	—	—	—	181,365	181,365	22.9	2.78	—	182,767
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	122,531	122,531	15.5	1.88	—	123,478
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	47,276	47,276	5.98	0.73	—	47,642
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Library	—	—	—	—	—	—	—	—	—	—	—	—	411	411	0.05	0.01	—	414
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	10,277	10,277	1.30	0.16	—	10,357
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	569	569	0.07	0.01	—	573
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Arena	—	—	—	—	—	—	—	—	—	—	—	—	179	179	0.02	< 0.005	—	181
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	—	121	121	0.02	< 0.005	—	122
Total	—	—	—	—	—	—	—	—	—	—	—	—	181,365	181,365	22.9	2.78	—	182,767

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	20,286	20,286	2.57	0.31	—	20,443
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	7,827	7,827	0.99	0.12	—	7,888
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Library	—	—	—	—	—	—	—	—	—	—	—	—	68.1	68.1	0.01	< 0.005	—	68.6
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	1,702	1,702	0.22	0.03	—	1,715
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	94.2	94.2	0.01	< 0.005	—	94.9
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Arena	—	—	—	—	—	—	—	—	—	—	—	—	29.7	29.7	< 0.005	< 0.005	—	29.9
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	—	20.0	20.0	< 0.005	< 0.005	—	20.1
Total	—	—	—	—	—	—	—	—	—	—	—	—	30,027	30,027	3.80	0.46	—	30,259

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

15937 - Irvine GPU Conservative Project Alternative (Operations) Detailed Report, 2/21/2024

Condo/Townhouse	26.5	13.3	227	96.4	1.45	18.3	—	18.3	18.3	—	18.3	—	287,608	287,608	25.5	0.54	—	288,406
Apartments High Rise	5.92	2.96	50.6	21.5	0.32	4.09	—	4.09	4.09	—	4.09	—	64,250	64,250	5.69	0.12	—	64,429
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Library	0.08	0.04	0.69	0.58	< 0.005	0.05	—	0.05	0.05	—	0.05	—	823	823	0.07	< 0.005	—	825
General Office Building	0.60	0.30	5.50	4.62	0.03	0.42	—	0.42	0.42	—	0.42	—	6,557	6,557	0.58	0.01	—	6,575
High Turnover (Sit Down Restaurant)	0.08	0.04	0.71	0.60	< 0.005	0.05	—	0.05	0.05	—	0.05	—	849	849	0.08	< 0.005	—	851
Recreational Swimming Pool	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Arena	0.03	0.02	0.30	0.25	< 0.005	0.02	—	0.02	0.02	—	0.02	—	359	359	0.03	< 0.005	—	360
Racquet Club	0.02	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	—	241	241	0.02	< 0.005	—	242
Total	33.3	16.6	285	124	1.81	23.0	—	23.0	23.0	—	23.0	—	360,687	360,687	31.9	0.68	—	361,687
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	26.5	13.3	227	96.4	1.45	18.3	—	18.3	18.3	—	18.3	—	287,608	287,608	25.5	0.54	—	288,406
Apartments High Rise	5.92	2.96	50.6	21.5	0.32	4.09	—	4.09	4.09	—	4.09	—	64,250	64,250	5.69	0.12	—	64,429
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Library	0.08	0.04	0.69	0.58	< 0.005	0.05	—	0.05	0.05	—	0.05	—	823	823	0.07	< 0.005	—	825

15937 - Irvine GPU Conservative Project Alternative (Operations) Detailed Report, 2/21/2024

General Office Building	0.60	0.30	5.50	4.62	0.03	0.42	—	0.42	0.42	—	0.42	—	6,557	6,557	0.58	0.01	—	6,575
High Turnover (Sit Down Restaurant)	0.08	0.04	0.71	0.60	< 0.005	0.05	—	0.05	0.05	—	0.05	—	849	849	0.08	< 0.005	—	851
Recreational Swimming Pool	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Arena	0.03	0.02	0.30	0.25	< 0.005	0.02	—	0.02	0.02	—	0.02	—	359	359	0.03	< 0.005	—	360
Racquet Club	0.02	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	—	241	241	0.02	< 0.005	—	242
Total	33.3	16.6	285	124	1.81	23.0	—	23.0	23.0	—	23.0	—	360,687	360,687	31.9	0.68	—	361,687
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	4.84	2.42	41.4	17.6	0.26	3.34	—	3.34	3.34	—	3.34	—	47,617	47,617	4.21	0.09	—	47,749
Apartments High Rise	1.08	0.54	9.24	3.93	0.06	0.75	—	0.75	0.75	—	0.75	—	10,637	10,637	0.94	0.02	—	10,667
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Library	0.01	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	136	136	0.01	< 0.005	—	137
General Office Building	0.11	0.06	1.00	0.84	0.01	0.08	—	0.08	0.08	—	0.08	—	1,086	1,086	0.10	< 0.005	—	1,089
High Turnover (Sit Down Restaurant)	0.01	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	141	141	0.01	< 0.005	—	141

Recreational Swimming Pool	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Arena	0.01	< 0.005	0.05	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	59.4	59.4	0.01	< 0.005	—	59.6
Racquet Club	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	40.0	40.0	< 0.005	< 0.005	—	40.1
Total	6.07	3.03	51.9	22.7	0.33	4.19	—	4.19	4.19	—	4.19	—	59,716	59,716	5.28	0.11	—	59,881

### 4.3. Area Emissions by Source

#### 4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	108	53.8	919	391	5.87	74.3	—	74.3	74.3	—	74.3	0.00	1,166,391	1,166,391	22.0	2.20	—	1,167,594
Consumer Products	—	1,238	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	100.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	295	280	29.4	3,199	0.14	1.48	—	1.48	1.12	—	1.12	—	8,570	8,570	0.36	0.07	—	8,600
Total	403	1,671	948	3,590	6.00	75.8	—	75.8	75.4	—	75.4	0.00	1,174,960	1,174,960	22.3	2.27	—	1,176,194

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	108	53.8	919	391	5.87	74.3	—	74.3	74.3	—	74.3	0.00	1,166,391	1,166,391	22.0	2.20	—	1,167,594
Consumer Products	—	1,238	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	100.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	108	1,392	919	391	5.87	74.3	—	74.3	74.3	—	74.3	0.00	1,166,391	1,166,391	22.0	2.20	—	1,167,594
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	1.34	0.67	11.5	4.89	0.07	0.93	—	0.93	0.93	—	0.93	0.00	13,227	13,227	0.25	0.02	—	13,240
Consumer Products	—	226	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	18.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	36.9	35.0	3.67	400	0.02	0.18	—	0.18	0.14	—	0.14	—	972	972	0.04	0.01	—	975
Total	38.3	280	15.2	405	0.09	1.11	—	1.11	1.07	—	1.07	0.00	14,198	14,198	0.29	0.03	—	14,216

### 4.4. Water Emissions by Land Use

#### 4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
----------	-----	-----	-----	----	-----	-------	-------	-------	--------	--------	--------	------	-------	------	-----	-----	---	------

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	2,685	6,816	9,501	276	6.65	—	18,388
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	1,298	3,294	4,592	134	3.21	—	8,887
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Library	—	—	—	—	—	—	—	—	—	—	—	3.60	9.13	12.7	0.37	0.01	—	24.6
General Office Building	—	—	—	—	—	—	—	—	—	—	—	275	698	973	28.3	0.68	—	1,882
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	13.4	34.0	47.3	1.38	0.03	—	91.6
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	4.57	11.6	16.2	0.47	0.01	—	31.3
Arena	—	—	—	—	—	—	—	—	—	—	—	21.6	54.8	76.4	2.22	0.05	—	148
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	1.99	5.06	7.06	0.21	< 0.005	—	13.7
Total	—	—	—	—	—	—	—	—	—	—	—	4,303	10,923	15,226	443	10.7	—	29,466
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	2,685	6,816	9,501	276	6.65	—	18,388
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	1,298	3,294	4,592	134	3.21	—	8,887



City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Library	—	—	—	—	—	—	—	—	—	—	—	3.60	9.13	12.7	0.37	0.01	—	24.6
General Office Building	—	—	—	—	—	—	—	—	—	—	—	275	698	973	28.3	0.68	—	1,882
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	13.4	34.0	47.3	1.38	0.03	—	91.6
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	4.57	11.6	16.2	0.47	0.01	—	31.3
Arena	—	—	—	—	—	—	—	—	—	—	—	21.6	54.8	76.4	2.22	0.05	—	148
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	1.99	5.06	7.06	0.21	< 0.005	—	13.7
Total	—	—	—	—	—	—	—	—	—	—	—	4,303	10,923	15,226	443	10.7	—	29,466
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	445	1,128	1,573	45.7	1.10	—	3,044
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	215	545	760	22.1	0.53	—	1,471
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Library	—	—	—	—	—	—	—	—	—	—	—	0.60	1.51	2.11	0.06	< 0.005	—	4.08
General Office Building	—	—	—	—	—	—	—	—	—	—	—	45.5	116	161	4.68	0.11	—	312
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	2.21	5.62	7.84	0.23	0.01	—	15.2

Recreational	—	—	—	—	—	—	—	—	—	—	—	0.76	1.92	2.68	0.08	< 0.005	—	5.19
Arena	—	—	—	—	—	—	—	—	—	—	—	3.57	9.07	12.6	0.37	0.01	—	24.5
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	0.33	0.84	1.17	0.03	< 0.005	—	2.26
Total	—	—	—	—	—	—	—	—	—	—	—	712	1,808	2,521	73.3	1.76	—	4,879

### 4.5. Waste Emissions by Land Use

#### 4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	14,883	0.00	14,883	1,488	0.00	—	52,071
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	7,193	0.00	7,193	719	0.00	—	25,167
City Park	—	—	—	—	—	—	—	—	—	—	—	5.14	0.00	5.14	0.51	0.00	—	18.0
Library	—	—	—	—	—	—	—	—	—	—	—	29.8	0.00	29.8	2.98	0.00	—	104
General Office Building	—	—	—	—	—	—	—	—	—	—	—	405	0.00	405	40.4	0.00	—	1,415
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	148	0.00	148	14.7	0.00	—	516

Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	124	0.00	124	12.4	0.00	—	434
Arena	—	—	—	—	—	—	—	—	—	—	—	0.39	0.00	0.39	0.04	0.00	—	1.36
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	54.1	0.00	54.1	5.40	0.00	—	189
Total	—	—	—	—	—	—	—	—	—	—	—	22,842	0.00	22,842	2,283	0.00	—	79,916
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	14,883	0.00	14,883	1,488	0.00	—	52,071
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	7,193	0.00	7,193	719	0.00	—	25,167
City Park	—	—	—	—	—	—	—	—	—	—	—	5.14	0.00	5.14	0.51	0.00	—	18.0
Library	—	—	—	—	—	—	—	—	—	—	—	29.8	0.00	29.8	2.98	0.00	—	104
General Office Building	—	—	—	—	—	—	—	—	—	—	—	405	0.00	405	40.4	0.00	—	1,415
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	148	0.00	148	14.7	0.00	—	516
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	124	0.00	124	12.4	0.00	—	434
Arena	—	—	—	—	—	—	—	—	—	—	—	0.39	0.00	0.39	0.04	0.00	—	1.36
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	54.1	0.00	54.1	5.40	0.00	—	189
Total	—	—	—	—	—	—	—	—	—	—	—	22,842	0.00	22,842	2,283	0.00	—	79,916

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	2,464	0.00	2,464	246	0.00	—	8,621
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	1,191	0.00	1,191	119	0.00	—	4,167
City Park	—	—	—	—	—	—	—	—	—	—	—	0.85	0.00	0.85	0.09	0.00	—	2.98
Library	—	—	—	—	—	—	—	—	—	—	—	4.93	0.00	4.93	0.49	0.00	—	17.2
General Office Building	—	—	—	—	—	—	—	—	—	—	—	67.0	0.00	67.0	6.69	0.00	—	234
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	24.4	0.00	24.4	2.44	0.00	—	85.4
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	20.5	0.00	20.5	2.05	0.00	—	71.8
Arena	—	—	—	—	—	—	—	—	—	—	—	0.06	0.00	0.06	0.01	0.00	—	0.22
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	8.95	0.00	8.95	0.89	0.00	—	31.3
Total	—	—	—	—	—	—	—	—	—	—	—	3,782	0.00	3,782	378	0.00	—	13,231

### 4.6. Refrigerant Emissions by Land Use

#### 4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
----------	-----	-----	-----	----	-----	-------	-------	-------	--------	--------	--------	------	-------	------	-----	-----	---	------

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	284	284
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	124	124
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Library	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.23	0.23
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.96	1.96
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	36.0	36.0
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.19	0.19
Arena	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.16	0.16
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	446	446
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	284	284
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	124	124

City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Library	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.23	0.23
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.96	1.96
High Turnover (Sit Down Restaurart)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	36.0	36.0
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.19	0.19
Arena	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.16	0.16
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	446	446
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	46.9	46.9
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	20.5	20.5
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Library	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.33	0.33
High Turnover (Sit Down Restaurart)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.95	5.95

Recreational	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.03	0.03
Arena	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.03	0.03
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	73.9	73.9

### 4.7. Offroad Emissions By Equipment Type

#### 4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

### 4.8. Stationary Emissions By Equipment Type

#### 4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

#### 4.9. User Defined Emissions By Equipment Type

##### 4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—



### 4.10. Soil Carbon Accumulation By Vegetation Type

#### 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

#### 4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

## 5. Activity Data

### 5.9. Operational Mobile Sources

#### 5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Total all Land Uses	0.00	0.00	0.00	0.00	900,330	744,928	744,928	312,414,241

### 5.10. Operational Area Sources

#### 5.10.1. Hearths

##### 5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Condo/Townhouse	—
Wood Fireplaces	0
Gas Fireplaces	37345
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Apartments High Rise	—

Wood Fireplaces	0
Gas Fireplaces	18050
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0

### 5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
115250242.5	38,416,748	1,400,895	466,965	—

### 5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

## 5.11. Operational Energy Consumption

### 5.11.1. Unmitigated

#### Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Condo/Townhouse	171,494,383	261	0.0330	0.0040	897,413,737
Apartments High Rise	66,168,306	261	0.0330	0.0040	200,478,514
City Park	0.00	261	0.0330	0.0040	0.00
City Park	0.00	261	0.0330	0.0040	0.00
Library	575,564	261	0.0330	0.0040	2,568,116
General Office Building	127,950	261	0.0330	0.0040	181,988

General Office Building	14,256,229	261	0.0330	0.0040	20,277,174
City Park	0.00	261	0.0330	0.0040	0.00
High Turnover (Sit Down Restaurant)	796,497	261	0.0330	0.0040	2,648,027
Recreational Swimming Pool	0.00	261	0.0330	0.0040	0.00
Arena	250,850	261	0.0330	0.0040	1,119,271
City Park	0.00	261	0.0330	0.0040	0.00
Racquet Club	168,832	261	0.0330	0.0040	753,314

## 5.12. Operational Water and Wastewater Consumption

### 5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Condo/Townhouse	1,401,395,399	0.00
Apartments High Rise	677,337,983	0.00
City Park	0.00	0.00
City Park	0.00	0.00
Library	1,877,335	0.00
General Office Building	1,276,128	0.00
General Office Building	142,186,998	0.00
City Park	0.00	0.00
High Turnover (Sit Down Restaurant)	6,981,275	0.00
Recreational Swimming Pool	2,387,313	0.00
Arena	11,264,639	0.00
City Park	0.00	0.00
Racquet Club	1,040,919	0.00

### 5.13. Operational Waste Generation

#### 5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Condo/Townhouse	27,615	—
Apartments High Rise	13,347	—
City Park	1.72	—
City Park	1.72	—
Library	55.3	—
General Office Building	6.68	—
General Office Building	744	—
City Park	5.59	—
High Turnover (Sit Down Restaurant)	274	—
Recreational Swimming Pool	230	—
Arena	0.72	—
City Park	0.52	—
Racquet Club	100	—

### 5.14. Operational Refrigeration and Air Conditioning Equipment

#### 5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Condo/Townhouse	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

Apartments High Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments High Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Library	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
Library	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Library	Stand-alone retail refrigerators and freezers	R-134a	1,430	< 0.005	1.00	0.00	1.00
Library	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
General Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
General Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
General Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
General Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
High Turnover (Sit Down Restaurant)	Household refrigerators and/or freezers	R-134a	1,430	0.00	0.60	0.00	1.00
High Turnover (Sit Down Restaurant)	Other commercial A/C and heat pumps	R-410A	2,088	1.80	4.00	4.00	18.0
High Turnover (Sit Down Restaurant)	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
Recreational Swimming Pool	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Recreational Swimming Pool	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Arena	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Arena	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Arena	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Racquet Club	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Racquet Club	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00

## 5.15. Operational Off-Road Equipment



### 5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
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## 5.16. Stationary Sources

### 5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
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### 5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)
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## 5.17. User Defined

Equipment Type	Fuel Type
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## 5.18. Vegetation

### 5.18.1. Land Use Change

#### 5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
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### 5.18.1. Biomass Cover Type

#### 5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
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5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
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## 6. Climate Risk Detailed Report

### 6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	9.03	annual days of extreme heat
Extreme Precipitation	3.50	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	1.31	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

### 6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A

Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

### 6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

### 6.4. Climate Risk Reduction Measures

## 7. Health and Equity Details

### 7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	58.2
AQ-PM	68.7
AQ-DPM	84.2
Drinking Water	53.2
Lead Risk Housing	28.7
Pesticides	11.8
Toxic Releases	91.4
Traffic	88.9
Effect Indicators	—
CleanUp Sites	97.3
Groundwater	99.0
Haz Waste Facilities/Generators	98.4
Impaired Water Bodies	83.0
Solid Waste	97.7
Sensitive Population	—
Asthma	17.0
Cardio-vascular	20.8
Low Birth Weights	54.8
Socioeconomic Factor Indicators	—
Education	49.2
Housing	39.2

Linguistic	59.4
Poverty	55.5
Unemployment	5.57

## 7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	47.45284229
Employed	76.27357885
Median HI	69.01065058
Education	—
Bachelor's or higher	70.42217375
High school enrollment	100
Preschool enrollment	16.21968433
Transportation	—
Auto Access	57.21801617
Active commuting	69.0619787
Social	—
2-parent households	42.17887848
Voting	31.99024766
Neighborhood	—
Alcohol availability	44.80944437
Park access	28.53843193
Retail density	94.63621199
Supermarket access	58.28307455
Tree canopy	29.41100988

Housing	—
Homeownership	19.54317978
Housing habitability	30.20659566
Low-inc homeowner severe housing cost burden	97.88271526
Low-inc renter severe housing cost burden	75.33684075
Uncrowded housing	22.40472219
Health Outcomes	—
Insured adults	50.3143847
Arthritis	98.6
Asthma ER Admissions	82.6
High Blood Pressure	98.8
Cancer (excluding skin)	96.0
Asthma	65.7
Coronary Heart Disease	98.7
Chronic Obstructive Pulmonary Disease	94.6
Diagnosed Diabetes	98.6
Life Expectancy at Birth	99.4
Cognitively Disabled	52.2
Physically Disabled	81.6
Heart Attack ER Admissions	76.4
Mental Health Not Good	58.7
Chronic Kidney Disease	99.0
Obesity	94.5
Pedestrian Injuries	72.5
Physical Health Not Good	93.2
Stroke	98.4
Health Risk Behaviors	—

Binge Drinking	4.3
Current Smoker	42.3
No Leisure Time for Physical Activity	69.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	25.4
Elderly	82.5
English Speaking	49.5
Foreign-born	80.9
Outdoor Workers	61.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	18.1
Traffic Density	92.8
Traffic Access	65.3
Other Indices	—
Hardship	52.6
Other Decision Support	—
2016 Voting	59.2

### 7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	64.0
Healthy Places Index Score for Project Location (b)	56.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

- a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
- b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

## 7.4. Health & Equity Measures

No Health & Equity Measures selected.

## 7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

## 7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

# 8. User Changes to Default Data

Screen	Justification
Operations: Hearths	SCAQMD Rule 445 no wood burning devices. Wood burning devices added to gas devices.



ATTACHMENT D  
CALEEMOD CUMULATIVE PLUS CONSERVATIVE/PROPOSED  
PROJECT SCENARIO EMISSIONS MODEL OUTPUTS

# 15937 - Irvine GPU Cumulative Plus Conservative Project Alternative (Operations) Detailed Report

## Table of Contents

- 1. Basic Project Information
  - 1.1. Basic Project Information
  - 1.2. Land Use Types
  - 1.3. User-Selected Emission Reduction Measures by Emissions Sector
- 2. Emissions Summary
  - 2.4. Operations Emissions Compared Against Thresholds
  - 2.5. Operations Emissions by Sector, Unmitigated
- 4. Operations Emissions Details
  - 4.1. Mobile Emissions by Land Use
    - 4.1.1. Unmitigated
  - 4.2. Energy
    - 4.2.1. Electricity Emissions By Land Use - Unmitigated
    - 4.2.3. Natural Gas Emissions By Land Use - Unmitigated

#### 4.3. Area Emissions by Source

##### 4.3.1. Unmitigated

#### 4.4. Water Emissions by Land Use

##### 4.4.1. Unmitigated

#### 4.5. Waste Emissions by Land Use

##### 4.5.1. Unmitigated

#### 4.6. Refrigerant Emissions by Land Use

##### 4.6.1. Unmitigated

#### 4.7. Offroad Emissions By Equipment Type

##### 4.7.1. Unmitigated

#### 4.8. Stationary Emissions By Equipment Type

##### 4.8.1. Unmitigated

#### 4.9. User Defined Emissions By Equipment Type

##### 4.9.1. Unmitigated

#### 4.10. Soil Carbon Accumulation By Vegetation Type

##### 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

##### 4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

## 5.15. Operational Off-Road Equipment

### 5.15.1. Unmitigated

## 5.16. Stationary Sources

### 5.16.1. Emergency Generators and Fire Pumps

### 5.16.2. Process Boilers

## 5.17. User Defined

## 5.18. Vegetation

### 5.18.1. Land Use Change

#### 5.18.1.1. Unmitigated

### 5.18.1. Biomass Cover Type

#### 5.18.1.1. Unmitigated

### 5.18.2. Sequestration

#### 5.18.2.1. Unmitigated

## 6. Climate Risk Detailed Report

### 6.1. Climate Risk Summary

### 6.2. Initial Climate Risk Scores

### 6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

# 1. Basic Project Information

## 1.1. Basic Project Information

Data Field	Value
Project Name	15937 - Irvine GPU Cumulative Plus Conservative Project Alternative (Operations)
Operational Year	2045
Lead Agency	—
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	19.6
Location	33.688397, -117.841364
County	Orange
City	Irvine
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	6804
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.21

## 1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Condo/Townhouse	37,345	Dwelling Unit	2,334	39,585,700	0.00	—	111,288	—

Apartments High Rise	18,050	Dwelling Unit	291	17,328,000	0.00	—	53,789	Multi-Family Housing
City Park	20.0	Acre	20.0	0.00	0.00	0.00	—	Botanical Garden
City Park	20.0	Acre	20.0	0.00	0.00	0.00	—	Veterans Memorial Garden
Library	60.0	1000sqft	1.38	60,000	0.00	—	—	—
General Office Building	7.18	1000sqft	0.16	7,180	0.00	—	—	Discovery Center
General Office Building	800	1000sqft	18.4	800,000	0.00	—	—	New Museum
City Park	65.0	Acre	65.0	0.00	0.00	0.00	—	—
High Turnover (Sit Down Restaurant)	23.0	1000sqft	0.53	23,000	0.00	—	—	Accessory Restaurant
Recreational Swimming Pool	40.4	1000sqft	0.93	40,365	0.00	—	—	Aquatic Center Pools
Arena	26.1	1000sqft	8.41	26,150	0.00	—	—	Aquatic Stadium
City Park	6.00	Acre	6.00	0.00	0.00	0.00	—	Skate Park
Racquet Club	17.6	1000sqft	0.40	17,600	0.00	—	—	Pickleball Court
Apartments High Rise	3,270	Dwelling Unit	52.7	3,139,200	0.00	—	9,745	Multi-Family Housing
Condo/Townhouse	11,723	Dwelling Unit	733	12,426,380	0.00	—	34,935	—
Health Club	90.0	1000sqft	2.07	90,000	0.00	—	—	—
Office Park	70.0	1000sqft	1.61	70,000	0.00	—	—	Office Mix
Recreational Swimming Pool	13.5	1000sqft	0.31	13,455	0.00	—	—	Aquatics
General Office Building	58.0	1000sqft	1.33	58,000	0.00	—	—	Community Facility
Racquet Club	22.5	1000sqft	0.52	22,464	0.00	—	—	Tennis Courts

### 1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected



## 2. Emissions Summary

### 2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	629	2,205	1,661	6,517	16.3	128	763	891	127	193	321	34,707	2,843,175	2,877,883	3,597	37.2	720	2,979,606
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	252	1,849	1,632	2,217	15.8	126	763	889	126	193	319	34,707	2,806,130	2,840,837	3,596	37.8	563	2,942,569
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	379	2,026	567	4,520	8.77	39.3	716	755	38.9	182	220	34,707	1,409,423	1,444,131	3,570	34.6	625	1,544,306
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	69.2	370	103	825	1.60	7.17	131	138	7.09	33.1	40.2	5,746	233,346	239,092	591	5.73	103	255,678

### 2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	74.4	56.4	88.8	1,796	6.29	2.01	763	765	1.88	193	195	—	640,414	640,414	13.0	16.5	161	645,806

15937 - Irvine GPU Cumulative Plus Conservative Project Alternative (Operations) Detailed Report, 2/22/2024

Area	512	2,127	1,205	4,561	7.63	96.3	—	96.3	95.8	—	95.8	0.00	1,492,96	1,492,96	28.4	2.88	—	1,494,53
Energy	42.9	21.4	367	160	2.34	29.6	—	29.6	29.6	—	29.6	—	695,986	695,986	70.4	4.42	—	699,061
Water	—	—	—	—	—	—	—	—	—	—	—	5,439	13,806	19,245	559	13.5	—	37,245
Waste	—	—	—	—	—	—	—	—	—	—	—	29,268	0.00	29,268	2,925	0.00	—	102,399
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	559	559
Total	629	2,205	1,661	6,517	16.3	128	763	891	127	193	321	34,707	2,843,175	2,877,883	3,597	37.2	720	2,979,606
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	72.9	55.3	97.2	1,560	6.03	2.01	763	765	1.88	193	195	—	614,256	614,256	12.8	17.2	4.18	619,694
Area	137	1,772	1,168	497	7.45	94.4	—	94.4	94.4	—	94.4	0.00	1,482,082	1,482,082	27.9	2.79	—	1,483,611
Energy	42.9	21.4	367	160	2.34	29.6	—	29.6	29.6	—	29.6	—	695,986	695,986	70.4	4.42	—	699,061
Water	—	—	—	—	—	—	—	—	—	—	—	5,439	13,806	19,245	559	13.5	—	37,245
Waste	—	—	—	—	—	—	—	—	—	—	—	29,268	0.00	29,268	2,925	0.00	—	102,399
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	559	559
Total	252	1,849	1,632	2,217	15.8	126	763	889	126	193	319	34,707	2,806,130	2,840,837	3,596	37.8	563	2,942,569
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	69.6	52.8	94.4	1,542	5.80	1.91	716	718	1.79	182	183	—	590,662	590,662	12.2	16.5	66.1	595,942
Area	266	1,951	106	2,818	0.63	7.75	—	7.75	7.44	—	7.44	0.00	108,969	108,969	2.22	0.25	—	109,100
Energy	42.9	21.4	367	160	2.34	29.6	—	29.6	29.6	—	29.6	—	695,986	695,986	70.4	4.42	—	699,061
Water	—	—	—	—	—	—	—	—	—	—	—	5,439	13,806	19,245	559	13.5	—	37,245
Waste	—	—	—	—	—	—	—	—	—	—	—	29,268	0.00	29,268	2,925	0.00	—	102,399
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	559	559
Total	379	2,026	567	4,520	8.77	39.3	716	755	38.9	182	220	34,707	1,409,423	1,444,131	3,570	34.6	625	1,544,306
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mobile	12.7	9.64	17.2	281	1.06	0.35	131	131	0.33	33.1	33.5	—	97,791	97,791	2.02	2.73	10.9	98,665
Area	48.6	356	19.3	514	0.12	1.41	—	1.41	1.36	—	1.36	0.00	18,041	18,041	0.37	0.04	—	18,063
Energy	7.83	3.91	67.0	29.2	0.43	5.41	—	5.41	5.41	—	5.41	—	115,228	115,228	11.7	0.73	—	115,738
Water	—	—	—	—	—	—	—	—	—	—	—	901	2,286	3,186	92.6	2.23	—	6,166
Waste	—	—	—	—	—	—	—	—	—	—	—	4,846	0.00	4,846	484	0.00	—	16,953
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	92.5	92.5
Total	69.2	370	103	825	1.60	7.17	131	138	7.09	33.1	40.2	5,746	233,346	239,092	591	5.73	103	255,678

## 4. Operations Emissions Details

### 4.1. Mobile Emissions by Land Use

#### 4.1.1. Unmitigated

Mobile source emissions results are presented in Sections 2.6. No further detailed breakdown of emissions is available.

### 4.2. Energy

#### 4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	160,994	160,994	20.4	2.47	—	162,240
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	55,841	55,841	7.07	0.86	—	56,273
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

15937 - Irvine GPU Cumulative Plus Conservative Project Alternative (Operations) Detailed Report, 2/22/2024

Library	—	—	—	—	—	—	—	—	—	—	—	—	411	411	0.05	0.01	—	414
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	11,016	11,016	1.39	0.17	—	11,101
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	569	569	0.07	0.01	—	573
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Arena	—	—	—	—	—	—	—	—	—	—	—	—	179	179	0.02	< 0.005	—	181
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	—	275	275	0.03	< 0.005	—	277
Health Club	—	—	—	—	—	—	—	—	—	—	—	—	617	617	0.08	0.01	—	622
Office Park	—	—	—	—	—	—	—	—	—	—	—	—	891	891	0.11	0.01	—	898
Total	—	—	—	—	—	—	—	—	—	—	—	—	230,794	230,794	29.2	3.54	—	232,579
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	160,994	160,994	20.4	2.47	—	162,240
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	55,841	55,841	7.07	0.86	—	56,273
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Library	—	—	—	—	—	—	—	—	—	—	—	—	411	411	0.05	0.01	—	414
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	11,016	11,016	1.39	0.17	—	11,101

High Turnover (Sit Down Restaurart)	—	—	—	—	—	—	—	—	—	—	—	—	569	569	0.07	0.01	—	573
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Arena	—	—	—	—	—	—	—	—	—	—	—	—	179	179	0.02	< 0.005	—	181
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	—	275	275	0.03	< 0.005	—	277
Health Club	—	—	—	—	—	—	—	—	—	—	—	—	617	617	0.08	0.01	—	622
Office Park	—	—	—	—	—	—	—	—	—	—	—	—	891	891	0.11	0.01	—	898
Total	—	—	—	—	—	—	—	—	—	—	—	—	230,794	230,794	29.2	3.54	—	232,579
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	26,654	26,654	3.37	0.41	—	26,861
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	9,245	9,245	1.17	0.14	—	9,317
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Library	—	—	—	—	—	—	—	—	—	—	—	—	68.1	68.1	0.01	< 0.005	—	68.6
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	1,824	1,824	0.23	0.03	—	1,838
High Turnover (Sit Down Restaurart)	—	—	—	—	—	—	—	—	—	—	—	—	94.2	94.2	0.01	< 0.005	—	94.9

Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Arena	—	—	—	—	—	—	—	—	—	—	—	—	29.7	29.7	< 0.005	< 0.005	—	29.9
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	—	45.5	45.5	0.01	< 0.005	—	45.8
Health Club	—	—	—	—	—	—	—	—	—	—	—	—	102	102	0.01	< 0.005	—	103
Office Park	—	—	—	—	—	—	—	—	—	—	—	—	148	148	0.02	< 0.005	—	149
Total	—	—	—	—	—	—	—	—	—	—	—	—	38,211	38,211	4.84	0.59	—	38,506

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	34.8	17.4	298	127	1.90	24.1	—	24.1	24.1	—	24.1	—	377,891	377,891	33.4	0.71	—	378,939
Apartments High Rise	7.00	3.50	59.8	25.4	0.38	4.83	—	4.83	4.83	—	4.83	—	75,890	75,890	6.72	0.14	—	76,101
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Library	0.08	0.04	0.69	0.58	< 0.005	0.05	—	0.05	0.05	—	0.05	—	823	823	0.07	< 0.005	—	825
General Office Building	0.65	0.32	5.89	4.95	0.04	0.45	—	0.45	0.45	—	0.45	—	7,028	7,028	0.62	0.01	—	7,047

15937 - Irvine GPU Cumulative Plus Conservative Project Alternative (Operations) Detailed Report, 2/22/2024

High Turnover (Sit Down Restaurant)	0.08	0.04	0.71	0.60	< 0.005	0.05	—	0.05	0.05	—	0.05	—	849	849	0.08	< 0.005	—	851
Recreational Swimming Pool	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Arena	0.03	0.02	0.30	0.25	< 0.005	0.02	—	0.02	0.02	—	0.02	—	359	359	0.03	< 0.005	—	360
Racquet Club	0.05	0.03	0.46	0.39	< 0.005	0.04	—	0.04	0.04	—	0.04	—	550	550	0.05	< 0.005	—	551
Health Club	0.11	0.06	1.03	0.87	0.01	0.08	—	0.08	0.08	—	0.08	—	1,235	1,235	0.11	< 0.005	—	1,238
Office Park	0.05	0.03	0.48	0.40	< 0.005	0.04	—	0.04	0.04	—	0.04	—	569	569	0.05	< 0.005	—	570
Total	42.9	21.4	367	160	2.34	29.6	—	29.6	29.6	—	29.6	—	465,193	465,193	41.2	0.88	—	466,483
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	34.8	17.4	298	127	1.90	24.1	—	24.1	24.1	—	24.1	—	377,891	377,891	33.4	0.71	—	378,939
Apartments High Rise	7.00	3.50	59.8	25.4	0.38	4.83	—	4.83	4.83	—	4.83	—	75,890	75,890	6.72	0.14	—	76,101
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Library	0.08	0.04	0.69	0.58	< 0.005	0.05	—	0.05	0.05	—	0.05	—	823	823	0.07	< 0.005	—	825
General Office Building	0.65	0.32	5.89	4.95	0.04	0.45	—	0.45	0.45	—	0.45	—	7,028	7,028	0.62	0.01	—	7,047
High Turnover (Sit Down Restaurant)	0.08	0.04	0.71	0.60	< 0.005	0.05	—	0.05	0.05	—	0.05	—	849	849	0.08	< 0.005	—	851

15937 - Irvine GPU Cumulative Plus Conservative Project Alternative (Operations) Detailed Report, 2/22/2024

Recreati Swimming Pool	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Arena	0.03	0.02	0.30	0.25	< 0.005	0.02	—	0.02	0.02	—	0.02	—	359	359	0.03	< 0.005	—	360
Racquet Club	0.05	0.03	0.46	0.39	< 0.005	0.04	—	0.04	0.04	—	0.04	—	550	550	0.05	< 0.005	—	551
Health Club	0.11	0.06	1.03	0.87	0.01	0.08	—	0.08	0.08	—	0.08	—	1,235	1,235	0.11	< 0.005	—	1,238
Office Park	0.05	0.03	0.48	0.40	< 0.005	0.04	—	0.04	0.04	—	0.04	—	569	569	0.05	< 0.005	—	570
Total	42.9	21.4	367	160	2.34	29.6	—	29.6	29.6	—	29.6	—	465,193	465,193	41.2	0.88	—	466,483
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/T ownhous e	6.36	3.18	54.3	23.1	0.35	4.39	—	4.39	4.39	—	4.39	—	62,564	62,564	5.54	0.12	—	62,738
Apartme nts High Rise	1.28	0.64	10.9	4.64	0.07	0.88	—	0.88	0.88	—	0.88	—	12,564	12,564	1.11	0.02	—	12,599
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Library	0.01	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	136	136	0.01	< 0.005	—	137
General Office Building	0.12	0.06	1.07	0.90	0.01	0.08	—	0.08	0.08	—	0.08	—	1,164	1,164	0.10	< 0.005	—	1,167
High Turnover (Sit Down Restaurart)	0.01	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	141	141	0.01	< 0.005	—	141
Recreati onal Swimmin g Pool	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Arena	0.01	< 0.005	0.05	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	59.4	59.4	0.01	< 0.005	—	59.6
Racquet Club	0.01	< 0.005	0.08	0.07	< 0.005	0.01	—	0.01	0.01	—	0.01	—	91.0	91.0	0.01	< 0.005	—	91.2



Health Club	0.02	0.01	0.19	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01	—	204	204	0.02	< 0.005	—	205
Office Park	0.01	< 0.005	0.09	0.07	< 0.005	0.01	—	0.01	0.01	—	0.01	—	94.1	94.1	0.01	< 0.005	—	94.4
Total	7.83	3.91	67.0	29.2	0.43	5.41	—	5.41	5.41	—	5.41	—	77,018	77,018	6.82	0.15	—	77,232

### 4.3. Area Emissions by Source

#### 4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	137	68.3	1,168	497	7.45	94.4	—	94.4	94.4	—	94.4	0.00	1,482,082	1,482,082	27.9	2.79	—	1,483,611
Consumer Products	—	1,576	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	127	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	375	355	37.3	4,065	0.18	1.88	—	1.88	1.42	—	1.42	—	10,887	10,887	0.46	0.09	—	10,925
Total	512	2,127	1,205	4,561	7.63	96.3	—	96.3	95.8	—	95.8	0.00	1,492,969	1,492,969	28.4	2.88	—	1,494,536
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	137	68.3	1,168	497	7.45	94.4	—	94.4	94.4	—	94.4	0.00	1,482,082	1,482,082	27.9	2.79	—	1,483,611

Consum Products	—	1,576	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architect ural Coatings	—	127	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	137	1,772	1,168	497	7.45	94.4	—	94.4	94.4	—	94.4	0.00	1,482,082	1,482,082	27.9	2.79	—	1,483,611
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	1.71	0.85	14.6	6.21	0.09	1.18	—	1.18	1.18	—	1.18	0.00	16,807	16,807	0.32	0.03	—	16,824
Consum er Products	—	288	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architect ural Coatings	—	23.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landsca pe Equipme nt	46.9	44.4	4.66	508	0.02	0.23	—	0.23	0.18	—	0.18	—	1,235	1,235	0.05	0.01	—	1,239
Total	48.6	356	19.3	514	0.12	1.41	—	1.41	1.36	—	1.36	0.00	18,041	18,041	0.37	0.04	—	18,063

### 4.4. Water Emissions by Land Use

#### 4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/T ownhous e	—	—	—	—	—	—	—	—	—	—	—	3,528	8,956	12,484	363	8.73	—	24,160

15937 - Irvine GPU Cumulative Plus Conservative Project Alternative (Operations) Detailed Report, 2/22/2024

Apartme High Rise	—	—	—	—	—	—	—	—	—	—	—	1,533	3,891	5,424	158	3.79	—	10,497
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Library	—	—	—	—	—	—	—	—	—	—	—	3.60	9.13	12.7	0.37	0.01	—	24.6
General Office Building	—	—	—	—	—	—	—	—	—	—	—	295	748	1,043	30.3	0.73	—	2,018
High Turnover (Sit Down Restaurart)	—	—	—	—	—	—	—	—	—	—	—	13.4	34.0	47.3	1.38	0.03	—	91.6
Recreati onal Swimmin g Pool	—	—	—	—	—	—	—	—	—	—	—	6.10	15.5	21.6	0.63	0.02	—	41.8
Arena	—	—	—	—	—	—	—	—	—	—	—	21.6	54.8	76.4	2.22	0.05	—	148
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	4.54	11.5	16.1	0.47	0.01	—	31.1
Health Club	—	—	—	—	—	—	—	—	—	—	—	10.2	25.9	36.1	1.05	0.03	—	69.8
Office Park	—	—	—	—	—	—	—	—	—	—	—	23.8	60.5	84.4	2.45	0.06	—	163
Total	—	—	—	—	—	—	—	—	—	—	—	5,439	13,806	19,245	559	13.5	—	37,245
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/T ownhous e	—	—	—	—	—	—	—	—	—	—	—	3,528	8,956	12,484	363	8.73	—	24,160
Apartme nts High Rise	—	—	—	—	—	—	—	—	—	—	—	1,533	3,891	5,424	158	3.79	—	10,497
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

15937 - Irvine GPU Cumulative Plus Conservative Project Alternative (Operations) Detailed Report, 2/22/2024

Library	—	—	—	—	—	—	—	—	—	—	—	3.60	9.13	12.7	0.37	0.01	—	24.6
General Office Building	—	—	—	—	—	—	—	—	—	—	—	295	748	1,043	30.3	0.73	—	2,018
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	13.4	34.0	47.3	1.38	0.03	—	91.6
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	6.10	15.5	21.6	0.63	0.02	—	41.8
Arena	—	—	—	—	—	—	—	—	—	—	—	21.6	54.8	76.4	2.22	0.05	—	148
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	4.54	11.5	16.1	0.47	0.01	—	31.1
Health Club	—	—	—	—	—	—	—	—	—	—	—	10.2	25.9	36.1	1.05	0.03	—	69.8
Office Park	—	—	—	—	—	—	—	—	—	—	—	23.8	60.5	84.4	2.45	0.06	—	163
Total	—	—	—	—	—	—	—	—	—	—	—	5,439	13,806	19,245	559	13.5	—	37,245
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	584	1,483	2,067	60.1	1.45	—	4,000
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	254	644	898	26.1	0.63	—	1,738
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Library	—	—	—	—	—	—	—	—	—	—	—	0.60	1.51	2.11	0.06	< 0.005	—	4.08
General Office Building	—	—	—	—	—	—	—	—	—	—	—	48.8	124	173	5.02	0.12	—	334

High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	2.21	5.62	7.84	0.23	0.01	—	15.2
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	1.01	2.56	3.57	0.10	< 0.005	—	6.91
Arena	—	—	—	—	—	—	—	—	—	—	—	3.57	9.07	12.6	0.37	0.01	—	24.5
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	0.75	1.91	2.66	0.08	< 0.005	—	5.15
Health Club	—	—	—	—	—	—	—	—	—	—	—	1.69	4.29	5.97	0.17	< 0.005	—	11.6
Office Park	—	—	—	—	—	—	—	—	—	—	—	3.95	10.0	14.0	0.41	0.01	—	27.0
Total	—	—	—	—	—	—	—	—	—	—	—	901	2,286	3,186	92.6	2.23	—	6,166

### 4.5. Waste Emissions by Land Use

#### 4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	19,555	0.00	19,555	1,954	0.00	—	68,416
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	8,497	0.00	8,497	849	0.00	—	29,727
City Park	—	—	—	—	—	—	—	—	—	—	—	5.14	0.00	5.14	0.51	0.00	—	18.0

15937 - Irvine GPU Cumulative Plus Conservative Project Alternative (Operations) Detailed Report, 2/22/2024

Library	—	—	—	—	—	—	—	—	—	—	—	29.8	0.00	29.8	2.98	0.00	—	104
General Office Building	—	—	—	—	—	—	—	—	—	—	—	434	0.00	434	43.3	0.00	—	1,517
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	148	0.00	148	14.7	0.00	—	516
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	165	0.00	165	16.5	0.00	—	578
Arena	—	—	—	—	—	—	—	—	—	—	—	0.39	0.00	0.39	0.04	0.00	—	1.36
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	123	0.00	123	12.3	0.00	—	431
Health Club	—	—	—	—	—	—	—	—	—	—	—	276	0.00	276	27.6	0.00	—	967
Office Park	—	—	—	—	—	—	—	—	—	—	—	35.1	0.00	35.1	3.51	0.00	—	123
Total	—	—	—	—	—	—	—	—	—	—	—	29,268	0.00	29,268	2,925	0.00	—	102,399
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	19,555	0.00	19,555	1,954	0.00	—	68,416
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	8,497	0.00	8,497	849	0.00	—	29,727
City Park	—	—	—	—	—	—	—	—	—	—	—	5.14	0.00	5.14	0.51	0.00	—	18.0
Library	—	—	—	—	—	—	—	—	—	—	—	29.8	0.00	29.8	2.98	0.00	—	104
General Office Building	—	—	—	—	—	—	—	—	—	—	—	434	0.00	434	43.3	0.00	—	1,517

High Turnover (Sit Down Restaurart)	—	—	—	—	—	—	—	—	—	—	—	148	0.00	148	14.7	0.00	—	516
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	165	0.00	165	16.5	0.00	—	578
Arena	—	—	—	—	—	—	—	—	—	—	—	0.39	0.00	0.39	0.04	0.00	—	1.36
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	123	0.00	123	12.3	0.00	—	431
Health Club	—	—	—	—	—	—	—	—	—	—	—	276	0.00	276	27.6	0.00	—	967
Office Park	—	—	—	—	—	—	—	—	—	—	—	35.1	0.00	35.1	3.51	0.00	—	123
Total	—	—	—	—	—	—	—	—	—	—	—	29,268	0.00	29,268	2,925	0.00	—	102,399
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	3,238	0.00	3,238	324	0.00	—	11,327
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	1,407	0.00	1,407	141	0.00	—	4,922
City Park	—	—	—	—	—	—	—	—	—	—	—	0.85	0.00	0.85	0.09	0.00	—	2.98
Library	—	—	—	—	—	—	—	—	—	—	—	4.93	0.00	4.93	0.49	0.00	—	17.2
General Office Building	—	—	—	—	—	—	—	—	—	—	—	71.8	0.00	71.8	7.18	0.00	—	251
High Turnover (Sit Down Restaurart)	—	—	—	—	—	—	—	—	—	—	—	24.4	0.00	24.4	2.44	0.00	—	85.4

Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	27.4	0.00	27.4	2.74	0.00	—	95.8
Arena	—	—	—	—	—	—	—	—	—	—	—	0.06	0.00	0.06	0.01	0.00	—	0.22
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	20.4	0.00	20.4	2.04	0.00	—	71.3
Health Club	—	—	—	—	—	—	—	—	—	—	—	45.8	0.00	45.8	4.57	0.00	—	160
Office Park	—	—	—	—	—	—	—	—	—	—	—	5.81	0.00	5.81	0.58	0.00	—	20.3
Total	—	—	—	—	—	—	—	—	—	—	—	4,846	0.00	4,846	484	0.00	—	16,953

### 4.6. Refrigerant Emissions by Land Use

#### 4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	373	373
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	147	147
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Library	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.23	0.23
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.10	2.10



High Turnover (Sit Down Restaurart)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	36.0	36.0
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.26	0.26
Arena	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.16	0.16
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.19	0.19
Health Club	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.43	0.43
Office Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.17	0.17
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	559	559
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	373	373
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	147	147
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Library	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.23	0.23
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.10	2.10
High Turnover (Sit Down Restaurart)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	36.0	36.0

Recreati Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.26	0.26
Arena	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.16	0.16
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.19	0.19
Health Club	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.43	0.43
Office Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.17	0.17
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	559	559
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Condo/T ownhous e	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	61.7	61.7
Apartme nts High Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	24.3	24.3
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Library	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.35	0.35
High Turnover (Sit Down Restaurart)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.95	5.95
Recreati onal Swimmin g Pool	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04
Arena	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.03	0.03
Racquet Club	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.03	0.03

Health Club	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.07	0.07
Office Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.03	0.03
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	92.5	92.5

## 4.7. Offroad Emissions By Equipment Type

### 4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

## 4.8. Stationary Emissions By Equipment Type

### 4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
----------------	-----	-----	-----	----	-----	-------	-------	-------	--------	--------	--------	------	-------	------	-----	-----	---	------

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

### 4.9. User Defined Emissions By Equipment Type

#### 4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

### 4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

## 5. Activity Data

### 5.9. Operational Mobile Sources

#### 5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Total all Land Uses	0.00	0.00	0.00	0.00	1,079,438	893,121	893,121	374,564,669

### 5.10. Operational Area Sources

#### 5.10.1. Hearths

##### 5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Condo/Townhouse	—
Wood Fireplaces	0
Gas Fireplaces	37345
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Wood Fireplaces	0

Gas Fireplaces	11723
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Apartments High Rise	—
Wood Fireplaces	0
Gas Fireplaces	18050
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Wood Fireplaces	0
Gas Fireplaces	3270
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0

### 5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
146770542	48,923,514	1,761,591	587,197	—

### 5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

### 5.11. Operational Energy Consumption



5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Condo/Townhouse	171,494,383	261	0.0330	0.0040	897,413,737
Apartments High Rise	66,168,306	261	0.0330	0.0040	200,478,514
City Park	0.00	261	0.0330	0.0040	0.00
City Park	0.00	261	0.0330	0.0040	0.00
Library	575,564	261	0.0330	0.0040	2,568,116
General Office Building	127,950	261	0.0330	0.0040	181,988
General Office Building	14,256,229	261	0.0330	0.0040	20,277,174
City Park	0.00	261	0.0330	0.0040	0.00
High Turnover (Sit Down Restaurant)	796,497	261	0.0330	0.0040	2,648,027
Recreational Swimming Pool	0.00	261	0.0330	0.0040	0.00
Arena	250,850	261	0.0330	0.0040	1,119,271
City Park	0.00	261	0.0330	0.0040	0.00
Racquet Club	168,832	261	0.0330	0.0040	753,314
Apartments High Rise	11,987,278	261	0.0330	0.0040	36,319,376
Condo/Townhouse	53,833,944	261	0.0330	0.0040	281,707,892
Health Club	863,346	261	0.0330	0.0040	3,852,175
Office Park	1,247,420	261	0.0330	0.0040	1,774,253
Recreational Swimming Pool	0.00	261	0.0330	0.0040	0.00
General Office Building	1,033,577	261	0.0330	0.0040	1,470,095
Racquet Club	215,491	261	0.0330	0.0040	961,503

5.12. Operational Water and Wastewater Consumption

### 5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Condo/Townhouse	1,401,395,399	0.00
Apartments High Rise	677,337,983	0.00
City Park	0.00	0.00
City Park	0.00	0.00
Library	1,877,335	0.00
General Office Building	1,276,128	0.00
General Office Building	142,186,998	0.00
City Park	0.00	0.00
High Turnover (Sit Down Restaurant)	6,981,275	0.00
Recreational Swimming Pool	2,387,313	0.00
Arena	11,264,639	0.00
City Park	0.00	0.00
Racquet Club	1,040,919	0.00
Apartments High Rise	122,708,876	0.00
Condo/Townhouse	439,913,195	0.00
Health Club	5,322,883	0.00
Office Park	12,441,362	0.00
Recreational Swimming Pool	795,771	0.00
General Office Building	10,308,557	0.00
Racquet Club	1,328,592	0.00

### 5.13. Operational Waste Generation

#### 5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
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Condo/Townhouse	27,615	—
Apartments High Rise	13,347	—
City Park	1.72	—
City Park	1.72	—
Library	55.3	—
General Office Building	6.68	—
General Office Building	744	—
City Park	5.59	—
High Turnover (Sit Down Restaurant)	274	—
Recreational Swimming Pool	230	—
Arena	0.72	—
City Park	0.52	—
Racquet Club	100	—
Apartments High Rise	2,418	—
Condo/Townhouse	8,669	—
Health Club	513	—
Office Park	65.1	—
Recreational Swimming Pool	76.7	—
General Office Building	53.9	—
Racquet Club	128	—

## 5.14. Operational Refrigeration and Air Conditioning Equipment

### 5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0

Condo/Townhouse	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Apartments High Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments High Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Library	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
Library	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Library	Stand-alone retail refrigerators and freezers	R-134a	1,430	< 0.005	1.00	0.00	1.00
Library	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
General Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
General Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
General Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
General Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
High Turnover (Sit Down Restaurant)	Household refrigerators and/or freezers	R-134a	1,430	0.00	0.60	0.00	1.00
High Turnover (Sit Down Restaurant)	Other commercial A/C and heat pumps	R-410A	2,088	1.80	4.00	4.00	18.0
High Turnover (Sit Down Restaurant)	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
Recreational Swimming Pool	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Recreational Swimming Pool	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Arena	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Arena	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Arena	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Racquet Club	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Racquet Club	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00

Apartments High Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments High Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Condo/Townhouse	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Health Club	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Health Club	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Office Park	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
Office Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Recreational Swimming Pool	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Recreational Swimming Pool	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
General Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
General Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Racquet Club	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Racquet Club	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00

### 5.15. Operational Off-Road Equipment

#### 5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
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### 5.16. Stationary Sources

#### 5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
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#### 5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)
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### 5.17. User Defined

Equipment Type	Fuel Type
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### 5.18. Vegetation

#### 5.18.1. Land Use Change

##### 5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
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#### 5.18.1. Biomass Cover Type

##### 5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
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5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
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## 6. Climate Risk Detailed Report

### 6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	9.03	annual days of extreme heat
Extreme Precipitation	3.50	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	1.31	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento–San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

### 6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
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Temperature and Extreme Heat	1	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

### 6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

## 6.4. Climate Risk Reduction Measures

# 7. Health and Equity Details

## 7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	58.2
AQ-PM	68.7
AQ-DPM	84.2
Drinking Water	53.2
Lead Risk Housing	28.7
Pesticides	11.8
Toxic Releases	91.4
Traffic	88.9
Effect Indicators	—
CleanUp Sites	97.3
Groundwater	99.0
Haz Waste Facilities/Generators	98.4
Impaired Water Bodies	83.0
Solid Waste	97.7
Sensitive Population	—
Asthma	17.0
Cardio-vascular	20.8
Low Birth Weights	54.8
Socioeconomic Factor Indicators	—

Education	49.2
Housing	39.2
Linguistic	59.4
Poverty	55.5
Unemployment	5.57

## 7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	47.45284229
Employed	76.27357885
Median HI	69.01065058
Education	—
Bachelor's or higher	70.42217375
High school enrollment	100
Preschool enrollment	16.21968433
Transportation	—
Auto Access	57.21801617
Active commuting	69.0619787
Social	—
2-parent households	42.17887848
Voting	31.99024766
Neighborhood	—
Alcohol availability	44.80944437
Park access	28.53843193
Retail density	94.63621199

Supermarket access	58.28307455
Tree canopy	29.41100988
Housing	—
Homeownership	19.54317978
Housing habitability	30.20659566
Low-inc homeowner severe housing cost burden	97.88271526
Low-inc renter severe housing cost burden	75.33684075
Uncrowded housing	22.40472219
Health Outcomes	—
Insured adults	50.3143847
Arthritis	98.6
Asthma ER Admissions	82.6
High Blood Pressure	98.8
Cancer (excluding skin)	96.0
Asthma	65.7
Coronary Heart Disease	98.7
Chronic Obstructive Pulmonary Disease	94.6
Diagnosed Diabetes	98.6
Life Expectancy at Birth	99.4
Cognitively Disabled	52.2
Physically Disabled	81.6
Heart Attack ER Admissions	76.4
Mental Health Not Good	58.7
Chronic Kidney Disease	99.0
Obesity	94.5
Pedestrian Injuries	72.5
Physical Health Not Good	93.2

Stroke	98.4
Health Risk Behaviors	—
Binge Drinking	4.3
Current Smoker	42.3
No Leisure Time for Physical Activity	69.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	25.4
Elderly	82.5
English Speaking	49.5
Foreign-born	80.9
Outdoor Workers	61.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	18.1
Traffic Density	92.8
Traffic Access	65.3
Other Indices	—
Hardship	52.6
Other Decision Support	—
2016 Voting	59.2

### 7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	64.0
Healthy Places Index Score for Project Location (b)	56.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No

Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.  
 b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

### 7.4. Health & Equity Measures

No Health & Equity Measures selected.

### 7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

### 7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

## 8. User Changes to Default Data

Screen	Justification
Operations: Hearths	SCAQMD Rule 445 no wood burning devices. Wood burning devices added to gas devices.

## APPENDIX C

# Biological Technical Report City of Irvine General Plan Update

**Biological Technical Report  
City of Irvine  
General Plan Update**

August 2019

Prepared For:

**Placeworks**

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**City of Irvine General Plan Update  
Biological Technical Report**

**TABLE OF CONTENTS**

<b><u>Section</u></b>	<b><u>Title</u></b>	<b><u>Page</u></b>
1.0	INTRODUCTION .....	1
2.0	METHODS .....	1
3.0	EXISTING BIOLOGICAL RESOURCES SETTING .....	1
3.1	Regulatory Context .....	1
3.1.1	Federal Regulations .....	1
3.1.2	State Regulations .....	5
3.1.3	Local Regulations .....	9
3.2	Existing Biological Conditions .....	10
3.2.1	Environmental Setting .....	10
3.2.2	Topography and Soils .....	11
3.2.3	Vegetation and Land Cover Types .....	13
3.2.4	Flora .....	16
3.2.5	Fauna.....	17
3.3	Sensitive Biological Resources.....	17
3.3.1	Sensitive Vegetation Communities.....	17
3.3.2	Special Status Plant Species.....	18
3.3.3	Special Status Wildlife Species .....	23
3.3.4	Wildlife Movement Corridors.....	29
3.3.5	Wetland and Riparian Resources .....	30
4.0	EVALUATION OF FUTURE ENVIRONMENTAL OPPORTUNITIES, CONSTRAINTS, AND MITIGATION MEASURES .....	34
4.1	Opportunities.....	34
4.2	Constraints and Compensatory Mitigation Measures .....	34
4.2.1	General Measures for Impact Assessments .....	35
4.2.2	Measures for Impacts to Jurisdictional Areas .....	37
5.0	REFERENCES .....	38

**TABLE OF CONTENTS (cont.)**

**LIST OF FIGURES**

<b><u>Number</u></b>	<b><u>Title</u></b>	<b><u>Follows Page</u></b>
1	Regional Location.....	2
2	Vicinity Map .....	2
3	Vegetation and Land Cover Types .....	14
4	Special Status Plant and Wildlife Species and Critical Habitat.....	22
5	Biological Resources and NCCP Areas.....	30
6	Hydrology and Water Features .....	34

**LIST OF TABLES**

<b><u>Number</u></b>	<b><u>Title</u></b>	<b><u>Page</u></b>
1	Soil Types within the City .....	12
2	Special Status Plant Species Reported within the City of Irvine or the Region .....	20
3	Special Status Wildlife Species Reported within the City of Irvine or the Region ..	24

## 1.0 INTRODUCTION

This Biological Technical Report describes the existing biological conditions within the City of Irvine (City; Figures 1 and 2). The information contained in this report will be used to inform the General Plan Update and Environmental Impact Report (EIR) for the City. Detailed information provided in this report includes regulatory context, existing biological conditions, sensitive biological resources, future opportunities to protect the natural environment, and constraints to development.

## 2.0 METHODS

Research for this report included a review of current federal, State, and local regulations; aerial imagery; U.S. Geological Survey (USGS) topographic maps; U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil survey maps; climate information for the City; and reputable online resources that provide data for the region. In addition, existing biological resource documents for the Natural Community Conservation Plan/Habitat Conservation Plan for the Central and Coastal Subregion of Orange County, California (NCCP/HCP) were also reviewed for pertinent information. Queries were also made of the California Natural Diversity Database (CNDDB) and U.S. Fish and Wildlife Service (USFWS) Listed Species Database to identify known sensitive biological resources in the vicinity of the City.

## 3.0 EXISTING BIOLOGICAL RESOURCES SETTING

This section describes the regulatory context, existing biological conditions, and sensitive biological resources found within the City.

### 3.1 REGULATORY CONTEXT

To establish the regulatory context for the City General Plan Update, a variety of federal, State, and local regulations were evaluated to determine if they may be applicable to future proposed projects within the City. In addition, regional land use and management, including established parks, reserves, and linkages were evaluated to provide the regional regulatory framework for the City General Plan Update.

#### 3.1.1 Federal Regulations

Several federal regulations may apply to future projects that are proposed within the City. These include, but are not limited to:

- National Environmental Policy Act
- Federal Endangered Species Act of 1973 (16 United States Code [USC] 1531 *et seq.*)
- Clean Water Act of 1972 (33 USC 1251 *et seq.*)
- Migratory Bird Treaty Act of 1918 (16 USC 703 through 711)
- Bald and Golden Eagle Protection Act (16 USC 668)
- Fish and Wildlife Coordination Act (16 USC 661 *et seq.*)
- Floodplain Management and Protection of Wetlands (42 FR 26961, 52 FR 34617)
- Invasive Species (64 FR 6138)

These federal regulations are described in detail below.

### **National Environmental Policy Act**

The National Environmental Policy Act (NEPA) was passed in 1969 and established a broad national framework for protecting the environment by assuring that all branches of government give proper consideration to the environment prior to undertaking any major federal action that has the potential to significantly affect the environment. NEPA applies to projects undertaken, funded, or requiring the issuance of a permit by a federal agency, including projects associated with airports, buildings, military complexes, highways, parkland purchases, and other federal activities are proposed.

NEPA is administered by the President's Council on Environmental Quality (CEQ), which is supported by a staff of environmental professionals. CEQ's main responsibilities in the NEPA process are to gather information on the conditions and trends in environmental quality, to evaluate federal programs in light of the goals established by NEPA, to develop and promote national policies to improve environmental quality, and to conduct studies, surveys, research, and analyses relating to ecosystems and environmental quality. In addition, federal agencies may involve the California Environmental Quality Act (CEQA) in the NEPA process when there are disagreements concerning the environmental effects of a proposed action.

The federal agency responsible for complying with NEPA is the agency that is proposing to implement the federal action; however, several federal agencies may be involved with the NEPA process based on an agency's expertise and relationship to the proposed action. A federal agency may be a Lead Agency or a Cooperating Agency in the NEPA process.

A Lead Agency is designated when more than one federal agency is involved in a proposed action. The Lead Agency is responsible for supervising the environmental analysis and the preparation of the appropriate environmental document, such as a Categorical Exclusion (CE), Finding of No Significant Impact (FONSI), Environmental Assessment (EA), or Environmental Impact Statement (EIS).

A Cooperating Agency is a federal, State, local, or tribal agency that has jurisdiction over a proposed action or that has special expertise with an environmental issue associated with the proposed action. The Cooperating Agency assists the Lead Agency by participating in the entire NEPA process, including the scoping, environmental analysis, and document preparation.

Any federal lead agency may be a Lead Agency or a Cooperating Agency, depending upon the specifics of the proposed action. However, the Environmental Protection Agency (EPA) has a unique role in the NEPA review process because it is required to review and publicly comment on the environmental impacts of major proposed federal actions, specifically those for which an EIS is required. If the EPA determines that the environmental analysis is unsatisfactory or that the proposed action would have adverse environmental effects, it is required to involve CEQ in the NEPA process.

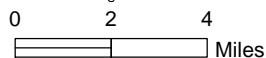


Source: National Geographic; Esri

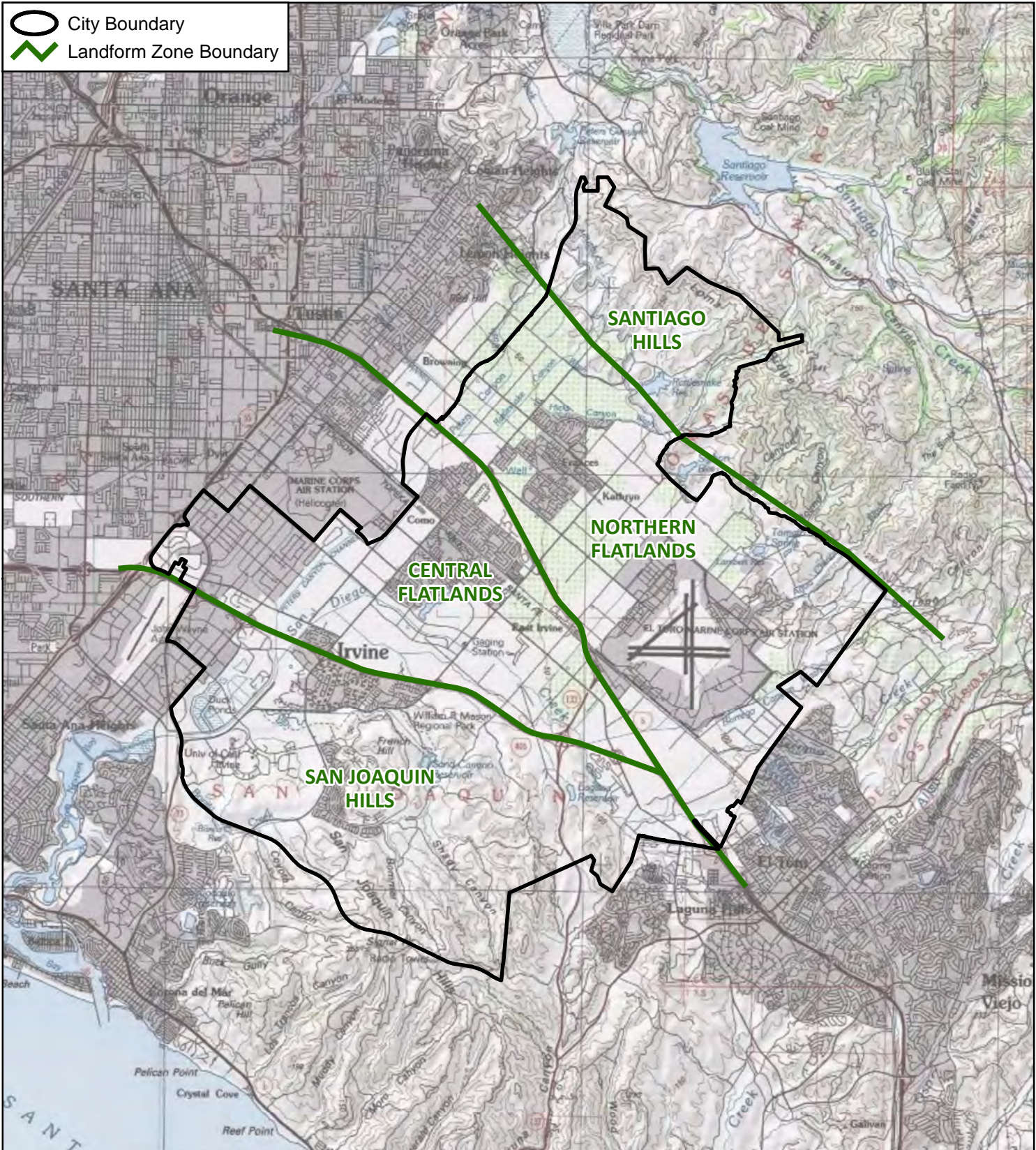
**Figure 1**

**Regional Location**

BIOLOGICAL TECHNICAL REPORT  
CITY OF IRVINE  
GENERAL PLAN UPDATE



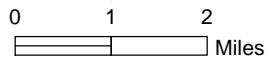
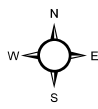




**Figure 2**

**Location Map**

BIOLOGICAL TECHNICAL REPORT  
 CITY OF IRVINE  
 GENERAL PLAN UPDATE







### **Federal Endangered Species Act of 1973 (16 United States Code [USC] 1531 *et seq.*)**

The Federal Endangered Species Act of 1973 (FESA) was designed to protect critically imperiled plant and wildlife species from extinction by eliminating or reducing the threats to these species and by aiding in the recovery and/or maintenance of the species populations. FESA designates species that are endangered or threatened, as well as species that are candidates for listing and protects these species from unauthorized “take”, which is defined as to "harass, harm, pursue, hunt, shoot, wound, kill trap, capture, or collect, or to attempt to engage in any such conduct." FESA also designates critical habitat for federally listed species and protects these species from interference with vital breeding and behavioral activities and from critical habitat degradation.

FESA is administered by the USFWS for freshwater fish and terrestrial wildlife and the National Oceanic and Atmospheric Administration (NOAA) for marine and anadromous species. A person, defined as an “individual, corporation, partnership, trust, association, or any other private entity; or any officer, employee, agent, department, or instrumentality of the Federal Government, of any State, municipality, or political subdivision of a State, or of any foreign government; any State, municipality, or political subdivision of a State; or any other entity subject to the jurisdiction of the United States,” is prohibited from taking a listed species until an appropriate permit pursuant to Section 7, 9, and/or 10 of the FESA has been obtained from USFWS and/or NOAA.

### **Clean Water Act of 1972 (33 USC 1251 *et seq.*)**

Sections 404 and 401 of the Clean Water Act of 1972 (CWA) apply to potential impacts to wetlands, Waters of the U.S., and Waters of the State. The EPA administers the CWA; however, some sections of the CWA are administered by other agencies.

Section 404 of the CWA regulates the discharge of dredged or fill material into navigable waters, including both wetlands and other Waters of the U.S. The discharge of dredged or fill material is typically associated with a variety of development projects, agricultural activities, and water resource projects. The U.S. Army Corps of Engineers (Corps) administers Section 404 of the CWA and is responsible for issuing general and individual permits and for making jurisdictional determinations.

Section 401 of the CWA requires a State Water Quality Certification or waiver for any activity requiring a Section 404 permit. The State Water Quality Certification ensures the activity will not violate any established State water quality standards. The State Water Resources Control Board (SWRCB), in conjunction with the nine California Regional Water Quality Control Boards (RWQCBs), administers Section 401 of the CWA and is responsible for issuing permits pursuant to the Section 401 Water Quality Certification Program.

### **Migratory Bird Treaty Act of 1918 (16 USC 703 through 711)**

The Migratory Bird Treaty Act of 1918 (MBTA) implements various conventions and treaties between the United States and Canada, Mexico, Japan, and Russia for the protection of over 800 migratory bird species. Under the MBTA, it is unlawful to "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird...or any part, nest, or egg of any such bird" (16 USC 703).

The MBTA is administered by USFWS. Take permits for MBTA species are rarely issued, except for specific actions to aid recovery of a species; however, USFWS establishes hunting seasons for species for which there is a long tradition of hunting, as long as hunting will not adversely impact their population status or long-term conservation. While the MBTA includes approximately 170 species of game birds, hunting is typically authorized for fewer than 60 of these species each year.

### **Bald and Golden Eagle Protection Act (16 USC 668)**

The Bald and Golden Eagle Protection Act (BGEPA) provides protection for both the bald eagle (*Haliaeetus leucocephalus*) and the golden eagle (*Aquila chrysaetos*) by prohibiting the "take" of either of these species, including their parts, nests, or eggs. The MBTA defines "take" as to "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb" any bald or golden eagle. The BGEPA is administered by the USFWS, and limited take authorizations are granted for qualifying activities. Persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle [or any golden eagle], alive or dead, or any part, nest, or egg thereof" without prior approval are subject to criminal penalties.

### **Fish and Wildlife Coordination Act (16 USC 661 et seq.)**

The Fish and Wildlife Coordination Act of 1934, as amended, requires coordination with USFWS and CDFW so that these agencies may evaluate impacts to fish and wildlife species that have the potential to result from proposed water resource development projects. Specifically, the Act requires that fish and wildlife species as well as habitats that may support them be given equal consideration to other project features. This Act also requires federal agencies that construct, license, or permit water resource development projects to first coordinate with USFWS and CDFW to determine impacts that may occur to fish and wildlife resources and establish appropriate avoidance, minimization, and/or mitigation measures to reduce these potential impacts.

### **Floodplain Management and Protection of Wetlands (42 FR 26961, 52 FR 34617)**

Executive Order 11990, Protection of Wetlands, as amended, requires federal agencies to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance functions and values of these wetlands while carrying out their responsibilities pertaining to water supply, erosion and flood prevention, maintenance of natural systems, among others.

## **Invasive Species (64 FR 6138)**

Executive Order 13112, Invasive Species, as amended, requires federal agencies to coordinate efforts that prevent the introduction of invasive species (both plant and wildlife species not native to the U.S.), manage existing invasive species, and minimize the economic, ecological, and human health impacts that invasive species cause. This order defines invasive species, requires federal agencies to address invasive species concerns, and prohibits new actions that would cause or promote the introduction of invasive species. To comply with this Order, all enhancement, restoration, and creation activities should use native plants and should include measures to prevent the introduction of invasive species.

### **3.1.2 State Regulations**

Several State regulations may apply to future projects that are proposed within the City. These include, but are not limited to the:

- California Environmental Quality Act
- California Endangered Species Act (Fish and Game Code 2050 *et seq.*)
- California Fish and Game Code
- California Porter-Cologne Water Quality Control Act
- California Natural Community Conservation Planning Program

These State regulations are described in detail below.

### **California Environmental Quality Act**

The CEQA was passed in 1970 as the State counterpart to NEPA to institute a statewide policy of environmental protection. CEQA applies to projects undertaken, funded, or requiring the issuance of a permit by a State or local public agency and requires the project proponent to identify significant environmental impacts as well as avoidance, minimization, and/or mitigation measures to reduce these impacts to below a level of significance.

The CDFW has jurisdiction over the conservation, protection, and management of native habitats, plant species, and wildlife species found within California and is responsible for maintaining sustainable populations of these habitats and species. The CDFW provides biological expertise to review and comment on CEQA documents, including the impacts resulting from proposed project activities and the proposed avoidance, minimization, and mitigation measures associated with these impacts. The CDFW may play various roles in the CEQA process; the CDFW is always a Trustee Agency and may also be a Lead Agency or a Responsible Agency.

The CDFW is one of four trustee agencies, which also include the State Lands Commission, the Department of Parks and Recreation, and the University of California. As a Trustee Agency, the CDFW has jurisdiction over certain resources held in trust for the people of California and is typically required to be notified of CEQA documents that are relevant to its jurisdiction, such as documents for projects involving fish and wildlife resources. As a Trustee Agency, the CDFW cannot approve or disapprove a project; however, the lead and responsible agencies must consult

with the CDFW, and the CDFW reviews the CEQA document(s) and provides recommendations regarding the resources under their jurisdiction (Fish and Game Code Section 1802).

When the CDFW proposes to implement its own project, it is designated as the Lead Agency in the CEQA process and serves as the California government agency with principle responsibility for implementing or approving the proposed project. Such projects typically include projects in state wildlife areas and state fish hatcheries as well as habitat or stream restoration projects. Additionally, the CDFW is the Lead Agency when it is the only agency issuing a permit, as is sometimes the case with Streambed Alteration Agreements. As the Lead Agency for such projects, the CDFW is responsible for preparing the CEQA document and determines whether a Negative Declaration or an EIR is required by CEQA (CEQA Statutes, Sections 21080.3 and 21104.2; Guidelines, Sections 15050 and 15367).

The CDFW is also sometimes designated as a Responsible Agency, which is an agency, other than the Lead Agency, that has the legal responsibility for implementing and approving a proposed project. The CDFW is designated as the Responsible Agency when the Lead Agency requires a 1600 Streambed Alteration Agreement or a 2081(b) California Endangered Species Act Incidental Take Permit for a project. As a Responsible Agency, CDFW actively participates in the CEQA process by reviewing the Lead Agency's CEQA document and using that document to make decisions about the proposed project, to prepare and issue its own findings regarding the project (CEQA Guidelines, Sections 15096 and 15381), and to determine whether or not to issue an incidental take permit.

### **California Endangered Species Act (CESA; Fish and Game Code 2050 *et seq.*)**

The CESA parallels FESA and protects and/or preserves native plant and wildlife species and their habitats, especially those that are threatened with extinction and those that are experiencing significant decline that may lead to a threatened or endangered designation, within the State of California. CESA designates special status species that are protected from unauthorized "take", which is defined as to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

CESA is administered by the CDFW. A State lead agency is required to consult with the CDFW to ensure that a proposed project is not likely to jeopardize the continued existence of a special status species or result in the destruction or adverse modification of essential habitat for a species. CESA allows for the issuance of incidental take permits for lawful development projects and emphasizes the benefits of early consultation between the lead agency and CDFW to avoid potential impacts to special status species and to develop appropriate mitigation measures to reduce impacts to and avoid loss of a special status species.

### **California Fish and Game Code**

Several sections of the California Fish and Game Code, which is administered by the CDFW, also may apply to future projects proposed in the City. These include Section 2081; Sections 1600 through 1616; Sections 1900, *et seq.*; Sections 2511, 4700, 5050, and 5515; Sections 3503, 3503.5, and 3513; and Title 14, California Code of Regulations, Section 670.2 and 670.6. Each of these sections is discussed in detail below.

## **Section 2081**

Section 2081 of the California Fish and Game Code allows for the issuance of an incidental take permit from CDFW for projects that have the potential to take a special status species, including a State-listed species, as long as the impacts are minimized and fully mitigated and will not jeopardize the continued existence of a State-listed species. The measures required to minimize and fully mitigate impacts must be roughly proportional to the extent of the proposed impact to the species and must be capable of successful implementation while maintaining the applicant's objectives to the greatest extent feasible. The applicant must show that adequate funding is available to implement the required avoidance and mitigation measures and monitor the effectiveness of the mitigation measures.

## **Sections 1600 through 1616**

Sections 1600 through 1616 of the California Fish and Game Code apply to all projects that would 1) substantially divert or obstruct the natural flow of, 2) substantially change or use any material from, or 3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement into the bed, channel, or bank of any river, stream, or lake. Sections 1600 through 1616 require any person, business, public utility, or state or local government agency that proposes any activity within or adjacent to a lake, river, or stream that flows at least intermittently through a bank or channel, including watercourses with a subsurface flow (e.g., ephemeral streams, desert washes) and some flood plains, to notify the regional CDFW office of the proposed activity. CDFW will determine if the proposed activity may substantially adversely affect fish and wildlife resources and if a Streambed Alteration Agreement (SAA) is necessary.

## **Other Sections**

Additional sections of the California Fish and Game Code may apply to future projects proposed in the City, including, but not limited to, Sections 1900 through 1913; Sections 2511, 4700, 5050, and 5515; Sections 3503, 3503.5, and 3513; and Title 14, California Code of Regulations, Section 670.2 and 670.6. Sections 1900 through 1913 provide guidelines to preserve, protect, and enhance endangered or rare native plants within California. Sections 2511, 4700, 5050, and 5515 provide guidelines to protect wildlife species that are designated as "fully protected" by the CDFW and as therefore cannot be harmed, taken, or possessed. Sections 3503, 3503.5, and 3513 state that it is unlawful to take, possess, or destroy the nest or eggs of any bird species except otherwise allowed by the or any regulation made pursuant to the California Fish and Game Code. Section 3503.5 provides protection specifically in the orders Falconiformes (hawks, eagles, and falcons) and Strigiformes (owls), and Section 3513 provides protection specifically for migratory, non-game birds designated by the MBTA. Title 14, California Code of Regulations, Section 670.2 and 670.6 list wildlife species that are designated as California Species of Concern or are State-listed as threatened or endangered species.

## **California Porter-Cologne Water Quality Control Act**

The California Porter-Cologne Water Quality Control Act was enacted in 1969 and is administered by either the SWRCB and/or the RWQCB. This Act provides protection for Waters of the State, which are defined as “any surface water or groundwater, including saline waters, within the boundaries of the state.” If a proposed project involves alteration to any Waters of the State, the project proponent must file a Report of Waste Discharge with the appropriate RWQCB to obtain “Waste Discharge Requirements” (WDRs), which serve as the project discharge permit.

## **California Natural Community Conservation Planning Program**

The California Natural Community Conservation Planning (NCCP) program was initiated in 1991 and is administered by CDFW. It is a cooperative effort by the CDFW and numerous public and private partners that takes a broad scale, ecosystem approach to planning for the protection and perpetuation of biological diversity throughout California by protecting both habitats and the species within these habitats while also accommodating compatible land use.

An NCCP plan identifies and provides for the regional protection of plants, wildlife, and their habitats, while allowing compatible and appropriate economic activity in the region. By including key interests in the process and by working with landowners, environmental organizations, and other interested parties, an NCCP plan provides the framework for a local agency to oversee the numerous activities that compose the development of a conservation plan. Within California, there are currently 23 active NCCP plans covering more than 11 million acres, and several draft NCCP plans are pending approval. The City is a signatory to the Implementation Agreement of the NCCP/HCP for the Central and Coastal Subregion of Orange County (R.J. Meade Consulting, Inc. 1996a, 1996b).

## **Irvine Open Space Initiative**

In 1988, Irvine residents approved the “Irvine Open Space Initiative.” This initiative created the framework to preserve large, contiguous open space areas for conservation and open space as phased master-planned growth occurred in other areas of the City. This initiative set the stage for the preservation of natural open space resources that are home to a variety of wildlife species and habitats, including special status species. The Irvine Open Space Preserve, as it now is known, protects more than 93,000 acres of land from the “mountains to the sea,” linking the Cleveland National Forest, San Joaquin Marsh (San Joaquin Wildlife Sanctuary), Laguna Coast Wilderness Park, and other resources.

The Cleveland National Forest encompasses 460,000 acres and is the southernmost national forest in California located in San Diego, Riverside, and Orange counties. The San Joaquin Wildlife Sanctuary is a 300-acre constructed wetland in the floodplain of San Diego Creek just above its outlet to Upper Newport Bay. The Laguna Coast Wilderness Park encompasses 7,000 acres in the San Joaquin Hills and features some of the last remaining undeveloped coastal canyons in southern California and the only natural lakes in Orange County.

The City has committed to protect and manage the Irvine Open Space Preserve consistent with the NCCP. The City and many other local governments and public and private agencies adopted the NCCP/HCP to cover this area. Of the NCCP/HCP acres in Irvine, 10,587 are designated for the habitat reserve system, and 813 acres are non-reserve lands called special linkages. The special linkages contain biological value that could enhance connectivity between elements of the reserve system. The City is required to implement the NCCP/HCP and review project proposals for consistency with the plan.

### **3.1.3 Local Regulations**

#### **Existing General Plan**

Irvine's existing General Plan (City 2015) established a Preservation land use designation to identify lands that contain visually significant ridgelines, biotic communities of high significance, geologic constraints, and cultural resources. This designation covers more than 11,000 acres, or nearly one-quarter of the land mass in the City. The Conservation and Open Space Element identifies goals, objectives, and policies to maintain and preserve these resources.

Key objectives and policies include, but are not limited to, the following:

- Objective L-1: Establish a program to permanently protect and preserve designated conservation and open space areas. Supporting policy addresses implementation of the phased dedication and compensating development program.
- Objective L-2: Maintain and preserve areas with significant, diverse biotic communities. Supporting policies address preservation of natural resource areas identified in the Master Environmental Assessment and development in biotic resource areas.
- Objective L-3: Participate in the NCCP/HCP to accomplish multi-species and multi-habitat conservation. Supporting policies ensure compliance with and implementation of the NCCP, including review of project proposals, payment of mitigation fees, and acquisition.
- Objective L-12: Coordinate land planning efforts with the appropriate federal, State & local agencies and landowners to encourage the integration of existing and future water sources (reservoirs, lakes, and drainage courses) into development.

#### **Municipal Code**

In Chapter 8-16 of the Zoning Code, Open Space Management and Conservation Plan (OSMCP), the City requires the preparation of such plans for qualified development projects. The OSMCP shall be utilized as the primary implementation tool for complying with biotic policies identified in biotic resources objectives L-2(a) and L-2(b) of the Conservation and Open Space Element, the timing and phasing of mitigation measures, and the responsibilities for implementation. This plan shall be prepared in conjunction with a concept plan and/or zone change application and in accordance with the City's guidelines for open space management and conservation plan reports. In addition, the plan will address "transition zones" described in the zoning code.



## **3.2 EXISTING BIOLOGICAL CONDITIONS**

### **3.2.1 Environmental Setting**

The City of Irvine lies within the coastal and foothill region of central Orange County, California (Figures 1 and 2).

The average, annual high temperature in the City is 72.7 degrees Fahrenheit. The warmest month, August, averages a high of 83 degrees Fahrenheit. The coolest months, December/January, average a low of 47 degrees Fahrenheit. The City receives average annual precipitation, as rainfall, of 14.42 inches, with most of the rain falling from November through March (U.S. Climate Data 2018).

The City has four major landform areas (Figure 2) that are generally described below.

#### Santiago Hills

The Santiago Hills consist of moderately steep to steep, unbuildable slopes, canyons, plateaus, and narrow ridges, which reach an elevation of 1,700 feet. Eroded sandstone gorges known as the “sinks” are the most significant physical feature in the southeast corner. Other important features are the canyons—Agua Chinon, Bee, Hicks, Little Joaquin, Rattlesnake, and Round. Santiago Hills have retained most of their natural biotic character; their biotic communities are freshwater marsh, coastal sage scrub, oak woodland, and grassland.

#### Northern Flatlands

The flatlands extend from the Santiago Hills to the Santa Ana Freeway (Interstate 5). This area is nearly flat, gradually sloping from the northeast to the southwest and traversed by many streams that are part of the San Diego Creek Watershed that originates in the Santiago Hills.

The increased demand for housing and employment in Orange County has resulted in substantial land use changes from agriculture to urban development within the San Diego Creek Watershed. Agricultural uses, which began in the 19<sup>th</sup> century, already altered the watershed’s natural conditions and hydrology, including increased runoff in Newport Bay and channelization of San Diego Creek (Corps 2008b rev. 2009).

The natural biotic communities of the Northern Flatlands have been altered by agricultural activities, except near the perimeters. This area hosts orchards, row crops, eucalyptus windrows, and non-native, ornamental vegetation.

#### Central Flatlands

The central flatlands are also a portion of the Tustin Plain between Interstate 5 and the San Diego Freeway (Interstate 405). The area is extremely flat and crossed by San Diego Creek and Peters Canyon Wash. The natural biotic communities have, for the most part, been altered by agricultural activities and urban development. The primary biotic communities are farmland/rural and urban, except for the riparian community in Planning Areas 12 and 13.

## San Joaquin Hills

The San Joaquin Hills consist of rolling terrain with moderately steep slopes, canyons, narrow ridges, and spectacular rock outcroppings, many of which contain eroded sandstone caves. Wildlife habitats and vegetation types include both rare and common wildlife and plant species. Important habitat for the coastal California gnatcatcher (*Polioptila californica californica*) and coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*) is in the northeastern and southeastern corners of the City and unincorporated Orange County.

### **3.2.2 Topography and Soils**

The topography within the City consists generally of flatlands and hills as described above in Section 3.2.1 of this report. Elevations in the City range from approximately 10 to 1,700 feet above mean sea level. Forty-two soil types are mapped by the USDA NRCS within the City as listed in Table 1.

<b>Table 1 SOIL TYPES WITHIN THE CITY</b>	
<b>Name</b>	<b>Percent Slope</b>
Alo clay	9-50
Alo variant clay	9-50
Anaheim clay loam	15-75
Anaheim loam	15-50
Balcom-Rock outrock complex	15-50
Balcom clay loam	9-50
Bosanko-Balcom complex	15-50
Bosanko clay	9-50
Botella clay loam	2-15
Botella loam	2-9
Calleguas clay loam	50-75
Capistrano sandy loam	2-15
Chesterton loamy sand	2-30
Chino silty clay loam	NA
Cieneba-Rock outcrop complex	9-75
Cieneba sandy loam	15-75
Corralitos loamy sand	NA
Cropley clay	2-9
Gabino gravelly clay loam	15-50
Marina loamy sand	2-9
Metz loamy sand	NA
Mocho loam	0-9
Mocho sandy loam	0-2
Myford sandy loam	0-30
Omni clay	NA
Omni silt loam	NA
Pits	NA
Riverwash	NA
Rock outcrop-Cieneba complex	30-75
San Andreas sandy loam	15-30
San Emigdio fine sandy loam	0-9
Soper cobbly loam	15-50
Soper gravelly loam	30-50
Soper loam	30-50
Sorrento clay loam	0-9
Sorrento loam	0-9
Sorrento sandy loam	0-2
Thapto-Histic Fluvaquents	NA
Tidal Flats	NA
Water	NA
Yorba cobbly sandy loam	9-30
Yorba gravelly sandy loam	2-15

### 3.2.3 Vegetation and Land Cover Types

Vegetation and land cover types that occur within the City (Figure 3) were identified through the most current (2015) vegetation mapping from the Nature Reserve of Orange County. Based on this information, 17 types occur within the City and include:

- Annual Grassland
- Perennial Grassland
- Annual Grassland/Perennial Grassland
- Coastal Oak Woodland
- Mixed Chaparral
- Coastal Scrub
- Lacustrine
- Riverine
- Barren
- Riverine, Barren
- Estuarine, Lacustrine, Riverine
- Valley Foothill Riparian
- Eucalyptus
- Fresh Emergent Wetland
- Saline Emergent Wetland
- Orchard-Vineyard, Evergreen Orchard, Irrigated Row and Field Crops
- Urban

Each of these types is described in detail below. Because the Nature Reserve of Orange County vegetation map does not include descriptions of the land cover classifications, the descriptions below are based on information obtained from various resources that provide general vegetation community descriptions, including the CDFW Wildlife Habitat Relationships System among others.

In addition, some of these vegetation communities occur in transitional or ecotonal zones within the City (e.g., Estuarine, Lacustrine, Riverine), where one or more of the definitions provided below may apply. To avoid repetition, each is described separately (e.g., Riverine is described once instead of three times for Riverine; Riverine, Barren; and Estuarine, Lacustrine, Riverine).

#### **Annual Grassland**

Annual grassland is open grassland composed primarily of annual plant species. The community's structure depends largely on weather patterns and livestock grazing. Dramatic differences in physiognomy, both between seasons and between years, are characteristic of this habitat. Introduced annual grasses are the dominant plant species. These species include wild oats, soft chess, ripgut brome, red brome, wild barley, and foxtail fescue. Common forbs include broadleaf filaree, redstem filaree, turkey mullein, true clovers, bur clover, popcorn flower, and others. California poppy, the State flower, may also be found in this habitat (CDFW Wildlife Habitat Relationships System 2005).

### **Perennial Grassland**

Perennial grassland consists of climax stands of perennial bunchgrasses, such as purple needlegrass, on wetter sites (CDFW Wildlife Habitat Relationships System 2005).

### **Coast Oak Woodland**

Coastal live oak woodland occurs in more mesic areas of coastal California from Sonoma County south into Baja California, Mexico. These woodlands are found within a 50-mile radius of the coast. Fog is common in these areas, and the soils are typically well drained. Although not limited to these areas, coastal live oak woodland is common in ravines and moist drainages between grassy hillsides. The dominant plant species is coast live oak (*Quercus agrifolia*; Cal Poly 2018).

### **Mixed Chaparral**

Mixed Chaparral is a structurally homogeneous community dominated by shrubs with thick, evergreen leaves. Shrub height and crown cover vary considerably with age since last burn, precipitation regime, aspect, and soil type. At maturity, cismontane Mixed Chaparral typically is a dense, nearly impenetrable thicket with greater than 80 percent absolute shrub cover (Hanes 1977).

### **Coastal Scrub**

Coastal scrub is dominated by semi-woody, low- to moderate-sized shrubs with shallow root systems. No single species is typical of all Coastal Scrub stands. Species composition changes with progressively more xeric conditions from north to south along the coast. Species dominance appears to shift from evergreen species in the north to drought-deciduous species in the south (CDFW Wildlife Habitat Relationships System undated).

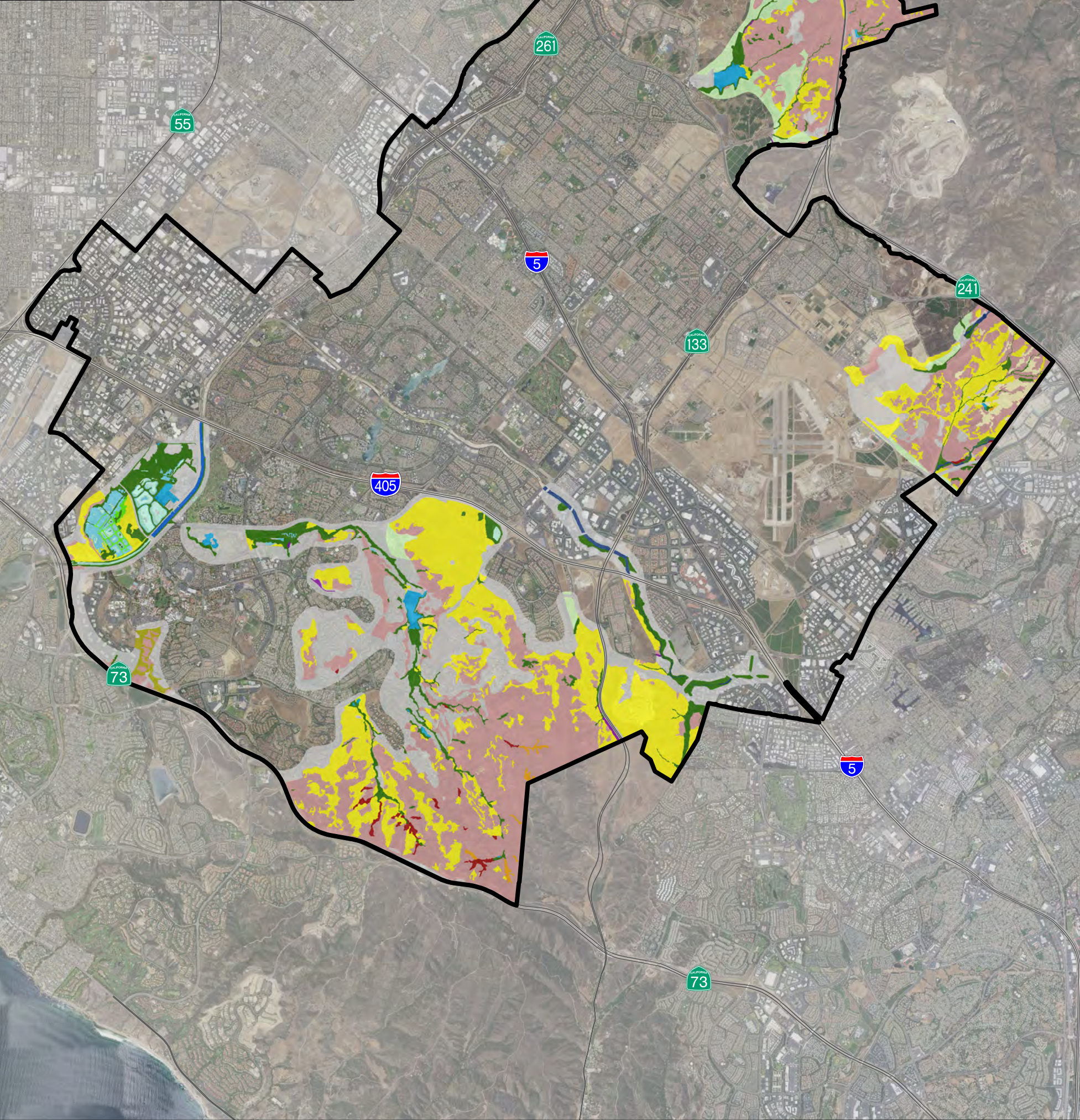
### **Lacustrine**

Lacustrine habitats are inland depressions or dammed riverine channels containing standing water (Cowardin et al. 1979). Depth can vary from a few centimeters to hundreds of meters. Typically, lacustrine habitats include permanently flooded lakes and reservoirs, intermittent lakes, and ponds (including vernal pools; CDFW Wildlife Habitat Relationships System undated).

### **Riverine**

Riverine systems consist of intermittent or continually running water. A stream originates at an elevated source, such as a spring or lake, and flows downward at a rate relative to slope or gradient and the volume of surface runoff or discharge. Velocity generally declines at progressively lower altitudes, and the volume of water increases until the enlarged stream finally becomes sluggish (McNaughton and Wolf 1973). Some streams, except for occasional pools, dry up seasonally every year (CDFW Wildlife Habitat Relationships System undated).

-  City Boundary
-  Annual Grassland
-  Annual Grassland, Perennial Grassland
-  Barren
-  Coastal Oak Woodland
-  Coastal Scrub
-  Estuarine, Lacustrine, Riverine
-  Eucalyptus
-  Fresh Emergent Wetland
-  Lacustrine
-  Mixed Chaparral
-  Orchard-Vineyard, Evergreen Orchard, Irrigated Row and Field Crops
-  Perennial Grassland
-  Riverine
-  Riverine, Barren
-  Saline Emergent Wetland
-  Urban
-  Valley Foothill Riparian

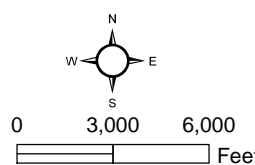


Source: Nature Reserve of Orange County (NROC);  
USDA NAIP 2016; Esri

**Figure 3**

**Vegetation and  
Land Cover Types**

BIOLOGICAL TECHNICAL REPORT  
CITY OF IRVINE  
GENERAL PLAN UPDATE





## **Barren**

Barren land lacks vegetation, typically because of recent and/or continuous clearing of vegetation. It often consists of rock, gravel, and/or soil. These areas differ from “urban,” discussed below, because they do not support buildings, paved roads, parking lots, or ornamental plantings.

## **Riverine, Barren**

See Riverine and Barren as described above.

## **Estuarine, Lacustrine, Riverine**

Estuarine habitats either 1) have constant exchange and interaction with ocean water or marine embayment (estuary, tidal flat, tidal marsh, or eel-grass meadow) or 2) are often separated from ocean water exchange (coastal lagoon; CDFW Wildlife Habitat Relationships 2002). The latter situation is present in the City where Lacustrine and Riverine habitats in the western part of the City are often separated from Upper Newport Bay waters that occur west of State Route 73 outside the City limits. This same area in the City also supports Lacustrine and Riverine habitats. See above for descriptions of those habitats.

## **Valley Foothill Riparian**

Valley Foothill Riparian habitats are found in valleys generally associated with low velocity water flow, flood plains, and gentle topography (Cheatham and Haller 1975). Some dominant species in the canopy layer are cottonwood (*Populus* spp.), California sycamore (*Platanus racemosa*), and oak (*Quercus* spp). Typical understory shrub layer plants include species such as wild grape (*Vitis girdiana*), wild rose (*Rosa californica*), California blackberry (*Rubus ursinus*), blue elderberry (*Sambucus nigra* ssp. *caerulea*), poison oak (*Toxicodendron diversilobum*), and willows (*Salix* spp.). The herbaceous layer consists of species such as sedges, rushes, grasses (CDFW Wildlife Habitat Relationships undated).

## **Eucalyptus**

*Eucalyptus* an introduced genus, whose tree species have been planted typically for wind blocking, ornamental, and hardwood production purposes. If sufficient moisture is available, this genus becomes naturalized and is able to reproduce and expand its areal coverage. Eucalyptus occurs in the City in naturalized patches, landscaping, and windrows.

## **Fresh Emergent Wetland**

Fresh Emergent Wetlands are flooded frequently and are characterized by dominant vegetation generally consisting of perennial monocots to 6.6 feet tall (Cheatham and Haller 1975, Cowardin et al. 1979). Characteristic species on the upper margins of the habitat include those such as sedges and rushes, and on more alkali sites, saltgrass (*Distichlis* sp.). On wetter sites, potential dominant species include cattail (*Typha* spp.) and bulrushes (*Scirpus* spp.; CDFW Wildlife Habitat Relationships undated).



### **Saline Emergent Wetland**

Saline Emergent Wetland occurs above intertidal sand and mud flats (Küchler 1977) and below upland communities not subject to tidal action (Macdonald 1977). It is characterized as salt or brackish marsh with characteristic species such as cordgrass (*Spartina* spp.), pickleweed and glasswort (*Salicornia* spp.), bulrushes, and carex (*Carex* spp.).

### **Orchard, Vineyard, Evergreen Orchard, Irrigated Row and Field Crops**

Orchards, vineyards, and row crops are land uses primarily for the production of food and fiber. On aerial imagery, the chief indications of agricultural activity are distinctive geometric field and road patterns on the landscape and the traces produced by mechanized equipment. The number of building complexes is smaller and the density of the road and highway network is much lower among these land uses than in Urban areas (see Urban below).

### **Urban**

Urban lands typically support little to no native vegetation and are characterized by the presence of man-made structures such as buildings, paved roads, parking lots, parks, and residential areas that are either unvegetated or are dominated by exotic, ornamental plant species.

#### **3.2.4 Flora**

Despite the urbanization of most of the City, there are still areas within the City that provide open space and relatively untouched habitats that support native plant species.

The City also supports many agricultural lands and developed areas. While these lands typically support planted crops and orchards as well as ornamental species, respectively, they likely support both native and non-native plant species. Native plant species that can tolerate disturbance, and even thrive in disturbed areas, probably can be found growing alongside of the planted crops or as the understory within the orchards.

Some of the non-native plant species are likely invasive. These species likely have replaced native habitats that historically occurred because they produce larger quantities of seeds than the native plant species, have aggressive root systems that spread long distances and can steal resources (e.g., water, minerals) from native plant species, have dense root systems that smother the root systems of surrounding vegetation, and/or produce chemicals that inhibit the growth of other plant species around them. Invasive species pose serious environmental threats because they can invade healthy, native ecosystems and degrade the quality of the habitat so that it no longer provides the functions and values of the native ecosystems that occurred there historically.

### 3.2.5 Fauna

A variety of resident and migratory wildlife species occur within the City. Many of the resident species have adapted to survival within the interface of the urban lands and adjacent open space, parks, and preserves. The City provides habitat for both common and special status species including invertebrates, amphibians, reptiles, birds, and mammals.

Birds are the most numerous type of readily observable wildlife that occur within the City. Many common bird species can be seen such as mourning dove (*Zenaida macroura*), northern mockingbird (*Mimus polyglottos*), European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), and lesser goldfinch (*Spinus psaltria*). Common small and large mammals are also likely present in the City. Some of these species include woodrats (*Neotoma* spp.), mice (e.g., *Peromyscus* and *Chaetodipus* spp.), coyote (*Canis latrans*), raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), and striped skunk (*Mephitis mephitis*). Both the bobcat (*Lynx rufus*) and mountain lion (*Puma concolor*) have also been reported in the City.

### 3.3 SENSITIVE BIOLOGICAL RESOURCES

Sensitive biological resources include sensitive vegetation communities, special status plant species, special status wildlife species, wildlife movement corridors, and wetland/riparian resources. In general, the principal reason that a species, subspecies, or variety is considered sensitive is the documented or perceived decline or limitation of its population size or geographical extent and/or distribution resulting in most cases from habitat loss. Wildlife movement corridors or linkages also are considered sensitive by local, State, and federal resource and conservation agencies because these corridors allow wildlife to move between adjoining open space areas that are becoming increasingly isolated as open space becomes increasingly fragmented from urbanization, rugged terrain, or changes in vegetation (Beier and Loe 1992). In addition, wetland and riparian resources are considered sensitive because of their limited distribution and high wildlife value.

Many sensitive biological resources are known to occur or have the potential to occur within the City based on historical data for the region identified through a query of the CNDDDB and USFWS database, the National Hydrography Dataset, and/or the presence of potentially suitable habitat within the City. The following section describes these sensitive biological resources.

#### 3.3.1 Sensitive Vegetation Communities

Sensitive vegetation communities are vegetation assemblages, associations, or subassociations that have cumulative losses throughout the region, have relatively limited distribution, support or potentially support sensitive plant or wildlife species, or have particular value to other wildlife. Typically, sensitive vegetation communities are considered sensitive whether or not they have been disturbed. Sensitive vegetation communities are regulated by various local, State, and federal resource agencies.

The CNDDDB provides an inventory of natural communities that are considered sensitive by State and federal resource agencies, academic institutions, and conservation groups such as the California Native Plant Society (CNPS). Determination of the level of sensitivity is based on the Nature Conservancy Heritage Program Status Ranks that rank both species and plant communities on a global and statewide basis according to the number and size of remaining occurrences as well as recognized threats such as proposed development, habitat degradation, and invasion by non-native species.

Based on a California Sensitive Natural Communities (CDFW 2018) search, ten sensitive vegetation communities were identified within the City and are listed below. According to the CDFW (2018), natural communities with ranks of 1 to 3, or Y (for alliances), are considered sensitive. Since the specific species composition and dominance in each of the communities in the City is not known for this report, the sensitivity for the alliance was used.

Vegetation communities that are wetland and/or riparian resources are also considered sensitive biological resources and are regulated by the Corps, CDFW, and/or RWQCB pursuant to several federal and State regulations. Wetland and/or riparian resources are also identified in the list below. See Section 3.3.5 of this report for more information about wetland and riparian resources.

- Perennial Grassland (Y)
- Annual/Perennial Grassland (Y; annual grassland is not sensitive, but perennial is)
- Coastal Oak Woodland (Y)
- Coastal Scrub (Y)
- Lacustrine (Wetland/Riparian)
- Riverine (Wetland/Riparian)
- Riverine (Wetland/Riparian), Barren (the barren portion of this community is not sensitive)
- Estuarine, Lacustrine, Riverine (Wetland/Riparian)
- Freshwater Emergent Wetland (Y, Wetland)
- Saline Emergent Wetland (Y, Wetland)

### 3.3.2 Special Status Plant Species

For purposes of this report, special status plant species include those that are:

- listed or proposed for listing by federal or State agencies as threatened or endangered;
- on List 1B (considered endangered throughout its range) or List 2 (considered endangered in California but more common elsewhere) of the CNPS' *Inventory of Rare and Endangered Vascular Plants of California*;
- considered rare, endangered, or threatened by the CDFW or other local conservation organizations or specialists; and/or
- covered under the NCCP/HCP

Noteworthy plant species are considered to be those on:

- List 3 (more information about the plant distribution and rarity needed) and
- List 4 (plants of limited distribution) of the CNPS *Inventory*.

The CNPS is a Statewide resource conservation organization that has developed an inventory of California's sensitive plant species. The CNPS listing is sanctioned by the CDFW and essentially serves as an early warning list of potential candidate species for threatened or endangered status.

According to USFWS, a federal endangered species is defined as a species facing extinction throughout all or a significant portion of its geographic range, and a federally threatened species is defined as a species that is likely to become endangered within the foreseeable future throughout all or a significant part of its range. CDFW defines an endangered species as one whose prospects of survival and reproduction are in immediate jeopardy, a threatened species as one present in such small numbers throughout its range that it is likely to become an endangered species in the near future in the absence of special protection or management, and a rare species as one present in such small numbers throughout its range that it may become endangered if its present environment worsens.

Species that are federal- or State-listed threatened or endangered species; are designated as CNPS List 1B or 2 species; and/or are considered rare, endangered, or threatened by the CDFW and are afforded a degree of protection that entails a permitting process including specific mitigation measures to compensate for impacts to the species. Species that are proposed to be listed by the USFWS are treated similarly to listed species by that agency. Recommendations of the USFWS, however, are advisory rather than mandatory in the case of proposed species. Although plant species that are classified as List 3 or 4 species by CNPS are not provided legal protection, this designation is used to identify declining plant species that are considered sensitive by the CNPS but not considered threatened or endangered.

There are 33 special status plant species known to occur historically from the region of the City. Ten of these species have been reported within the City or just outside the City limits (Figure 4). All 33 special status plant species are summarized in Table 2. No critical habitat has been designated by the USFWS within the City for any plant species.

**Table 2**  
**SPECIAL STATUS PLANT SPECIES REPORTED WITHIN THE CITY OF IRVINE OR THE REGION**

Scientific Name	Common Name	Status	Habitat Description	Occurrence Info
<i>Aphanisma blitoides</i>	Aphanisma	List 1B.2	Coastal bluffs	May occur within the City because potential habitat may be present.
<i>Astragalus brauntonii</i>	Braunton's milk-vetch	FE List 1B.1	Chaparral, coastal scrub, grassland—recent burns or disturbed areas	May occur within the City because potential habitat may be present.
<i>Atriplex coulteri</i>	Coulter's saltbush	List 1B.2	Grassland, sage scrub, eroded coastal terrace	Reported in the City (Figure 4).
<i>Atriplex serenana</i> var. <i> davidsonii</i>	Davidson's saltscale	List 1B.2	Alkaline coastal bluff scrub, coastal scrub	Reported in the City (Figure 4).
<i>Atriplex pacifica</i>	South Coast saltscale	List 1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, playas	May occur within the City because suitable habitat may be present.
<i>Calochortus catalinae</i>	Catalina mariposa lily	List 4.2 Covered	Chaparral, cismontane woodland, coastal scrub, grassland	May occur within the City because suitable habitat may be present.
<i>Calochortus weedii</i> var. <i> intermedius</i>	Intermediate mariposa-lily	List 1B.2 Covered	Rocky, calcareous chaparral, coastal scrub, grassland.	Reported in the City (Figure 4).
<i>Camissoniopsis lewisii</i>	Lewis' evening-primrose	List 3.0	Sand bars with salt marsh	May occur within the City because suitable habitat may be present.
<i>Chloropyron maritimum</i> ssp. <i> maritimum</i>	Salt marsh bird's-beak	FE SE List 1B.2	Salt marsh	May occur within the City because suitable habitat may be present.
<i>Chorizanthe polygonoides</i> var. <i> longispina</i>	Long-spined spineflower	List 1B.2	Chaparral, coastal scrub, meadows and seeps, grassland, vernal pools—often with clay soils	May occur within the City because suitable habitat may be present.
<i>Cistanthe maritima</i>	Seaside calandrinia	List 4.2	Sandy coastal bluff scrub, coastal scrub, grassland	May occur within the City because suitable habitat may be present.
<i>Convolvulus simulans</i>	Small-flowered morning glory	List 4.2	Grassland with clay soil	May occur within the City because suitable habitat may be present.
<i>Deinandra paniculata</i>	Paniculate tarplant	List 4.2	Coastal scrub, grassland vernal pools	May occur within the City because suitable habitat may be present.

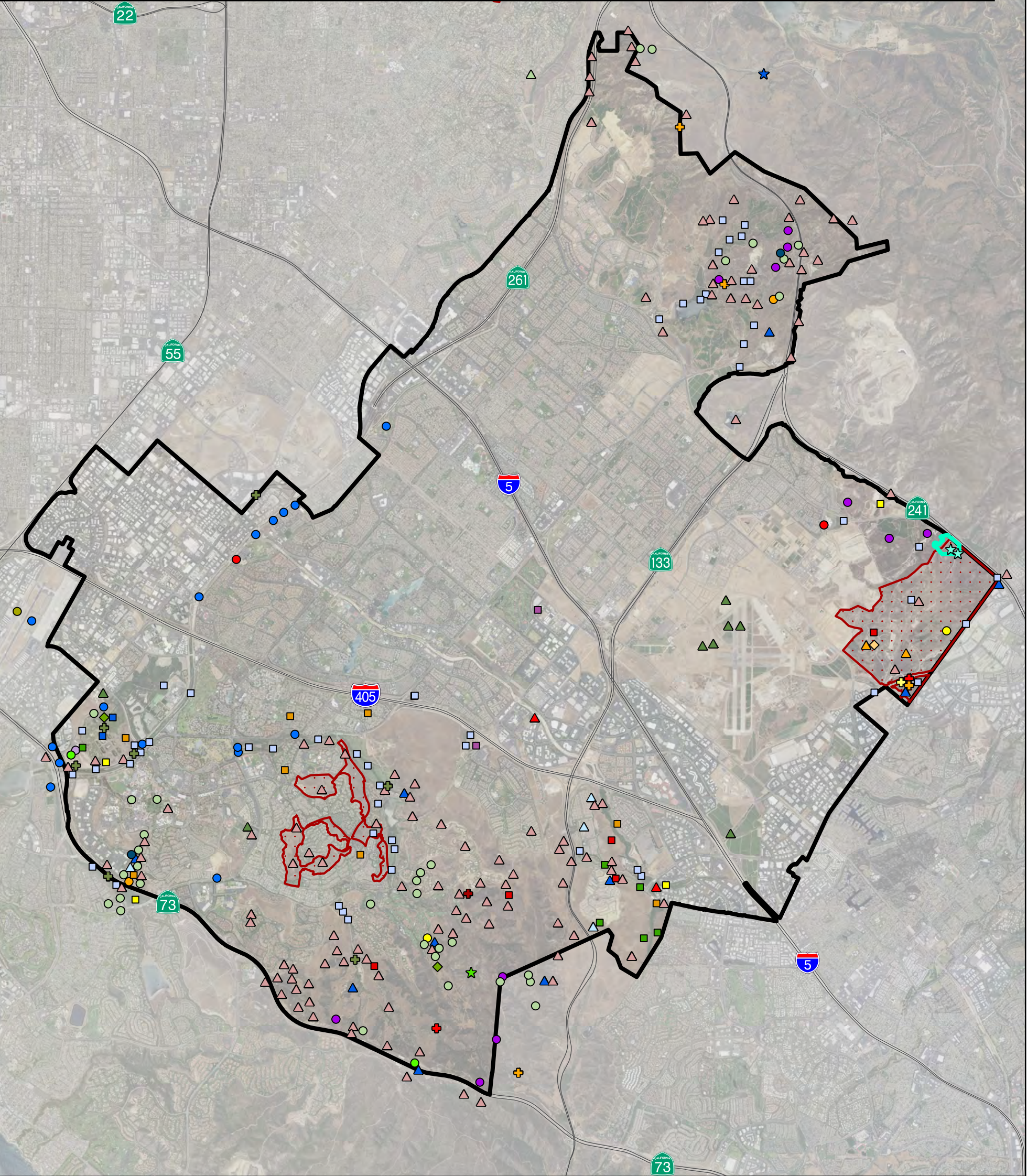
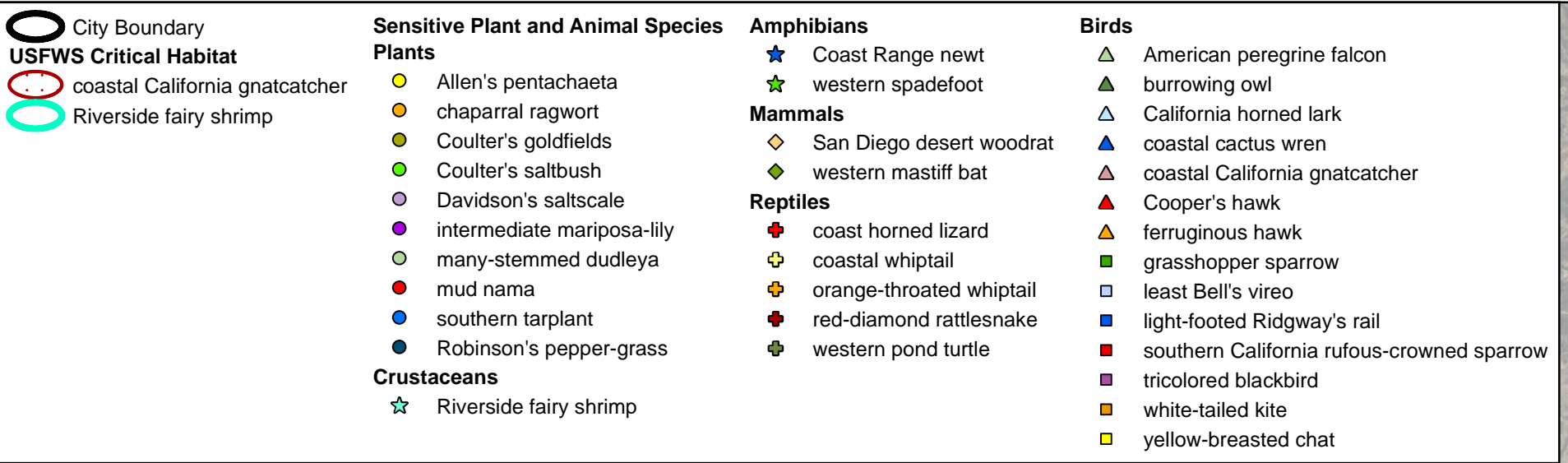
**Table 2**  
**SPECIAL STATUS PLANT SPECIES REPORTED WITHIN THE CITY OF IRVINE OR THE REGION**

Scientific Name	Common Name	Status	Habitat Description	Occurrence Info
<i>Dichondra occidentalis</i>	Western dichondra	List 4.2 Covered	Chaparral, cismontane woodland, coastal scrub, grassland	May occur within the City because suitable habitat may be present.
<i>Dudleya multicaulis</i>	Many-stemmed dudleya	List 1B.2	Coastal scrub, chaparral, grassland—often with clay soil	Reported in the City (Figure 4).
<i>Eleocharis parvula</i>	Small spike-rush	List 4.3	Marshes and swamps	May occur within the City because suitable habitat may be present.
<i>Centromadia parryi</i> ssp. <i>australis</i>	Southern tarplant	List 1B.1	Margins of marshes and swamps, mesic grassland, vernal pools	Reported in the City (Figure 4).
<i>Hordeum intercedens</i>	Vernal barley	List 3.2	Coastal dunes, coastal scrub, grassland, vernal pools	May occur within the City because suitable habitat may be present.
<i>Juncus acutus</i> ssp. <i>leopoldii</i>	Southwestern spiny rush	List 4.2	Mesic coastal dunes, meadows and (alkaline) seeps, coastal salt marshes and swamps	May occur within the City because suitable habitat may be present.
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Coulter's goldfields	List 1B.1	Coastal salt marshes and swamps, playas, vernal pools	May occur within the City because suitable habitat may be present, and it was reported just outside the City limits (Figure 4).
<i>Lepidium virginicum</i> var. <i>robinsonii</i>	Robinson's pepper-grass	List 4.3	Chaparral, coastal scrub	Reported in the City (Figure 4).
<i>Lycium californicum</i>	California box-thorn	List 4.2	Coastal bluff scrub, coastal scrub	May occur within the City because suitable habitat may be present.
<i>Malacothrix saxatilis</i> var. <i>saxatilis</i>	Cliff malacothrix	List 4.2	Coastal bluff scrub, coastal scrub	May occur within the City because suitable habitat may be present.
<i>Microseris douglasii</i> ssp. <i>platycarpa</i>	Small-flowered microseris	List 4.2	Clay soils in cismontane woodland, coastal scrub, grassland, vernal pools	May occur within the City because suitable habitat may be present.
<i>Nama stenocarpa</i>	Mud nama	List 2B.2	Marshes and swamps (lake margins, riverbanks)	Reported in the City (Figure 4).

**Table 2**  
**SPECIAL STATUS PLANT SPECIES REPORTED WITHIN THE CITY OF IRVINE OR THE REGION**

Scientific Name	Common Name	Status	Habitat Description	Occurrence Info
<i>Navarretia prostrata</i>	Prostrate vernal pool navarretia	List 1B.1	Mesic coastal scrub, meadows and seeps, grassland, vernal pools	May occur within the City because suitable habitat may be present.
<i>Nemacaulis denudata</i> var. <i>denudata</i>	Coast woolly-heads	List 1B.2	Coastal dunes	Not likely to occur in the City due to lack of potential habitat.
<i>Pentachaeta aurea</i> ssp. <i>allenii</i>	Allen’s pentachaeta	List 1B.1	Coastal scrub and grassland	Reported in the City (Figure 4).
<i>Romneya coulterii</i>	Coulter’s matilija poppy	List 4.2 Covered	Chaparral, coastal scrub—often in burned areas	May occur within the City because suitable habitat may be present.
<i>Senecio aphanactis</i>	Chaparral ragwort	List 2B.2	Chaparral, cismontane woodland, coastal scrub	Reported in the City (Figure 4).
<i>Sidalcea neomexicana</i>	Salt spring checkerbloom	List 2B.2	Mesic chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, playas	May occur within the City because suitable habitat may be present.
<i>Suaeda esteroa</i>	Estuary seablite	List 1B.2	Coastal salt marshes and swamps	May occur within the City because suitable habitat may be present.
<i>Symphotrichum defoliatum</i>	San Bernardino aster	List 1B.2	Near ditches, streams, springs--cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, vernal mesic grassland	May occur within the City because potential habitat may be present.

Status: FE=Federal endangered; SE=State endangered; Covered = Covered under the NCCP/HCP



Source: CDFW CNDD; USFWS CFWO; USDA NAIP 2016; Esri

**Figure 4**

**Special Status Plant and Wildlife Species and Critical Habitat**  
 BIOLOGICAL TECHNICAL REPORT  
 CITY OF IRVINE  
 GENERAL PLAN UPDATE

0 3,000 6,000 Feet

**ALDEN**  
 ENVIRONMENTAL, INC





### 3.3.3 Special Status Wildlife Species

For purposes of this report, special status wildlife species include those that are 1) listed or proposed for listing as threatened or endangered by the USFWS or the CDFW; 2) designated as Birds of Conservation Concern by the USFWS; 3) designated as California Fully Protected or California Species of Special Concern by the CDFW; and/or 4) covered under the NCCP/HCP. In addition, raptors (birds of prey) and active raptor nests are protected by the California Fish and Game Code 3503.5, which states that it is “unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird” unless authorized. The federal MBTA, which restricts the killing, taking, collecting, selling, or purchasing of native bird species or their parts, nests, or eggs, also provides legal protection for almost all breeding bird species occurring in the U.S. The MBTA is supplemented by the BGEPA, which provides protection for both the bald eagle and the golden eagle by prohibiting the “take” of either of these species, including their parts, nests, or eggs. Noteworthy wildlife species are those given the informal designation of California Species of Concern by the CDFW. This designation applies to animals not listed under FESA or CESA but which nonetheless (1) are declining at a rate that could result in listing or (2) historically occurred in low numbers and known threats to their persistence currently exist.

According to the USFWS, a federal endangered species is defined as a species facing extinction throughout all or a significant portion of its geographic range, and a federal threatened species is defined as a species that is likely to become endangered within the foreseeable future throughout all or a significant part of its range. The CDFW defines an endangered species as one whose prospects of survival and reproduction are in immediate jeopardy, a threatened species as one present in such small numbers throughout its range that it is likely to become an endangered species in the near future in the absence of special protection or management, a California Fully Protected species as one that is rare or faces possible extinction, and a California Species of Concern as one that is declining in numbers.

Species that are federal- or State-listed threatened or endangered are afforded a degree of protection that entails a permitting process, including specific mitigation measures to compensate for impacts to the species. Species that are proposed to be listed by the USFWS are treated similarly to listed species by that agency. Recommendations of the USFWS, however, are advisory rather than mandatory in the case of proposed species. As regulated by the CDFW, Fully Protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock. Wildlife species classified as California Species of Concern or Watch List by the CDFW are not typically provided legal protection; however, there are exceptions for some species such as the burrowing owl (*Athene cunicularia*). Similarly, Birds of Conservation Concern refers to non-listed subspecies or populations of federal threatened or endangered species.

There are 59 special status wildlife species known to occur historically from the region. Twenty-four of these species have been reported within the City or just outside the City limits (Figure 4). All 59 special status wildlife species are summarized in Table 3. Critical habitat has been designated by the USFWS for two species within the City: Riverside fairy shrimp (*Streptocephalus woottoni*) and coastal California gnatcatcher (Figure 4).

**Table 3  
SPECIAL STATUS WILDLIFE SPECIES REPORTED WITHIN  
THE CITY OF IRVINE OR THE REGION**

Scientific Name	Common Name	Status	Habitat Description	Occurrence Info
<b>Invertebrates</b>				
<i>Branchinecta sandiegonensis</i>	San Diego fairy shrimp	FE Covered	Vernal pools or other ephemeral basins in coastal southern California south to extreme northwestern Baja California, Mexico	May occur within the City because suitable habitat may be present.
<i>Streptocephalus woottoni</i>	Riverside fairy shrimp	FE Covered	Restricted to a few vernal pools in southwestern Riverside, Orange, and San Diego counties	Reported in the City, and critical habitat has been designated in the City (Figure 4).
<b>Fish</b>				
<i>Eucyclogobius newberryi</i>	Tidewater goby	FE CSC	Shallow brackish lagoons and lower stream reaches	May occur within the City because potential habitat may be present.
<b>Amphibians</b>				
<i>Aneides lugubris</i>	Arboreal salamander	Covered	Moist places in a variety of habitats from coastal dunes to woodlands	May occur within the City because suitable habitat may be present.
<i>Anaxyrus californicus</i>	Arroyo toad	FE CSC Covered	Breeds in shallow pools along stream edges with sand/gravel flats between March and June. Adults use sage scrub, mixed chaparral, oak woodland habitats up to within one mile of breeding sites.	May occur within the City because suitable habitat may be present.
<i>Batrachoseps nigriventris</i>	Blackbelly slender salamander	Covered	Moist places, mainly in woodlands, but also found in grasslands and riparian habitats	May occur within the City because suitable habitat may be present.
<i>Spea hammondi</i>	Western spadefoot	CSC Covered	Washes, river floodplains, alluvial fans, playas, alkali flats, temporary ponds, vernal pools in mixed woodlands, grasslands, coastal sage scrub, and chaparral. Surface activity October to April. Oviposition late February to May in temporal pools and slow-moving sections of streams	Reported in the City (Figure 4).
<i>Taricha torosa</i>	Coast Range newt	CSC	In southern California, habitats include drier chaparral, oak woodland, and grasslands	Reported just outside the City limits (Figure 4).
<b>Reptiles</b>				
<i>Phrynosoma blainvillii</i>	Coast horned lizard	CSC Covered	Scrubland, grassland, coniferous woods, and broadleaf woodlands, especially in areas with sandy soils, scattered shrubs, and ant colonies, such as along the edges of arroyo bottoms or dirt roads.	Reported in the City (Figure 4).
<i>Aspidoscelis hyperythra</i>	Orange-throated whiptail	WL Covered	Open coastal sage scrub, chaparral, and streamside growth with loose sandy soils, revegetation sites.	Reported in the City (Figure 4).

**Table 3**  
**SPECIAL STATUS WILDLIFE SPECIES REPORTED WITHIN**  
**THE CITY OF IRVINE OR THE REGION**

Scientific Name	Common Name	Status	Habitat Description	Occurrence Info
<i>Aspidoscelis tigris stejnegeri</i>	Coastal western whiptail	CSC Covered	Coastal sage scrub, chaparral, and wash habitats	Reported in the City (Figure 4).
<i>Anniella stebbinsi</i>	Southern California legless lizard	CSC	Found in leaf litter and loose soil on beaches and in coastal scrub, chaparral, and open riparian habitats. Sandy washes and beach dunes are used for burrowing, while logs and leaf litter are used for cover and feeding.	May occur within the City because suitable habitat may be present.
<i>Charina trivirgata</i>	rosy boa	Covered	Rocky areas in coastal sage scrub and chaparral	May occur within the City because potential habitat may be present.
<i>Crotalus ruber</i>	red-diamond rattlesnake	CSC Covered	Arid scrub (including coastal sage scrub), chaparral, woodlands, and cultivated areas, often with large rocks or boulders	Reported in the City (Figure 4).
<i>Diadophis punctatus modestus</i>	San Bernardino ringneck snake	Covered	Semi-arid brushy areas and chaparral in canyons, rocky hillsides, and plains	May not occur in the City due to limited or lacking potential habitat.
<i>Emys marmorata</i>	Western pond turtle	CSC	Slow-water aquatic habitats with available basking sites (e.g., submerged logs, open mud banks)	Reported in the City (Figure 4).
<i>Plestiodon skiltonianus interparietalis</i>	Coronado skink	WL Covered	Occurs in variety of mesic habitats including coastal sage, chaparral, oak woodlands, pinon-juniper, and riparian woodlands to pine forests	May occur within the City because suitable habitat may be present.
<i>Salvadora hexalepis virgulata</i>	Coast patch-nosed snake	CSC	Semi-arid brushy areas and chaparral in canyons, rocky hillsides, and plains	May occur within the City because potential habitat may be present.
<i>Thamnophis hammondi</i>	Two-striped garter snake	CSC	Permanent fresh water, inhabiting streams, ponds, vernal pools. Occupies adjacent coastal sage scrub and grasslands during the winter.	May occur within the City because suitable habitat may be present.
<b>Birds</b>				
<i>Accipiter cooperii</i>	Cooper's hawk	WL	Occurs in various woodland habitats, including riparian	Reported in the City (Figure 4).
<i>Accipiter striatus</i>	Sharp-shinned hawk	WL Covered	Woodland areas and open lowlands	May occur within the City because potential habitat may be present.
<i>Agelaius tricolor</i>	Tricolored blackbird	BCC CSC, (SE Candidate)	Cattail or tule marshes; forages in fields, farms. Breeds in large freshwater marshes in dense stands of cattails or bulrushes. At all seasons (including when breeding), does most of its foraging in open habitats such as farm fields, pastures, cattle pens, and large lawns.	Reported in the City (Figure 4).

**Table 3**  
**SPECIAL STATUS WILDLIFE SPECIES REPORTED WITHIN**  
**THE CITY OF IRVINE OR THE REGION**

Scientific Name	Common Name	Status	Habitat Description	Occurrence Info
<i>Aimophila ruficeps canescens</i>	Southern California rufous-crowned sparrow	WL Covered	Coastal sage scrub, coastal bluff scrub, low-growing chaparral	Reported in the City (Figure 4).
<i>Ammodramus savannarum</i>	Grasshopper sparrow	CSC	Grasslands, prairies, hayfields, and open pastures with little to no scrub cover and often with some bare ground	Reported in the City (Figure 4).
<i>Aquila chrysaetos</i>	golden eagle	CFP, WL Covered	Requires vast foraging areas in grassland, broken chaparral, or sage scrub. Nests on cliffs and boulders.	May not occur within the City because of limited potential habitat.
<i>Athene cunicularia</i>	Burrowing owl	BCC CSC	Grassland, agricultural land, coastal dunes	Reported in the City (Figure 4).
<i>Buteo lineatus</i>	Red-shouldered hawk	Covered	Riparian woodland	May occur within the City because suitable habitat may be present.
<i>Buteo regalis</i>	Ferruginous hawk	BCC WL	Winter resident of grassland and agricultural areas in southwestern California	Reported in the City (Figure 4).
<i>Campylorhynchus brunneicapillus sandiegensis</i> (San Diego and Orange counties only)	Coastal cactus wren	BCC CSC Covered	Coastal sage scrub and chaparral plant communities with substantial cacti ( <i>Opuntia</i> spp.) stands	Reported in the City (Figure 4).
<i>Charadrius alexandrinus nivosus</i>	Western snowy plover	FT, BCC CSC	Breeds primarily on coastal beaches from southern Washington to southern Baja California, Mexico. The Pacific coast population breeds above the high tide line on coastal beaches, sand spits, dune-backed beaches, sparsely-vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries.	May occur within the City because potential habitat may be present.
<i>Circus hudsonius</i>	Northern harrier	CSC Covered	Open habitats, such as grasslands and fields, as well as marshes.	May occur within the City because suitable habitat may be present.
<i>Coccyzus americanus occidentalis</i>	western yellow-billed cuckoo	FT, BCC SE	Extensive riparian woodlands	May not occur within the City because of limited or lacking potential habitat.
<i>Elanus leucurus</i>	white-tailed kite	CFP	Nests in riparian woodland, oaks, sycamores and forages in open, grassy areas	Reported in the City (Figure 4).

**Table 3  
SPECIAL STATUS WILDLIFE SPECIES REPORTED WITHIN  
THE CITY OF IRVINE OR THE REGION**

Scientific Name	Common Name	Status	Habitat Description	Occurrence Info
<i>Empidonax traillii extimus</i>	southwestern willow flycatcher	FE SE Covered	Nests in extensive willow-dominated riparian forests and woodlands, occasionally oak woodlands	May not occur within the City because of limited or lacking potential habitat.
<i>Eremophila alpestris actia</i>	California horned lark		Short vegetation or bare ground and low-growing or fallow agricultural fields	Reported in the City (Figure 4).
<i>Falco peregrinus anatum</i>	American peregrine falcon	BCC CFP Covered	Nests in open landscapes with cliffs or tall man-made structures. Found along coastlines, shorelines, etc. where shorebird or rock pigeon prey occurs.	Reported just outside the City limits (Figure 4).
<i>Icteria virens</i>	Yellow-breasted chat	CSC	Dense riparian woodland	Reported in the City (Figure 4).
<i>Ixobrychus exilis</i>	Least bittern	BCC CSC	Dense marshes	May occur within the City because suitable habitat may be present.
<i>Lanius ludovicianus</i>	loggerhead shrike	BCC CSC	Open-canopied valley foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, pinyon-juniper, juniper, desert riparian, and Joshua tree woodland habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches	May occur within the City because potential habitat may be present.
<i>Laterallus jamaicensis coturniculus</i>	California black rail	BCC ST, CFP	Salt marshes, freshwater marshes, and wet meadows	May occur within the City because suitable habitat may be present.
<i>Passerculus sandwichensis beldingi</i>	Belding's savannah sparrow	SE	Coastal salt marsh	May occur within the City because suitable habitat may be present.
<i>Poliptila californica californica</i>	coastal California gnatcatcher	FT CSC Covered	Coastal sage scrub, maritime succulent scrub.	Reported in the City (Figure 4).
<i>Pelecanus erythrorhynchos</i>	American white pelican	CSC	Breeds mainly on isolated islands in freshwater lakes or on ephemeral islands in shallow wetlands. Forages in marshes, along lake or river edges, and in wetlands.	May occur within the City because potential habitat may be present.
<i>Pelecanus occidentalis californicus</i>	California brown pelican	CFP	Nests from the Channel Islands along the Baja California coast and in the Gulf of California to coastal southern Mexico. Builds nests of sticks on the ground, typically on islands or offshore rocks. Between breeding seasons, wanders along the west coast.	May not occur within the City because of limited or lacking potential habitat.

**Table 3**  
**SPECIAL STATUS WILDLIFE SPECIES REPORTED WITHIN**  
**THE CITY OF IRVINE OR THE REGION**

Scientific Name	Common Name	Status	Habitat Description	Occurrence Info
<i>Phalacrocorax auritus</i>	Double-crested cormorant	WL	Lakes and ponds	May occur within the City because potential habitat may be present.
<i>Plegadis chihi</i>	White-faced ibis	WL	Freshwater wetlands and marshes but also may feed in flooded meadows, agricultural fields, and estuarine wetlands.	May occur within the City because potential habitat may be present.
<i>Rallus obsoletus levipes</i>	Light-footed Ridgway's rail	FE SE, CFP	Salt marshes and lagoons	Reported in the City (Figure 4).
<i>Rynchops niger</i>	Black skimmer	CSC	Mostly ocean beaches, tidewater. Favors coastal waters protected from open surf such as lagoons, estuaries, inlets, and sheltered bays. Occurs locally on inland lakes	May occur within the City because potential habitat may be present.
<i>Setophaga petechia</i>	yellow warbler	BCC CSC	Well-developed riparian habitats, often with mature willows, usually in close proximity to water along streams and meadows	May occur within the City because suitable habitat may be present.
<i>Sternula antillarum browni</i>	California least tern	FE SE, CFP	Nests are situated on barren to sparsely vegetated places near water, normally on sandy or gravelly substrates, and may appear along marine or estuarine shores in areas free from humans or predators. Wintering locations are unknown.	May not occur within the City because of limited or lacking potential habitat.
<i>Vireo bellii pusillus</i>	Least Bell's vireo	FE SE Covered	Dense, stratified canopy within willow-dominated woodland or scrub, <i>Baccharis</i> scrub, mixed oak/willow woodland, mesquite woodland, and elderberry scrub in riparian habitat.	Reported in the City (Figure 4).
<b>Mammals</b>				
<i>Antrozous pallidus</i>	pallid bat	CSC	Open desert scrub, grasslands, shrub lands, woodlands, and forests. Roosts in rock crevices, caves, mines, tree hollows, and buildings.	May occur within the City because suitable habitat may be present.
<i>Chaetodipus fallax fallax</i>	Northwestern San Diego pocket mouse	CSC	Sparse, disturbed coastal sage scrub or grasslands with sandy soils.	May occur within the City because suitable habitat may be present.
<i>Eumops perotis californicus</i>	western mastiff bat	CSC	Occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc.; roosts in crevices in vertical cliff faces, high buildings, trees, and tunnels, and travels widely when foraging.	Reported in the City (Figure 4).
<i>Lepus californicus bennettii</i>	San Diego black-tailed jackrabbit	CSC	Open areas of scrub, grasslands, agricultural fields with ample grasses and forbs.	May occur within the City because suitable habitat may be present.

**Table 3  
SPECIAL STATUS WILDLIFE SPECIES REPORTED WITHIN  
THE CITY OF IRVINE OR THE REGION**

Scientific Name	Common Name	Status	Habitat Description	Occurrence Info
<i>Neotoma lepida intermedia</i>	San Diego desert woodrat	CSC Covered	Coastal sage scrub and chaparral. Prefers rock outcrops.	Reported in the City (Figure 4).
<i>Perognathus longimembris pacificus</i>	Pacific pocket mouse	FE CSC	Fine-grained, sandy or gravelly substrates in coastal strand, coastal dunes, river alluvium, and coastal sage scrub growing on marine terraces. Nearly all historic observations of are within 4 km (approximately 2.48 miles) of the Pacific coast, with a few as far as 6 km (approximately 3.72 miles). Currently known only from Dana Point Headlands in Orange County, California and three locations on Marine Corps Base Camp Pendleton in San Diego County (Spencer 2005).	May not occur within the City because it is largely too far inland.
<i>Sorex ornatus salicornicus</i>	Southern California saltmarsh shrew	CSC	Salt marsh	May occur within the City because suitable habitat may be present.
<i>Taxidea taxus</i>	American badger	CSC	Drier, open stages of shrub steppes, agricultural fields, open woodland forests, and large grass and sagebrush meadows and valleys with friable soils.	May occur within the City because suitable habitat may be present.
Status: FE=Federal endangered; FT=Federal threatened; BCC=Birds of Conservation Concern; SE=State endangered; ST=State threatened; CFP=California Fully Protected; CSC=California Species of Special Concern; WL=CDFW Watch List; Covered = Covered under the NCCP/HCP				

### 3.3.4 Wildlife Movement Corridors

Wildlife corridors are essential to maintain populations of healthy and genetically diverse plant and wildlife species. At a minimum, wildlife corridors promote colonization of habitat and genetic variability for both plant and wildlife species by connecting fragments of habitat that are separated by otherwise foreign or inhospitable habitats. Because the isolation of plant and wildlife populations can have many harmful effects on local and regional species' populations and may contribute significantly to local species extinctions, wildlife corridors are important to sustain individual species distributions within these habitat fragments. Studies have concluded that many wildlife species would not likely persist in these habitat fragments over time because isolation through fragmentation would prohibit the infusion of new individuals and genetic information into the population (Harris and Gallagher 1989). While the debate over the value of corridors has been extensive (Noss 1987, Beier and Loe 1992, Beier and Noss 1998, Haddad et al. 2002, Beier and Noss 2000), most leading wildlife corridor biologists agree that, if corridors are used in appropriate situations and designed properly, they can be useful tools in conservation.



Wildlife corridors are considered sensitive by local, State, and federal resource and conservation agencies because these corridors allow wildlife to move between adjoining open space areas that are becoming increasingly isolated as open space becomes fragmented from urbanization, rugged terrain, and/or changes in vegetation (Beier and Loe 1992). In southern California, habitat fragmentation is one of the main concerns for the maintenance of healthy wildlife populations because natural areas are often scarce and maintaining connectivity between these habitats is perhaps one of the best feasible options for preventing localized extinctions and enhancing biodiversity (Penrod et al. 2001). In addition, roadway mortality must be considered when evaluating the importance of maintaining habitat connectivity and providing well-designed wildlife crossings (e.g., over/underpasses). If animals are inclined to move between habitat patches, a narrow road or even a wider highway isn't an absolute barrier. However, if these animals choose to cross these roadways, the likelihood of mortality increases and potentially could depress regional species' populations if these failed crossing attempts become a common occurrence.

As explained in Section 3.1.3 of this report, the Irvine Open Space Initiative created the framework to preserve large, contiguous open space areas for conservation and open space as phased master-planned growth occurred in other areas of the City. The Irvine Open Space Preserve, as it now is known, protects more than 93,000 acres of land from the "mountains to the sea," linking the Cleveland National Forest, San Joaquin Wildlife Sanctuary, Laguna Coast Wilderness Park, and other resources.

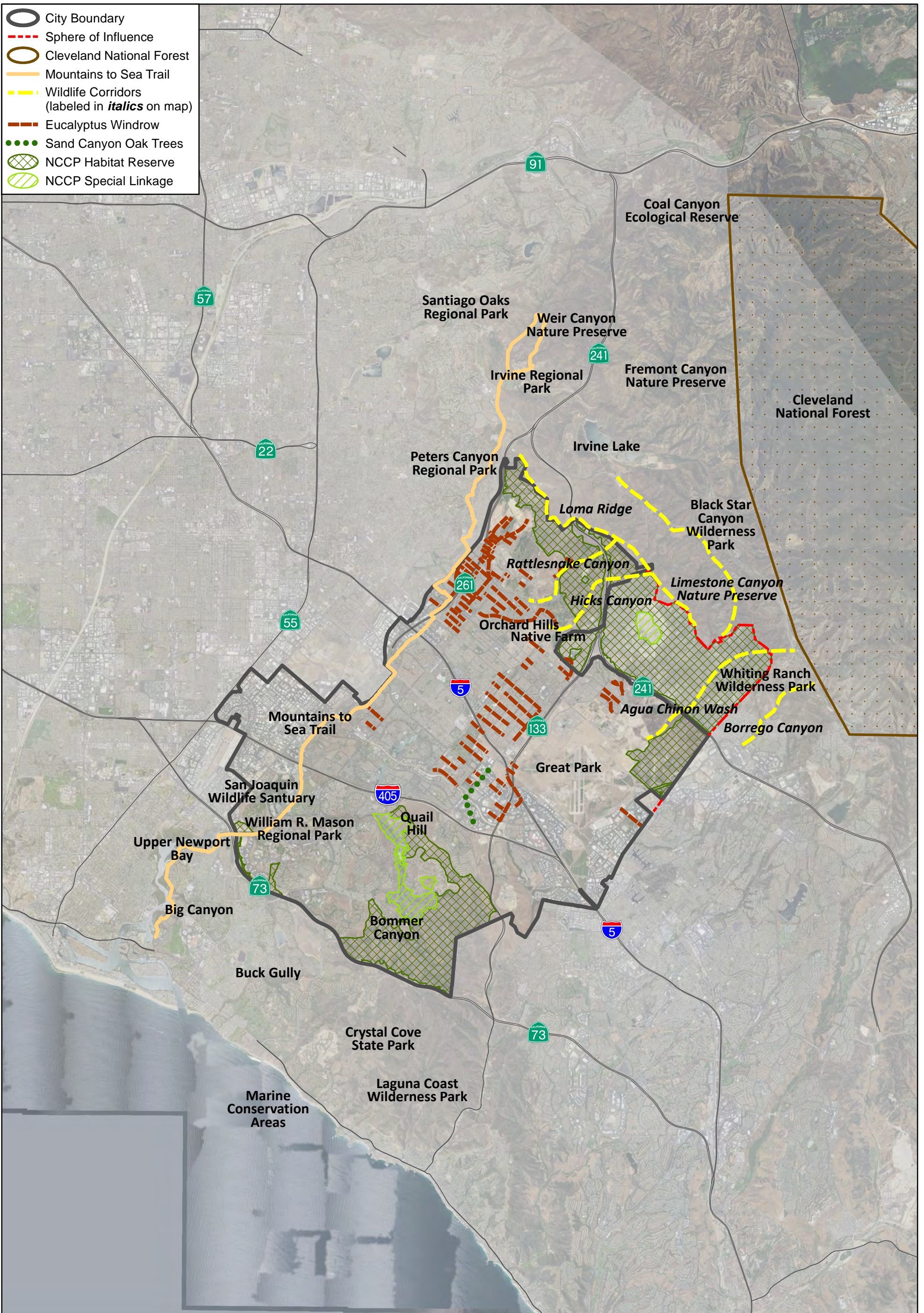
The City has committed to protect and manage the Irvine Open Space Preserve consistent with the NCCP. Of the NCCP/HCP acres in Irvine, 10,587 are designated for the NCCP habitat reserve system, and 813 acres are non-reserve lands called special linkages. The special linkages contain biological value that enhance connectivity between elements of the larger reserve system. The City's portion of the NCCP habitat reserve system and the NCCP special linkages in the City are shown on Figure 5.

Irvine has several wildlife corridors—Hicks Canyon, Rattlesnake Canyon, Loma Ridge, Limestone Canyon, and upper Borrego Canyon form wildlife corridors that stretch to the Cleveland National Forest. Wildlife corridors are also preserved along the Eastern Transportation Corridor at Agua Chinon and the SR-241/133 interchange (Figure 5).

Historically, a wildlife corridor also connected lands in Irvine's northern sphere (e.g., Santiago Hills) to coastal lands along the Pacific Ocean. In 2013, the Irvine City Council adopted the Irvine Wildlife Corridor Plan, taking a step toward creating a wildlife corridor that would link protected lands in the Laguna Coast to wilderness areas that include the Cleveland National Forest, Whiting Ranch, and Limestone Canyon.

### **3.3.5 Wetland and Riparian Resources**

Wetland and riparian resources within the City are considered sensitive biological resources and are regulated by the Corps, CDFW, and/or RWQCB pursuant to several federal and State regulations. A description of each agency's jurisdiction is provided in this section, and the potential wetland and riparian resources within the City are discussed as well.

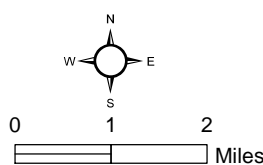


Source: City of Irvine General Plan Update;  
USDA NAIP 2016; Esri

**Figure 5**

**Biological Resources  
and NCCP Areas**

BIOLOGICAL TECHNICAL REPORT  
CITY OF IRVINE  
GENERAL PLAN UPDATE





## **United States Army Corps of Engineers Jurisdiction**

In accordance with Section 404 of the CWA, the Corps has regulatory authority over the discharge of dredged or fill material into waters of the U.S. (including non-wetland Waters of the U.S. and wetlands). Federal jurisdiction is dependent on a demonstrated nexus between the subject water feature and navigable waters or interstate commerce.

The Corps and EPA define wetlands as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions" (Corps 1987 and 2008). To be considered a Corps jurisdictional wetland under Section 404 of the CWA, an area must possess three wetland characteristics: 1) hydrophytic vegetation, 2) hydric soils, and 3) wetland hydrology. The definition of a wetland includes the phrase "under normal circumstances" because there are situations in which the vegetation of a wetland has been removed or altered as a result of recent natural event or human activities (Corps 1987). The terms "atypical situation" and "problem area" are used to describe wetlands that exhibit these conditions. An atypical situation refers to a wetland area in which one or more wetland parameters (vegetation, soil, and/or hydrology) have been sufficiently altered by recent human activities or natural events to preclude the presence of wetland indicators of the parameter (Corps 1987 and 2008). A problem area refers to a wetland area in which wetland indicators of one or more wetland parameters may be periodically lacking due to normal seasonal or annual variations in environmental conditions that result from causes other than human activities or catastrophic natural events (e.g., seasonal wetlands, wetlands on drumlins, prairie potholes, and vegetated flats; Corps 1987 and 2008). Although atypical situations and problem areas may lack one or more wetland parameters, these areas may still be considered wetlands if background information on the previous condition of the area and field observations indicate that the missing wetland criteria were present before the disturbance and would occur at the site under normal circumstances.

The Corps defines non-wetland Waters of the U.S. as drainages, or portions thereof, which have strong hydrology indicators such as the presence of seasonal flows and an ordinary high watermark (OHWM). An OHWM is defined as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as [a] clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" (Corps 1987 and 2008). Areas delineated as non-wetland waters of the U.S. may lack hydrophytic vegetation or hydric soil characteristics. Hydrophytic vegetation may be absent for various reasons such as the lack of sufficient water flow to support hydrophytic vegetation or the influence of frequent scouring due to rapid water flow. Hydric soil indicators may be missing for various reasons such as the lack of sufficient water or the presence of steep topography that precludes ponding and prohibits the development of hydric soils. Non-wetland Waters of the U.S. are delineated by the lateral and upstream/downstream extent of the OHWM of the particular drainage or depression.

The Corps developed the Special Area Management Plan for the San Diego Creek Watershed (SAMP; Corps 2008b rev. 2009) with the CDFW to integrate a watershed approach to address anticipated regulated activities and aquatic resource conservation needs. The SAMP process was initiated in 1998 as a coordinated process with local landowner/managers and State and federal agencies to consider known projects and anticipated regulated activities resulting in a watershed approach to issuing CWA permits and SAAs.

The SAMP reflects a front-end analysis of the watershed's aquatic resources and consideration of how regulated activities may affect those resources. The SAMP allows the Corps and CDFW to target staff review and evaluation time towards regulated activities and projects with greater potential to result in adverse impacts to the overall integrity of aquatic resources in the watershed. Conversely, projects and regulated activities with minor impacts that affect low-integrity aquatic resources would undergo modified permitting procedures to improve efficiency. Low-integrity resources are those with low hydrology, water quality, and habitat integrity; little habitat value for threatened and/or endangered species; or low wildlife connectivity value. Regardless of value, the permanent loss of aquatic resources would require compensatory mitigation for unavoidable impacts.

### **California Department of Fish and Wildlife Jurisdiction**

In accordance with Sections 1600 to 1616 of the Fish and Game Code, the CDFW regulates activities that would divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. These sections discuss the process by which an individual, government agency, or public utility must notify the CDFW prior to any activity that would substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake. The CDFW regulates wetland areas only to the extent that those wetlands are part of a river, stream, or lake as defined by the CDFW. Following such notification, the CDFW must inform the individual, agency, or utility of the existence of any fish and wildlife resources that may be substantially adversely affected by the activity. The CDFW must also include a proposal called the Streambed Alteration Agreement for measures to protect fish and wildlife resources.

The CDFW exerts jurisdiction over all Waters of the State, such as streams and rivers (measured from bank to bank) and any "riparian" vegetation associated with the waters. Streams and rivers are defined by the presence of a channel bed and banks, and at least an intermittent flow of water. The term "riparian" vegetation refers to vegetation that occurs in and/or adjacent to a watercourse. Typical "riparian" vegetation includes willows, mule fat (*Baccharis salicifolia*), western sycamore (*Platanus racemosa*), Fremont cottonwoods (*Populus fremontii*), cattails, and other vegetation found in moist areas and typically associated with the banks of a stream or lake shoreline. CDFW jurisdictional areas are delineated by the outer edge of riparian vegetation or from the top of one channel bank to the top of the opposite channel bank, whichever is wider. Thus, defining the limits of the CDFW jurisdiction based on riparian habitat will include wetland areas and may include areas that do not meet the Corps criteria for soils and/or hydrology. In addition, the CDFW may take jurisdiction over isolated wetlands and streambeds in cases where the Corps may not. Therefore, the CDFW jurisdiction is typically equal to or greater than the Corps jurisdiction.

The CDFW developed the SAMP with the Corps to integrate a watershed approach to address anticipated regulated activities and aquatic resource conservation needs. See the SAMP discussion under the heading, *United States Army Corps of Engineers Jurisdiction*, above.

### **Regional Water Quality Control Board**

The RWQCB is the primary agency responsible for protecting water quality in California. The RWQCB regulates discharges to surface waters under Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act. The RWQCB's jurisdiction extends to all Waters of the State and to all Waters of the U.S. as considered jurisdictional by the Corps and CDFW. The RWQCB also regulates isolated wetlands, such as vernal pools, that are not regulated by the Corps. Section 401 of the CWA and the state Porter-Cologne Water Quality Control Act give the RWQCB the authority to regulate any proposed activity that may affect water quality. Water quality certification and/or a Report of Waste Discharge must be based upon a finding that the proposed discharge will comply with water quality standards.

### **Wetland and Riparian Resources in the City**

Potential jurisdictional wetland and riparian resources that occur within the City are based on data from the USGS National Hydrography Dataset (Figure 6) and the most current (2015) vegetation mapping for the City from the Nature Reserve of Orange County (Figure 3). All wetland and riparian resources must be protected according to federal, State, and local regulations. These potential jurisdictional resources in the City include streams/rivers, lakes/ponds, reservoirs, inundation areas, canals/ditches, and associated habitats (coast live oak woodland; estuarine, lacustrine, riverine; fresh emergent wetland; lacustrine; riverine; riverine, barren; saline emergent wetland; and valley foothill riparian). The major wetlands/waterways in the City include San Diego Creek, Peters Canyon Wash, and San Joaquin Wildlife Sanctuary.

San Diego Creek is a 16-mile-long waterway with its headwaters in the City of Laguna Woods that flows into Upper Newport Bay. The increased demand for housing and employment in Orange County has resulted in substantial land use changes from agriculture to urban development within the creek's watershed, especially over the last several decades. Agricultural uses, which began in the 19<sup>th</sup> century, had previously altered the watershed's natural conditions and hydrology, including increased runoff in Newport Bay and channelization of San Diego Creek (Corps 2008b rev 2009). According to the City (Storm Drainage Utilities), this waterbody is currently impaired by fecal coliform, indicator bacteria, nutrients, pesticides, sedimentation, selenium, and toxaphene.

Most of the creek has been converted to a concrete flood control channel, but it does provide aquatic and riparian habitats along its course and its tidal estuary near the San Joaquin Wildlife Sanctuary and Upper Newport Bay (Figure 3). Peters Canyon Wash is a tributary of San Diego Creek that is approximately 11.8 miles long, mostly channelized, and flows in a relatively straight course southwest from the Peters Canyon Reservoir near the Orange/Tustin border to its confluence with San Diego Creek near the Irvine Civic Center Plaza (Figure 3). According to the City (Storm Drainage Utilities), this wash is currently impaired by DDT, bacteria, pH, and toxaphene.

The San Joaquin Wildlife Sanctuary is a 300-acre constructed wetland in the floodplain of San Diego Creek just above its outlet to Upper Newport Bay. The site is owned by the Irvine Ranch

Water District; it was used for farmland in the 1950s and 1960s, and (prior to its reconstruction) as a duck hunting range. Original restoration of the wetlands began in 1988 and was completed in 2000. The site serves a dual purpose of removing nitrates from the creek's water and providing bird habitat. The Southern California Wetlands Recovery Project (2019), a partnership of public agencies, scientists, and local communities that work cooperatively to acquire and restore wetlands in coastal Southern California, has a plan to restore and enhance 120 acres of perennial marsh habitat in San Joaquin Marsh.

## **4.0 EVALUATION OF FUTURE ENVIRONMENTAL OPPORTUNITIES, CONSTRAINTS, AND MITIGATION MEASURES**

The City's opportunities to protect the natural environment within the City as the potential development constraints for future projects associated with the natural resources that could potentially occur are discussed in this section.

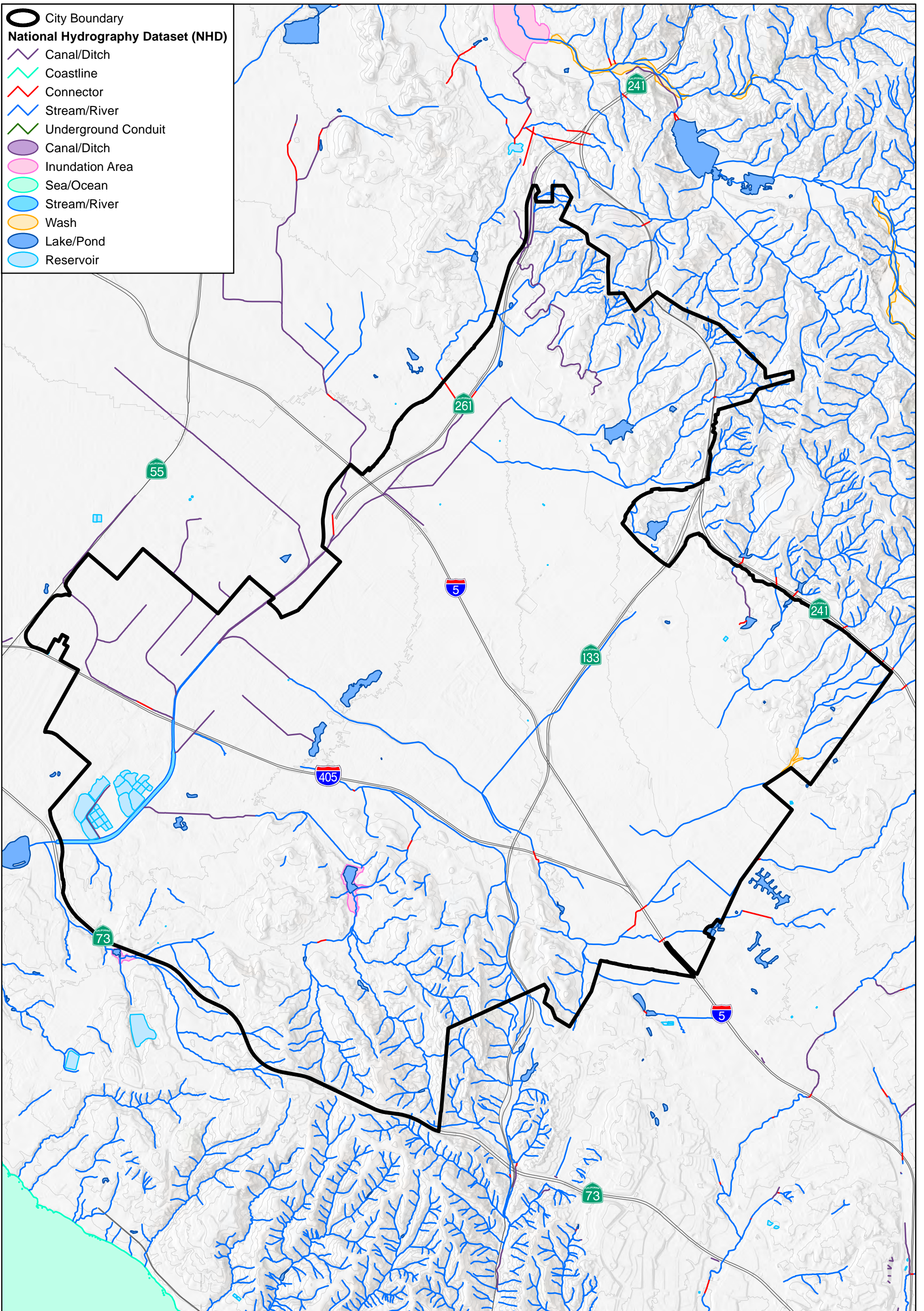
### **4.1 OPPORTUNITIES**

While much of Irvine's open space has been reserved or designated as special linkages (Figure 5), the potential still exists for the identification and acquisition of additional non-designated open space areas to provide preservation of biological resources, particularly NCCP/HCP-covered species, and active recreation opportunities such as walking, equestrian, or bike trails. The opportunity exists for the City to ensure that allowances are made through General Plan policies to encourage or require proposed development plans to allocate open space areas.

The large area in the City (and sphere of influence), as well as non-reserve areas containing species covered under the NCCP/HCP, will result in limitations on development, though some impact is anticipated under specific permitting and mitigation requirements already in the NCCP/HCP. The disposition and/or suitability of other open space areas remain uncertain; however, the special linkages that are slated for wildlife corridors in the vicinity of the formerly proposed El Toro National Wildlife Sanctuary to the San Joaquin Hills are being addressed by the Irvine Wildlife Corridor Plan (Glenn Lukos Associates, Inc. 2013). This Plan is to establish a wildlife corridor that provides opportunity for movement from Irvine Boulevard to Interstate 5 through the length of the MCAS El Toro base property for NCCP/HCP target species in a manner that allows demographic and genetic exchange between populations or subpopulations.

### **4.2 CONSTRAINTS AND COMPENSATORY MITIGATION MEASURES**

Local, State, and federal agencies regulate sensitive biological resources and require an assessment of their presence or potential presence to be conducted for each proposed project site. These assessments should be conducted for all sensitive vegetation communities and special status species that have the potential to occur within or adjacent to a proposed project site prior to the approval and implementation of that project. Because the information provided in this report is based solely on an analysis of existing literature and historical data for the region, and no surveys were conducted to prepare this report, future development projects will require a more refined evaluation of biological resources.

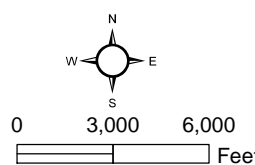


Source: USGS National Hydrography Dataset (NHD); Esri

**Figure 6**

**Hydrology and Water Features**

BIOLOGICAL TECHNICAL REPORT  
CITY OF IRVINE  
GENERAL PLAN UPDATE







Sensitive biological resources in the City include, but are probably not limited to, those addressed in this report. The City's environment is not static and may change over time as a result of development, fire, or other factors. In addition, vegetation communities may become sensitive and/or species may become listed in the future. For future proposed development projects, it is the responsibility of each Project Proponent to evaluate the known and potential sensitive biological resources within the proposed project area.

This section provides the City and future Project Proponents with guidelines to evaluate potential project-related impacts and design appropriate avoidance, minimization, and/or mitigation measures to assure impacts are reduced to below a level of significance as defined by CEQA. These measures are not intended to replace requirements outlined in the NCCP/HCP, General Plan, Municipal Code, and the SAMP.

#### **4.2.1 General Measures for Impact Assessments**

As part of the project approval process, each future proposed project should include an initial site assessment to determine if sensitive biological resources could be present within and/or adjacent to the proposed development project and whether the project site lies inside the NCCP/HCP Reserve System (including the Irvine Open Space Preserve of the Irvine Open Space Initiative) or Special Linkage Areas or whether it lies outside.

If no sensitive biological resources have a potential to occur within and/or adjacent to the proposed project, the City may approve the proposed project to proceed without further biological resource analyses.

If sensitive biological resources have potential to occur, the following general biological mitigation measures would apply.

**Bio-1:** Applicants for future development projects shall include a biological resources survey. The survey shall be conducted by a qualified biologist. The biological resources survey shall include, but not be limited to:

- A search of available literature and biological databases, such as CNDDDB to determine sensitive biological resources that have been reported from the proposed project vicinity.
- Mapping vegetation communities on the proposed project site.
- A general assessment and mapping of all potential jurisdictional resources (wetlands and riparian habitats).
- Evaluating wildlife movement corridors in the vicinity of the proposed project site.

**Bio 2:** If the proposed development project site supports vegetation communities that may provide habitat for special status plant or animal species, a focused habitat assessment shall be conducted by a qualified biologist to determine the potential for special status plant and/or animal species to occur within or adjacent to the proposed development project area.

**Bio-3:** If one or more special status species has the potential to occur within the proposed development project area, focused species surveys shall be conducted to determine the presence/absence of these species to adequately evaluate potential direct and/or indirect impacts to these species.

**Bio-4:** If construction activities are not initiated immediately after focused surveys have been completed, additional pre-construction special status species surveys may be required to assure impacts are avoided or minimized to the extent feasible. If pre-construction activities are required, a qualified biologist would perform these surveys as required for each special status species that is known to occur or has a potential to occur within or adjacent to the proposed development project area.

**Bio-5:** The results of the biological survey shall be presented in a biological survey letter report for proposed development projects with no significant impacts, or in a biological technical report for proposed development projects with significant impacts that require mitigation to reduce the impacts to below a level of significance.

**Bio-6:** If sensitive biological resources are identified within or adjacent to the proposed development project area, the construction limits shall be clearly flagged to ensure impacts to sensitive biological resources are avoided or minimized to the extent feasible. Prior to implementing construction activities, a qualified biologist shall verify that the flagging clearly delineates the construction limits and that sensitive resources to be avoided.

**Bio-7:** If sensitive biological resources are known to occur within or adjacent to the proposed development project area, a project-specific contractor training program shall be developed and implemented to educate project contractors on the sensitive biological resources within and adjacent to the proposed development project area and measures being implemented to avoid and/or minimize impacts to these species. A qualified biologist shall develop and implement the contractor training program.

**Bio-8:** If sensitive biological resources are present within or adjacent to the proposed development project area and impacts may occur from implementation of construction activities, a qualified biological monitor may be required during a portion or all of the construction activities to ensure impacts to the sensitive biological resources are avoided or minimized to the extent feasible. The specific biological monitoring requirements shall be evaluated on a project-by-project basis. The qualified biological monitor shall be approved by the City on a project by project basis based on applicable experience with the sensitive biological resources that may be impacted by the proposed development project activities.

**Bio-9:** If birds that are protected by the MBTA are identified within or adjacent to the proposed development project area, the proposed development project may result in direct or indirect impacts to these species, especially during breeding season. If impacts cannot be avoided, potential impacts during the breeding season may be considered significant depending on the species and the extent of the impact. To ensure that active nests are not impacted, pre-construction general nesting bird surveys shall be conducted within all suitable nesting habitat that may be impacted by active construction during the general avian breeding season (February 1 through August 31). The pre-construction surveys shall be conducted no more than 7 days prior to initiation of construction. If no active avian nests are identified within the proposed development project area or within a 300-foot buffer of the proposed development project area, no further mitigation is necessary. If active nests of avian species protected by the MBTA are detected within the proposed development project area or within a 300-foot buffer of the proposed development project area, construction shall be halted until the young have fledged, until a qualified biologist has determined the nest is

inactive, or until appropriate mitigation measures that respond to the specific situation have been developed and implemented in consultation with the regulatory agencies.

#### **4.2.2 Measures for Impacts to Jurisdictional Areas**

Impacts to jurisdictional areas could be considered significant under CEQA depending on the extent of the proposed impact. Survey requirements and mitigation measures for unavoidable impacts to jurisdictional areas resulting from future proposed development projects are discussed below.

**Bio-10:** If a proposed project has the potential to affect jurisdictional resources, a qualified biologist shall conduct a jurisdictional delineation following the methods outlined in the 1987 Corps Wetland Delineation Manual (Corps 1987) and the Regional Supplement to the Corps Wetland Delineation Manual: Arid West Region (Corps 2008a) to map the extent of wetlands and non-wetland waters, determine jurisdiction, and assess potential impacts. The results of the delineation shall be presented in a wetland delineation letter report and shall be incorporated into the CEQA document(s) required for approval and permitting of the proposed project.

**Bio-11:** If a proposed project would impact jurisdictional features, permits and authorizations shall be obtained from the Corps, CDFW, and/or RWQCB. The regulatory agency authorization(s) would include impact avoidance and minimization measures as well as mitigation measures for unavoidable impacts. Specific avoidance, minimization, and mitigation measures for impacts to jurisdictional resources shall be determined through discussions with the regulatory agencies during the proposed project permitting process and may include monetary contributions to a mitigation bank or habitat creation, restoration, and/or enhancement.

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## **APPENDIX D**

### Paleontological and Cultural Resources Assessment Report for the City of Irvine General Plan Update





**PALEONTOLOGICAL AND CULTURAL  
RESOURCES ASSESSMENT FOR THE  
CITY OF IRVINE GENERAL PLAN UPDATE,  
CITY OF IRVINE, ORANGE COUNTY, CALIFORNIA**

**Prepared for:**  
City of Irvine

And

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**February 2024**

***Cogstone Project Number:*** 5300

***Type of Study:*** Paleontological and Cultural Resources Assessment

***USGS 7.5' Quadrangles:*** Black Star Canyon, El Toro, Laguna Beach, Orange, San Juan Capistrano, Tustin

***Area:*** City boundaries 42,175.58 acres; Sphere of Influence 4,830.83 acres

***Keywords:*** Paleontological and Cultural Resources Assessment, General Plan update, Orange County

**TABLE OF CONTENTS**

**SUMMARY OF FINDINGS ..... IV**

**INTRODUCTION ..... 1**

    PURPOSE OF STUDY ..... 1

    PROJECT LOCATION AND DESCRIPTION ..... 1

    PROJECT PERSONNEL ..... 5

**REGULATORY ENVIRONMENT ..... 7**

    CALIFORNIA ENVIRONMENTAL QUALITY ACT ..... 7

    CALIFORNIA REGISTER OF HISTORICAL RESOURCES ..... 8

    PUBLIC RESOURCES CODE SECTION ..... 9

    NATIVE AMERICAN HUMAN REMAINS ..... 9

    CALIFORNIA ADMINISTRATIVE CODE, TITLE 14, SECTION 4307 ..... 10

    CITY GUIDELINES ..... 10

    DEFINITION OF SIGNIFICANCE FOR PALEONTOLOGICAL RESOURCES ..... 11

**BACKGROUND ..... 12**

    GEOLOGICAL SETTING ..... 12

    PALEONTOLOGICAL SETTING ..... 12

    STRATIGRAPHY ..... 12

    ETHNOGRAPHY ..... 24

    PREHISTORIC SETTING ..... 26

    HISTORIC SETTING ..... 30

**RECORD SEARCHES AND LITERATURE REVIEW ..... 37**

    PALEONTOLOGICAL ..... 37

    CULTURAL ..... 39

**SENSITIVITY ..... 41**

    PALEONTOLOGICAL SENSITIVITY ..... 41

    ARCHAEOLOGICAL SENSITIVITY ..... 44

    HISTORICAL SENSITIVITY ..... 44

**MITIGATION MEASURES ..... 47**

**REFERENCES CITED ..... 49**

**APPENDIX A. QUALIFICATIONS ..... 57**

**APPENDIX B. PALEONTOLOGICAL RECORDS SEARCH RESULTS ..... 63**

**APPENDIX C. FOSSIL LIST ..... 69**

**APPENDIX D. CULTURAL RESOURCE STUDIES ..... 84**

**APPENDIX E. LIST OF KNOWN SITE RECORDS ..... 131**

**LIST OF FIGURES**

**FIGURE 1. PROJECT VICINITY MAP .....2**  
**FIGURE 2A. GEOLOGY MAP, 1 OF 4.....14**  
**FIGURE 2B. GEOLOGY MAP, 2 OF 4.....15**  
**FIGURE 2C. GEOLOGY MAP, 3 OF 4.....16**  
**FIGURE 2D. GEOLOGY MAP, 4 OF 4.....17**  
**FIGURE 3. TRIBAL TERRITORY MAP.....25**  
**FIGURE 4. MAP OF LAND GRANTS.....33**  
**FIGURE 5. 1902 CORONA TOPOGRAPHIC MAP .....34**  
**FIGURE 6. PALEONTOLOGICAL SENSITIVITY OF THE CITY.....43**  
**FIGURE 7. PREHISTORIC SENSITIVITY .....45**  
**FIGURE 8. HISTORIC RESOURCES SENSITIVITY.....46**

**LIST OF TABLES**

**TABLE 1. CITY OF IRVINE CADASTRAL INFORMATION .....1**  
**TABLE 2. GEOLOGIC UNITS WITHIN THE CITY FROM YOUNGEST TO OLDEST .....13**  
**TABLE 3. CULTURE CHANGE CHRONOLOGY.....27**  
**TABLE 4. CULTURAL RESOURCES WITHIN THE CITY OF IRVINE BY TYPE .....39**  
**TABLE 5. ADDITIONAL SOURCES CONSULTED.....40**  
**TABLE 6. PALEONTOLOGICAL SENSITIVITY RANKINGS.....42**

## **SUMMARY OF FINDINGS**

The objective of this study is to review and summarize available information regarding known paleontological, archaeological, and historical resources within the boundaries of the City of Irvine (City) to support the update of the City's General Plan. The update will provide long-term policy direction and communicate the vision, values, and goals for the City's physical development and overall quality of life. The City of Irvine 2045 General Plan will serve to identify areas of opportunity and provide options to enhance development in key focus areas of the City.

The City has a complicated paleontological history which began at the age of dinosaurs about 100.5 million years (Ma) ago. The past 100.5 Ma has seen the City transition back and forth several times from marine to terrestrial deposits. A search for paleontological records was completed by the Natural History Museum of Los Angeles County and in the literature. Numerous fossils have been recovered in the City and an updated sensitivity map is provided.

The Vaqueros, Sespe-Vaqueros, Sespe, Monterey, Puente and Capistrano Formations are assigned a high paleontological sensitivity. Formations assigned a moderate sensitivity include the Williams Formation Pleasants Sandstone Member, the Santiago Formation, the Topanga Group, the undifferentiated Puente Formation, and the Pliocene Niguel Formation. A programmatic mitigation measure is recommended.

Cogstone conducted a search of the California Historic Resources Inventory System at the South Central Coastal Information Center on September 24 and 25, 2018. Results of the record search indicate that 647 previous cultural resources studies have been completed within the boundaries of the City. The records search also determined 379 previously recorded cultural resources are located within the City boundaries; over half are prehistoric resources.

Prehistoric sites/Tribal Cultural Resources are most abundant in the San Joaquin Marsh area and San Joaquin Hills, both south of Interstate 405. Sites are also abundant along what were, at the time, permanent water sources such as creeks and springs northeast of Irvine Blvd. Only ten sites are known on the plain between I-405 and Irvine Blvd. On this basis the areas south of I-405 and north of Irvine Blvd. are ranked as highly sensitive and the plain in between as less sensitive. An updated sensitivity map is provided. Three programmatic mitigation measures are recommended.

## INTRODUCTION

### PURPOSE OF STUDY

The objective of this study is to review and summarize available information regarding known paleontological, archaeological, and historical resources within the boundaries of the City of Irvine (City) to support an update of the City’s General Plan. The City is located in southern Orange County and covers 42,175.58 acres with an additional Sphere of Influence (SOI) of 4,830.83 acres (Figure 1).

### PROJECT LOCATION AND DESCRIPTION

Located in Orange County, the City of Irvine is located approximately two miles inland east of the Pacific Ocean (refer to Figure 1). The City is bounded by Tustin to the north with a small portion bordering Orange County unincorporated land by SR 261, Santa Ana to the northwest, Lake Forest to the East, Laguna Hills and Laguna Woods to the southeast, Costa Mesa to the west, and Newport Beach to the southwest. The City of Irvine is located primarily within the Tustin and El Toro United States Geographical Survey (USGS) 7.5-minute topographic maps but also includes portions of the Black Star Canyon, Laguna Beach, Orange, and San Juan Capistrano USGS 7.5’-minute topographic maps (Table 1).

**Table 1. City of Irvine Cadastral Information**

USGS 7.5’ Topographic Quad(s)	Township	Range	Section(s)
Orange	4S	8W	31
	5S	8W	6, 7
		9W	12
Black Star Canyon	5S	8W	5, 6, 7, 8
Tustin	5S	8W	7, 18, 19, 30, 31
		9W	12, 13, 14, 22, 23, 24, 25, 26, 27, 29, 30, 31, 32, 33, 34, 35, 36
	6S	9W	1, 2, 3, 4, 5,6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28
El Toro	5S	8W	7, 8, 9, 15, 16, 17, 18, 19, 20, 21, 28, 29, 30, 31, 32, 33, 34, 35
	6S	8W	2, 3, 4, 5,6, 7, 8, 9, 10, 11, 15, 16, 17, 18, 19, 20, 21, 29, 30
Laguna Beach	6S	8W	25, 26, 27, 28, 29, 33, 34, 35, 36
		9W	25
San Juan Capistrano	6S	8W	29, 30

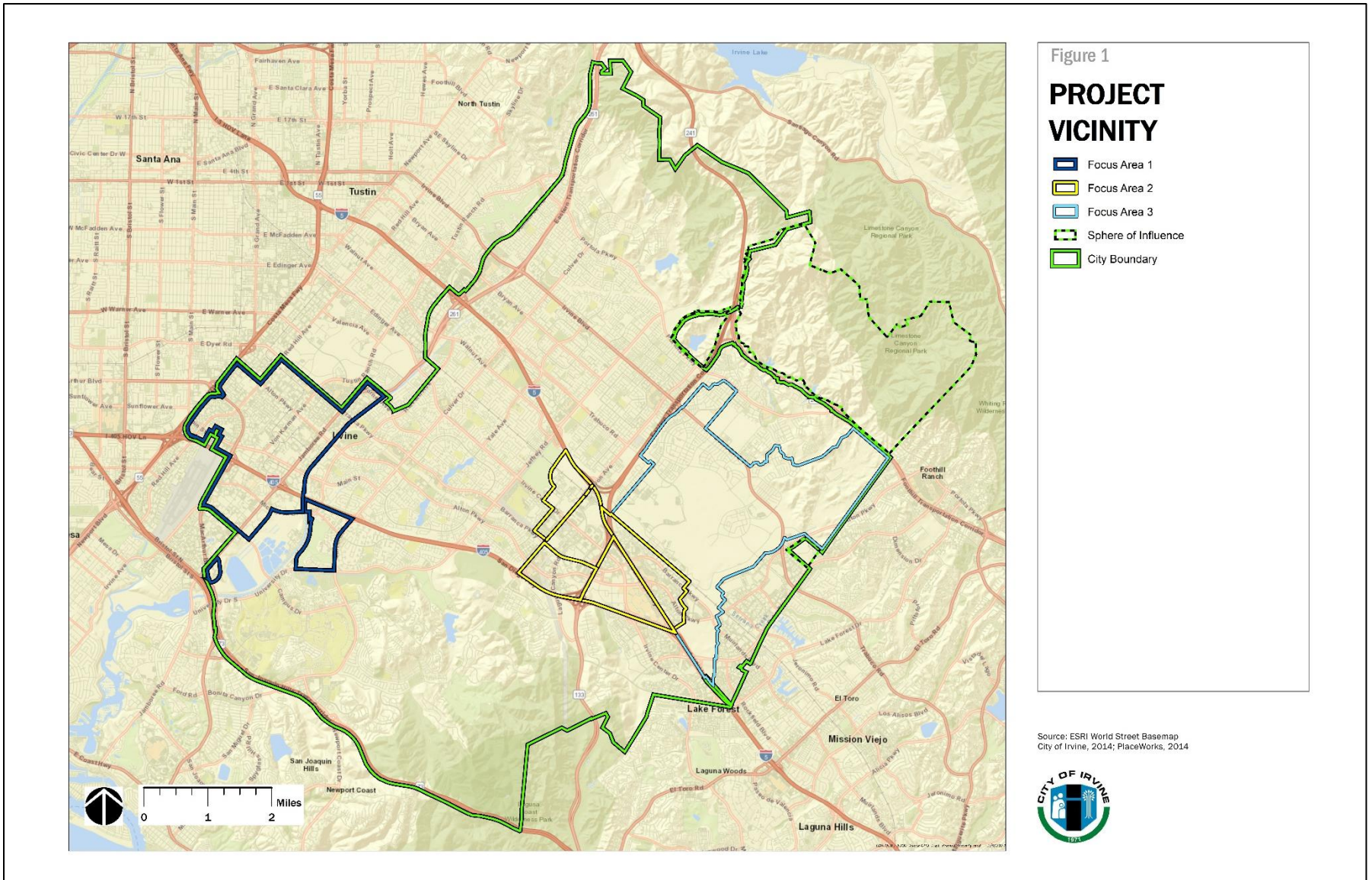


Figure 1. Project Vicinity Map

Incorporated in 1971, the City of Irvine adopted the first General Plan in December 1973. The City's General Plan was last comprehensively updated in 2000 and has been updated over the years to address necessary General Plan amendments. Since 2000, the City has continued to grow and the community has matured and evolved. As Irvine moves forward, the focus of the General Plan objectives and policies must be reexamined to ensure that the high quality-of-life factors that make Irvine exceptional are maintained and enhanced for residents, businesses, and visitors into the future. The update will provide long-term policy direction and communicate the vision, values, and goals for the City's physical development and overall quality of life. The City of Irvine 2045 General Plan will serve to identify areas of opportunity and provide options to enhance development in key focus areas of the City.

In addition, with the adoption of the certified 2021-2029 Housing Element in May 2022, the City is required to update the appropriate elements of the General Plan to accommodate the residential site inventory from the 2021-2029 Housing Element.

### **Project Buildout**

The City is preparing the 2045 Focused General Plan Update that will serve as the long-range vision of the City for the next 20 to 25 years. The City as the lead agency has determined that the project will require the preparation of a Program Environmental Impact Report (Program EIR) in compliance with the California Environmental Quality Act (CEQA; California Public Resources Code, Section 21000 et seq.), and Title 14 of the California Code of Regulations (CCR).

Consistent with the 2021-2029 Housing Element, the Project would update the General Plan land use element to support the City's Regional Housing Needs Assessment (RHNA) of 23,610 units. To ensure consistency with State housing statutes, including no-net loss and affirmatively furthering fair housing requirements, the 2021-2029 Housing Element identified adequate sites to accommodate 57,656 new residential units. However, the City's current General Plan has a significant amount of unbuilt non-residential square footage available throughout the planning areas identified in the 2021-2029 Housing Element site inventory that would be available for the potential conversion to residential uses. As a result of the likely conversion of non-residential uses to residential uses, the City would need to add 15,019 fewer units under the Reduced Project Alternative (the Preferred Project) compared to the Proposed Project (the Conservative Alternative). In total, the Reduced Project Alternative would add 42,637 new units to the General Plan as compared to the 57,656 units proposed as part of the Project. The Project would accommodate the City's RHNA requirement for new residential units and implement the 2021-2029 Housing Element through the introduction of additional residential and/or mixed-use development throughout the City using overlay zones and/or master plans to allow greater flexibility for property owners and developers. The overlays would promote higher density residential and mixed-use in three focus areas, targeted retail centers, conversion of hotel/motel,

and on religious and school sites. It is anticipated that the majority of the future residential growth would occur in the three focus areas that are most suited for new growth and development as they are located near existing job centers and are along major travel corridors with access to existing and future public transit opportunities. Focus Area 1 is the Irvine Business Complex (Planning Area [PA] 19, 36); Focus Area 2 is the Spectrum area (PAs 13, 31, 32, and 33); and Focus Area 3 is Great Park Neighborhoods (PA 51), each of which is shown in Figure 1.

***Focus Area 1 – Greater Irvine Business Complex Area:*** Planning Area 36 (Irvine Business Complex) and Planning Area 19 (Rancho San Joaquin): Focus Area 1 includes expanding a residential and/or mixed-use overlay to the entire Irvine Business Complex (IBC) and the specific sites identified in the 2021-2029 Housing Element site inventory located in Rancho San Joaquin. Over the past twenty years, the IBC has transitioned from predominantly non-residential uses to a mixed-use area that is currently governed by the 2007 IBC Vision Plan. Under the existing General Plan, the IBC has a maximum of 15,000 units. The IBC continues to be one of the two employment centers located within the City and remains an opportunity area for high density residential. The IBC is connected to the Tustin Transportation Center (Metrolink and OCTA transit service) through the iShuttle and has direct access to Interstate 405, State Route 73, and State Route 55. The General Plan Update proposes a new residential overlay and/or specific plan that will increase the total number of residential permitted in the Greater Irvine Business Complex Area by an additional 15,000 units.

***Focus Area 2 - Greater Spectrum Area:*** Planning Area 13 (Irvine Spectrum 4), Planning Area 31 (Irvine Spectrum 6), Planning Area 32 (Irvine Spectrum 3), and Planning Area 33 (Irvine Spectrum Center): The Greater Spectrum Area incorporates three non-residential planning areas (13, 31, and 32) that are located adjacent to the Irvine Spectrum Center area, are emerging employment centers, are located near the Irvine Transportation Center (ITC – Metrolink, Amtrak, and OCTA transit service), and with the introduction of a residential overlay and/or specific plan could transition to a network of micro-villages or residential nodes, connected by a variety of multi-modal and complete street strategies that provide new opportunities for residents and businesses in Irvine. The General Plan Update proposes a new residential overlay and/or specific plan that will introduce a total number of 26,607 residential units to the Greater Spectrum Area.

***Focus Area 3 – Great Park Neighborhood Transit Village:*** Planning Area 51 (Great Park Neighborhood): The Great Park Neighborhoods is an existing mixed-use planning area that features a mix of residential products at varying densities surrounding the Irvine Great Park. There are approximately 1,900 units remaining in the existing General Plan intensity, but a significant amount of the planning area remains vacant with no additional residential intensity. The proposed General Plan Update will increase the number of residential units permitted in the



Great Park with a focus on higher density product located near or adjacent to the Irvine Transportation Center. The Great Park Neighborhood Transit Village area will have direct access to Focus Area 2, the Greater Spectrum Area through a network of proposed multi-modal improvements. The General Plan Update will increase the residential intensity in Planning Area 51 by an additional 5,252 residential units.

The remaining units will be accommodated throughout the City per the 2021-2029 Housing Element site inventory. The residential overlays and/or specific plans will encourage a micro-village approach, building upon the historic and successful approach to master planning in the City of Irvine. Utilizing a micro-village approach to planning will ensure the focus areas are balanced with a mix of uses including neighborhood supporting square footage, open space, and non-residential square footage that are connected through multi-modal transportation and complete street strategies.

## **PROJECT PERSONNEL**

Cogstone Resource Management (Cogstone) conducted the cultural and paleontological resources studies. Qualifications of Cogstone personnel are provided (Appendix A).

- Molly Valasik served as the Principal Archaeologist for the Project and reviewed the report. Valasik has an M.A. in Anthropology from Kent State University, a B.A. in Anthropology from Ohio State University, and 15 years of experience in southern California archaeology.
- Kim Scott served as the Principal Paleontologist for the Project and wrote the geological and paleontological portions of this report. Scott has an M.S. in Biology with paleontology emphasis from California State University, San Bernardino, a B.S. in Geology with paleontology emphasis from the University of California, Los Angeles, and over 29 years of experience in California paleontology and geology.
- Holly Hickman authored portions of the report. Ms. Hickman has a B.A. in Archaeology and History from Simon Fraser University, British Columbia, Canada, and 11 years of experience in southern California archaeology.
- Sherri Gust (late) wrote the prehistoric and ethnographic sections of this report. Ms. Gust was a Registered Professional Archaeologist (RPA) with an M.S. in Anatomy (Evolutionary Morphology) from the University of Southern California, a B.S. in Anthropology from the University of California at Davis and over 36 years of experience in California.

- Shannon Lopez conducted the archaeological and historic records search and wrote the historic context. Lopez has an M.A. in Architectural History from California State University, Fullerton, and a B.A. in History from California State University, Dominguez Hills, and five years of professional experience.
- Logan Freeberg prepared the GIS maps for the report. Mr. Freeberg has a B.A. in Anthropology from UC Santa Barbara and a GIS certification from CSU Fullerton and over 20 years of experience in California archaeology.

## **REGULATORY ENVIRONMENT**

### **CALIFORNIA ENVIRONMENTAL QUALITY ACT**

CEQA states that: “It is the policy of the state that public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects, and that the procedures required are intended to assist public agencies in systematically identifying both the significant effects of proposed project and the feasible alternatives or feasible mitigation measures which will avoid or substantially lessen such significant effects.”

CEQA declares that it is State policy to: "take all action necessary to provide the people of this state with...historic environmental qualities." It further states that public or private projects financed or approved by the state are subject to environmental review by the state. All such projects, unless entitled to an exemption, may proceed only after this requirement has been satisfied. CEQA requires detailed studies that analyze the environmental effects of a proposed project. In the event that a project is determined to have a potential significant environmental effect, the act requires that alternative plans and mitigation measures be considered. If archaeological or paleontological resources are identified as being within the proposed project study area, the sponsoring agency must take those resources into consideration when evaluating project effects. The level of consideration may vary with the importance of the resource.

### **TRIBAL CULTURAL RESOURCES**

In 2015, CEQA was amended and established that “[a] project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment” (Public Resources Code [PRC] § 21084.2). In order to be considered, a “tribal cultural resource” must be a site, feature, place, cultural landscape, sacred place, or object, which is of cultural value to a California Native American Tribe and is either:

- (1) listed, or determined to be eligible for listing, on the national, state, or local register of historic resources, or
- (2) a resource that the lead agency chooses, in its discretion, to treat as a tribal cultural resource.

To help determine whether a project may have such an effect, the lead agency must consult with any California Native American tribe that requests consultation and is traditionally and culturally affiliated with the geographic area of a proposed project. California Native American tribe means a Native American tribe located in California that is on the contact list maintained by the

Native American Heritage Commission for the purposes of Chapter 905 of the Statutes of 2004 (PRC §21073.2.5). Consultation must take place prior to the determination of whether a negative declaration, mitigated negative declaration, or environmental impact report is required for a project (PRC § 21080.3.1).

In applying those criteria, a lead agency must consider the value of the resource to the tribe. For example, in considering the criterion that a resource is “associated with the lives of persons important in our past,” a lead agency would ask whether the resource is associated with the lives of persons important to the relevant tribe’s past. That determination must be supported with substantial evidence which is defined in PRC §20180 (e) (1) as “fact, a reasonable assumption predicated on fact, or expert opinion supported by fact”.

If a lead agency determines that a project may cause a substantial adverse change to tribal cultural resources, the lead agency must consider measures to mitigate that impact. PRC §20184.3 (b) (2) provides examples of mitigation measures that lead agencies may consider to avoid or minimize impacts to tribal cultural resources.

## **CALIFORNIA REGISTER OF HISTORICAL RESOURCES**

The California Register of Historical Resources (CRHR) is a listing of all properties considered to be significant historical resources in the state. The California Register includes all properties listed or determined eligible for listing on the National Register, including properties evaluated under Section 106, and State Historical Landmarks number No. 770 and above. The California Register statute specifically provides that historical resources listed, determined eligible for listing on the California Register by the State Historical Resources Commission, or resources that meet the California Register criteria are resources that must be given consideration under CEQA (see above). Other resources, such as resources listed on local registers of historic registers or in local surveys, may be listed if they are determined by the State Historic Resources Commission to be significant in accordance with criteria and procedures to be adopted by the Commission and are nominated; their listing in the California Register, is not automatic.

Resources eligible for listing include buildings, sites, structures, objects, or historic districts that retain historical integrity and are historically significant at the local, state or national level under one or more of the following four criteria:

- 1) It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;
- 2) It is associated with the lives of persons important to local, California, or national history;

- 3) It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or
- 4) It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

In addition to having significance, resources must have integrity for the period of significance. The period of significance is the date or span of time within which significant events transpired, or significant individuals made their important contributions. Integrity is the authenticity of a historical resource's physical identity as evidenced by the survival of characteristics or historic fabric that existed during the resource's period of significance.

Alterations to a resource or changes in its use over time may have historical, cultural, or architectural significance. Simply, resources must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. A resource that has lost its historic character or appearance may still have sufficient integrity for the California Register, if, under Criterion 4, it maintains the potential to yield significant scientific or historical information or specific data.

## **PUBLIC RESOURCES CODE SECTION**

Section 5097.5: No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands (lands under state, county, city, district or public authority jurisdiction, or the jurisdiction of a public corporation), except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor. As used in this section, "public lands" means lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof.

## **NATIVE AMERICAN HUMAN REMAINS**

Sites that may contain human remains important to Native Americans must be identified and treated in a sensitive manner, consistent with state law (i.e., Health and Safety Code §7050.5 and Public Resources Code §5097.9). In the event that human remains are encountered during project development and in accordance with the Health and Safety Code Section 7050.5, the County Coroner must be notified if potentially human bone is discovered. The Coroner will then determine within two working days of being notified if the remains are subject to his or her authority. If the Coroner recognizes the remains to be Native American, he or she shall contact

the Native American Heritage Commission (NAHC) by phone within 24 hours, in accordance with Public Resources Code Section 5097.98. The NAHC will then designate a Most Likely Descendant (MLD) with respect to the human remains. The MLD then has the opportunity to recommend to the property owner or the person responsible for the excavation work means for treating or disposing, with appropriate dignity, the human remains and associated grave goods.

### **CALIFORNIA ADMINISTRATIVE CODE, TITLE 14, SECTION 4307**

This section states that “No person shall remove, injure, deface or destroy any object of paleontological, archeological or historical interest or value.”

### **CITY GUIDELINES**

The City of Irvine General Plan includes Element E on Cultural Resources. It recognizes the importance of historical, archaeological and paleontological resources in the City and establishes a process for their early identification, consideration, and where appropriate, preservation. It requires assessment of potential resources on projects and utilizes planning policies, ordinances, approval conditions and mitigation measures to protect the resources. This Project is itself a General Plan Update and may include updates to these goals and objectives.

### **ELEMENT E: CULTURAL RESOURCES**

**GOAL:** Ensure the proper disposition of historical, archaeological, and paleontological resources to minimize adverse impacts, and to develop an increased understanding and appreciation for the community’s historic and prehistoric heritage, and that of the region.

#### **OBJECTIVE E-1: HISTORICAL, ARCHAEOLOGICAL, PALEONTOLOGICAL SURVEYS**

Identify and obtain information on the existence and significance of historical, archaeological, and paleontological sites and encourage land use planning which incorporates this information.

#### **OBJECTIVE E-2: HAZARD OCCURRENCE**

Evaluate surveyed sites for their present and potential cultural, educational, recreational, and scientific value to the community and the region, and determine their proper disposition prior to the approval of any project which could adversely affect them.

## **DEFINITION OF SIGNIFICANCE FOR PALEONTOLOGICAL RESOURCES**

Only qualified, trained paleontologists with specific expertise in the type of fossils being evaluated can determine the scientific significance of paleontological resources. Fossils are considered to be significant if one or more of the following criteria apply:

1. The fossils provide information on the evolutionary relationships and developmental trends among organisms, living or extinct;
2. The fossils provide data useful in determining the age(s) of the rock unit or sedimentary stratum, including data important in determining the depositional history of the region and the timing of geologic events therein;
3. The fossils provide data regarding the development of biological communities or interaction between paleobotanical and paleozoological biotas;
4. The fossils demonstrate unusual or spectacular circumstances in the history of life;
5. The fossils are in short supply and/or in danger of being depleted or destroyed by the elements, vandalism, or commercial exploitation, and are not found in other geographic locations.

As so defined, significant paleontological resources are determined to be fossils or assemblages of fossils that are unique, unusual, rare, uncommon, or diagnostically important. Significant fossils can include remains of large to very small aquatic and terrestrial vertebrates or remains of plants and animals previously not represented in certain portions of the stratigraphy. Assemblages of fossils that might aid stratigraphic correlation, particularly those offering data for the interpretation of tectonic events, geomorphologic evolution, and paleoclimatology are also critically important (Scott and Springer 2003, Scott et al. 2004).

## **BACKGROUND**

### **GEOLOGICAL SETTING**

The project area is in the northern extent of the California Geomorphic Province known as the Peninsular Ranges. The Peninsular Ranges geomorphic province extends from Mount San Jacinto in the north, through the tip of Baja, Mexico in the south. Subparallel to these ranges on the east is the San Andreas Fault Zone. The northwestwards motion of the Pacific Plate has created these ranges and their corresponding valleys (Wagner 2002).

### **PALEONTOLOGICAL SETTING**

The City has a complicated paleoenvironmental history that began during the Mesozoic Era (the “Age of Dinosaurs”), about 93 million years ago (93 Ma; Table 2). The past 93 Ma has seen the City transition from deep water marine in the Late Cretaceous, to coastal lowlands during the Paleocene to Oligocene, to shallow marine during the early Miocene, to deep marine during the early to early-late Miocene, back to shallow marine in the latest Miocene through the Pliocene, and finally to increasingly arid terrestrial deposits from the Pleistocene to the Holocene. In addition, younger sediments have been washed into the ocean by action of streams. Detail on each geological unit is in the Stratigraphy Section below.

### **STRATIGRAPHY**

Geologic mapping by Morton and Miller (2006) maps the area as 27 separate rock units ranging from modern deposits to Late Cretaceous sediments (Table 2; Figure 2). Geological units are discussed in order from oldest to youngest.



**Table 2. Geologic units within the City from oldest to youngest**

Rock Unit Name	Paleoenvironment	Epoch	Epoch Age Range	
Williams Formation, Pleasants Sandstone Member (Kwps)	shallow marine	Late Cretaceous	~100.5 Ma - ~66 Ma	
Silverado Formation (Tsi)	coastal nonmarine to very shallow-marine	Paleocene	~66 Ma - ~56 Ma	
Santiago Formation (Tsa)	coastal nonmarine to very shallow-marine	middle Eocene	~47.8 Ma to ~37.8 Ma	
Sespe Formation (Ts)	nonmarine	late Eocene to early Miocene	~41.2 Ma - ~17.4 Ma	
Vaqueros Formation (Tv)	shallow marine	latest Oligocene to latest early Miocene	~27 Ma - ~16 Ma	
Vaqueros-Sespe Formation (Tvs)	shallow marine - nonmarine			
El Modeno Volcanics (Tiemd, Tiemd?)	volcanics	middle Miocene	middle Miocene	
Topanga Group	Paulerino Formation (Ttp)			shallow marine
	Los Trancos Formation (Ttlt)			shallow marine
	Bommer Formation (Ttb)			shallow marine
Monterey Formation (Tm)	deep marine	late Miocene	~11.6 Ma - ~5.3 Ma	
Puente Formation (Tp, Tpsq, Tplv)	deep marine, submarine fan			
Capistrano Formation, Oso Member (Tco)	shallow marine	late Miocene to early Pliocene	~11.6 Ma - ~3.6 Ma	
Niguel Formation (Tn)	shallow marine	Pliocene	~5.3 Ma - ~2.6 Ma	
very old alluvial-fan deposits (Qvof)	alluvial fan	early to middle Pleistocene	~2.6 million years (Ma) - ~126 ka -	
very old axial-channel deposits (Qvoa)	flood-plains			
old paralic and alluvial fan deposits (Qopf)	shoreline overlain by alluvial fans	middle to late Pleistocene	~774 ka - ~11.7 ka -	
young landslide deposits (Qyls?)	landslide	late Pleistocene to Holocene	<126 ka	
young alluvial-fan deposits (Qyf)	alluvial fan			
young colluvium (Qyc)	slope deposit			
young axial-channel deposits (Qya)	flood-plains			
very young slope wash deposits (Qsw)	slope wash	late Holocene	<5,000 years (<5 ka)	
very young landslide deposits (Qls, Qls?)	slope wash			
artificial fill (Qaf)	human-made	modern	<200 years	

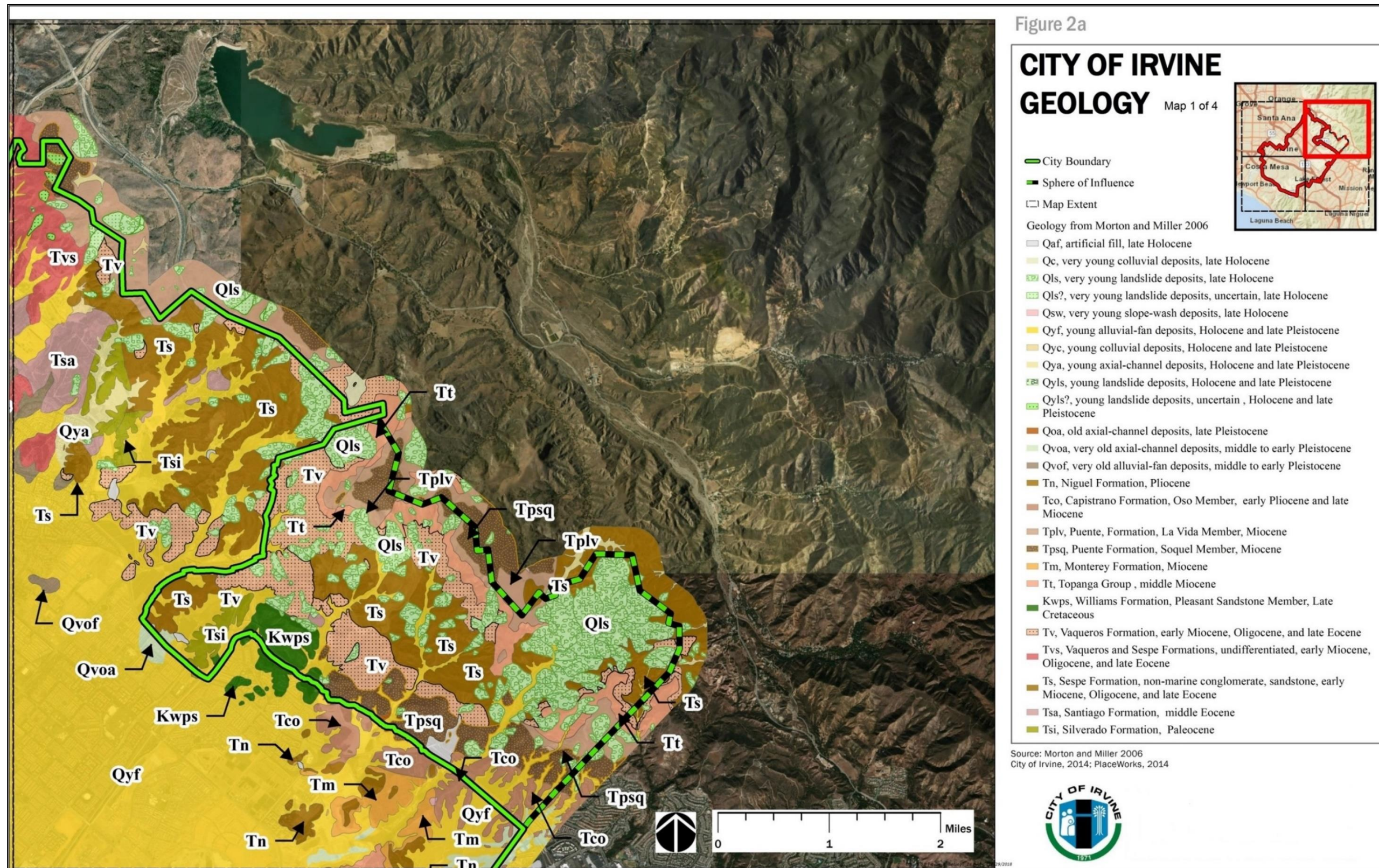


Figure 2a. Geology Map, 1 of 4

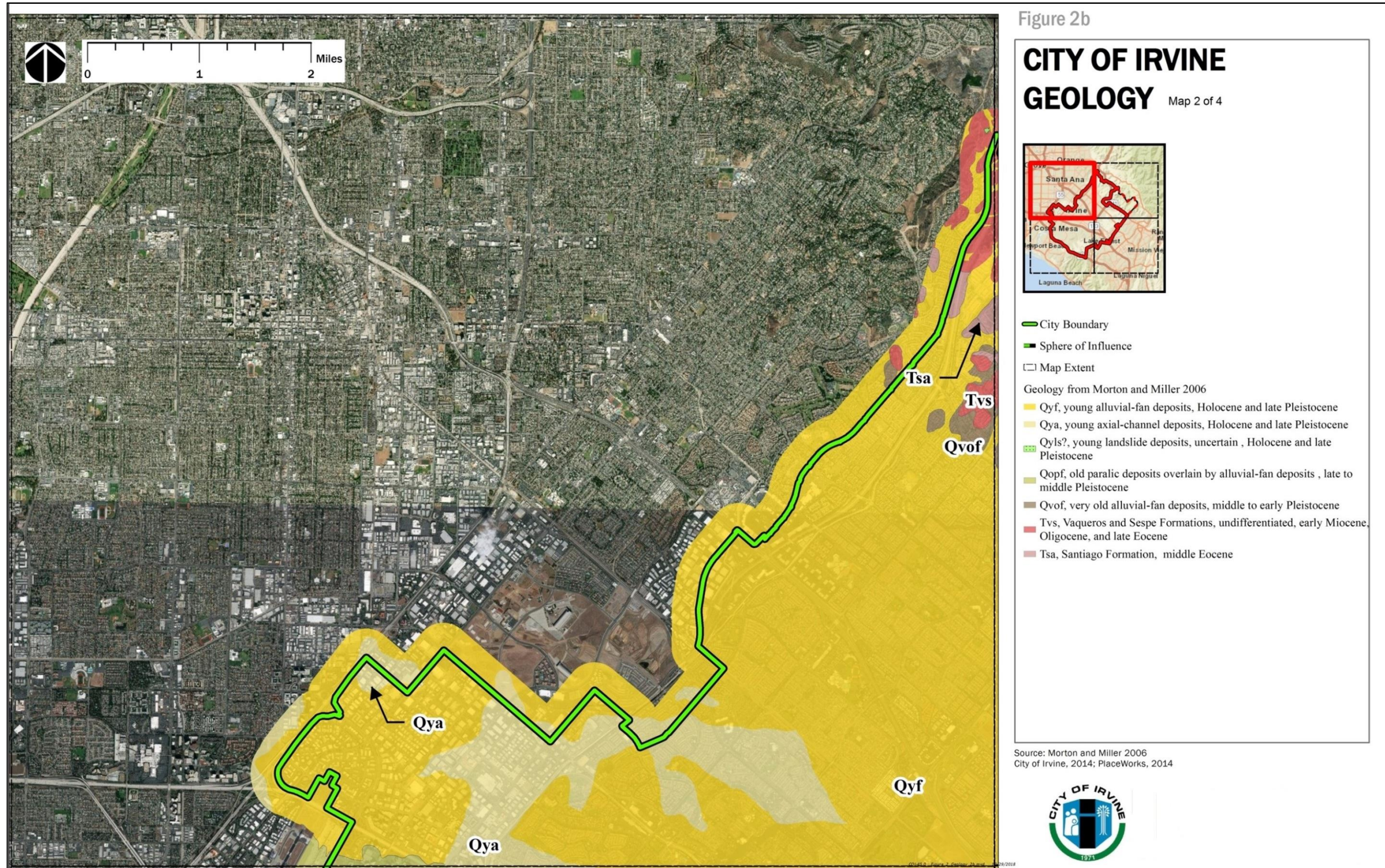


Figure 2b. Geology Map, 2 of 4

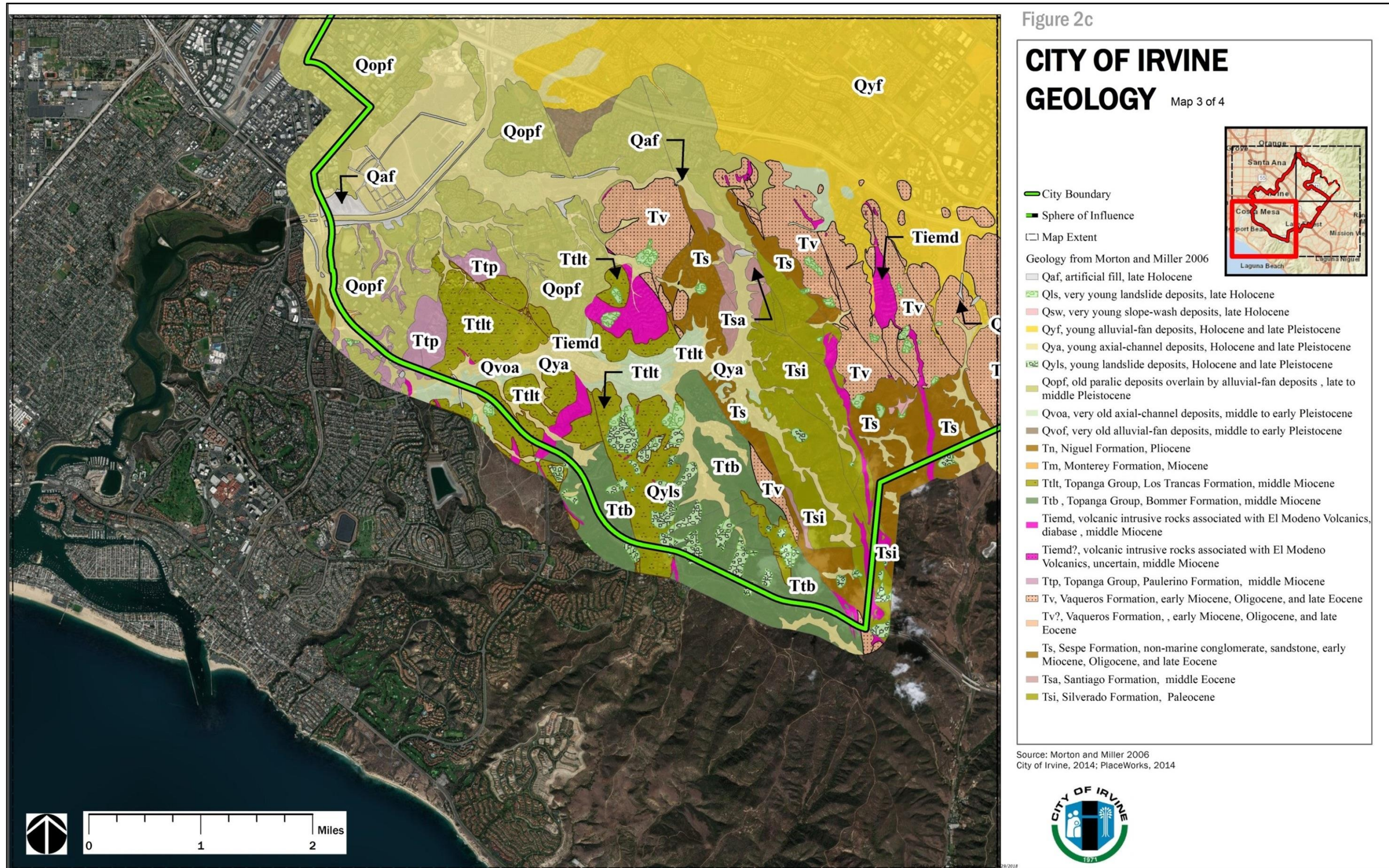


Figure 2c. Geology Map, 3 of 4

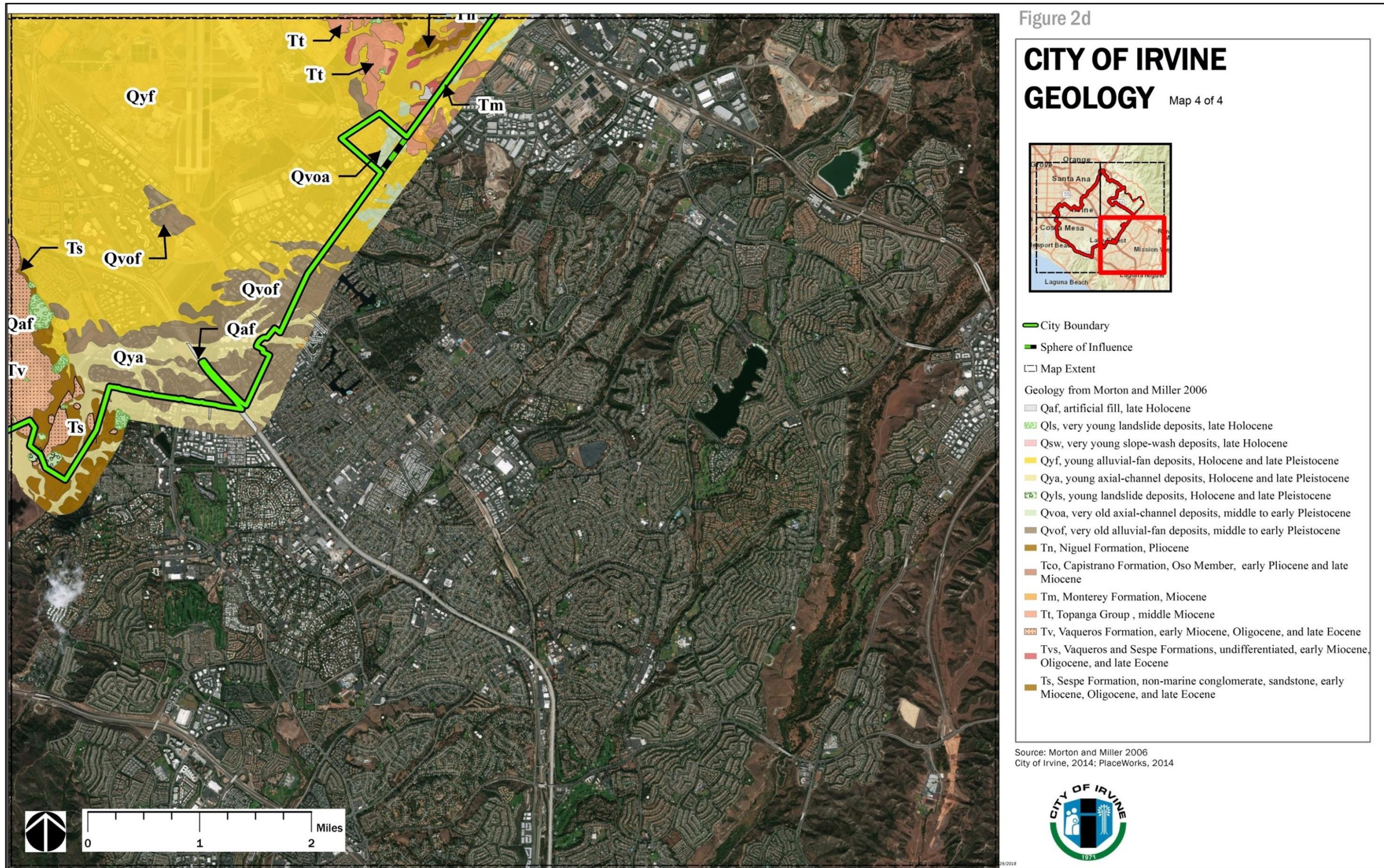


Figure 2d. Geology Map, 4 of 4

### **Late Cretaceous Rocks (~100.5 million years old [Ma] to ~66 Ma)**

#### **Williams Formation, Pleasants Sandstone Member (Kwps)**

The thickness of this shallow marine sandstone ranges from 0 m to 150 m in the Santa Ana Mountains. The lower portion of this formation consists of a massive sandstone with biotite, black carbonaceous fragments, scattered conglomerate lenses, and thin-bedded, biotite- and muscovite-bearing sandstone. The upper portion consists of poorly bedded, white to pale gray, feldspathic sandstone (Schoellhamer et al. 1981, Morton and Miller 2006).

### **Paleocene Rocks (~66 Ma to ~56 Ma)**

#### **Silverado Formation (Tsi)**

Deposited in coastal nonmarine swamps and sloughs to very shallow-marine deltas and bays, the thickness of this formation ranges from 200 m to 450 m in the Santa Ana Mountains. This formation is divided into a basal conglomerate (Tsicg) overlain by sandstone and siltstone of the undifferentiated Silverado Formation (Tsi; Schoellhamer et al. 1981, Morton and Miller 2006).

Above the basal conglomerate, the Silverado Formation consists of marine and nonmarine, sandstone and siltstone. Clasts are largely of quartz and clay with some conglomerate. The locally mapped Serrano Clay (Tsis) is present within the upper Silverado Formation. It is a 1 m thick marker bed composed of pale gray to white, soft and plastic clay and quartz with carbonaceous shale and lignite beds (Schoellhamer et al. 1981, Eisentraut and Cooper 2002, Morton and Miller 2006).

### **Middle Eocene Deposits (~47.8 Ma to ~37.8 Ma)**

#### **Santiago Formation (Tsa)**

These sediments consist of marine and nonmarine deposits from a coastal lowland paleoenvironment. At the base is a conglomerate with the clasts that originated from western central Mexico where the Santiago Formation was originally deposited. The north-westerly movement of the Pacific Plate by the San Andreas Fault Zone brought these sediments into southern California. Pale gray sandstone and some interbedded siltstone occurs above the conglomerate (Schoellhamer et al. 1981, Morton and Miller 2006).

### **Late Eocene to latest early Miocene Deposits (~41.2 Ma to ~17.4 Ma)**

#### **Sespe Formation (Ts)**

This red to grey, non-marine mudstone to conglomerate occurs as massive to thick bedded deposits with poorly developed bedforms (Eisentraut and Cooper 2002, Morton and Miller

2006). This terrestrial deposit includes fluvial, floodplain, and alluvial fan deposits. This formation also reflects a major drop in global sea levels (Eisentraut and Cooper 2002, McCulloch and Bayer 2004).

### **Miocene Epoch (~23 Ma to ~5.3 Ma)**

The Miocene Epoch was a dramatic time in southern California. The San Andreas Fault began bringing Pacific Plate lands from the south, volcanoes erupted, mountains grew, and numerous coastal marine basins were formed. Orange County rests in one of these basins - the Los Angeles Basin. During the Miocene, the Los Angeles Basin was tectonically active. Opening of the basin began about 17.4 Ma (McCulloch and Bayer 2004) and was followed by subsidence and creation of a deep marine depositional basin. Sediments are estimated to be up to six miles thick, one of the thickest Neogene stratigraphic successions in the world (Eisentraut and Cooper 2002).

### **Latest Oligocene to latest early Miocene (~27 Ma to ~16 Ma)**

#### **Sespe-Vaqueros Formation (Tvs)**

These two formations interfinger so much in many areas of California that they are mapped together. Sespe Formation sediments are generally coarser than those of the Vaqueros Formation. The Vaqueros-Sespe section can reach thicknesses between 1,500 and 2,000 feet in the Lake Forest area (McCulloch and Bayer 2004). See the individual descriptions for each for more information.

#### **Sespe Formation (Ts)**

This formation is of terrestrial origin and consists of sandstones and conglomerates from riverine, shoreline and floodplain environments. Commonly, the sandstones weather to reddish-brown, maroon, pinkish-gray, tan and green colors. Many of the sandstones are resistant to erosion and thus form dramatic outcrops and ridgelines.

#### **Vaqueros Formation (Tv)**

The shallow marine Vaqueros Formation occurs as greenish-gray to very dark gray, massive- to thick-bedded silty sandstone. Sandstone beds interfinger with thin-bedded siltstone and shale, mudstone, and minor conglomerate (McCulloch and Bayer 2004, Morton and Miller 2006). Deposition of the Vaqueros Formation began about 24 Ma and ended in most of the Los Angeles area between 17.5 Ma and 17.4 Ma based on the dating of volcanics, marine mollusks, benthic foraminifera, magnetic polarity stratigraphy, and other methods (Nagle and Parker 1971, Yerkes and Campbell 1979, Schoellhamer et al. 1981, Blake 1983, Mason and Swisher 1989, Nourse et al. 1998, Prothero et al. 1996, Lucas et al. 1997, Liddicoat 2001, McCulloch et al. 2001, Prothero and Donohoo 2001, McCulloch et al. 2002, Ludtke and Prothero 2003, Lander et al. 2003,

Whistler and Lander 2003, McCulloch and Bayer 2004). The appearance of marine sediments after the non-marine Sespe Formation indicates rising global sea levels.

### **Middle Miocene Deposits (~17.4 Ma to ~11.6 Ma)**

#### **El Modeno Volcanics (Tiemd)**

This unit consists of a fine grained diabasic intrusive rock (Morton and Miller 2006) created by volcanic eruptions.

#### **Topanga Group, undifferentiated (Tt)**

Undifferentiated Topanga Group (Tt) sediments consist primarily of coarse-grained, massive to thick-bedded sandstone and conglomerate. A basal tan to grey, well indurated, sandy conglomerate bed ranging from 2 m to 9 m is present (Schoellhamer et al. 1981). Clasts in this basal unit are predominantly granitic and gneissic with some volcanics. Above the basal conglomerate, are interfingering, thinly bedded, fine to coarse-grained sandstone, siltstone, and minor amounts of diatomaceous and partially silicified shale. While the shale is grey to greyish-white, coarser sediments are yellow to yellowish-tan (Morton and Miller 2006). Deposition began about 17.4 Ma and ended about 15.9 Ma based on dating of underlying and overlying volcanics (Turner and Campbell 1979, McCulloch et al. 2002, McCulloch and Bayer 2004).

The shallow to deep marine Topanga Group was one of the first units to be deposited in the rapidly deepening Los Angeles Basin. Much of these deep submarine fan and plain deposits occurred between 13 Ma and 5 Ma and corresponds with deposition of the Topanga and Monterey formations (Redin 1991, McCulloch and Bayer 2004). The Los Angeles Basin/ Tustin Plain continues to be filled by modern deposition today.

#### **Formations of the Topanga Group (Ttb, Ttlt, Ttp)**

In Orange County, the Topanga Group includes three formations: the basal Bommer Formation (Ttb), the middle Los Trancos Formation (Ttlt), and the upper Paulerino Formation (Ttp). Prior to Morton and Miller (2006) the Topanga Group formations were member level.

The basal Bommer Formation consists of gray to brownish-gray, thick-bedded, medium- to coarse-grained sandstone with interfingering fine-grained sandstone and siltstone. The formation is locally conglomeratic. The pale gray to brownish-gray, thin- to medium-bedded, siltstone and fine-grained sandstone of the Los Trancos Formation is up to 945 m thick. The upper Paulerino Formation consists of pale gray, tuffaceous sandstone and thin-bedded siltstone (Morton and Miller 2006).



## **Late Miocene Deposits (~11.6 Ma to ~5.3 Ma)**

### **Monterey Formation (Tm)**

This siliceous and diatomaceous marine mudstone, shale, diatomite, and some chert is primarily white to pale brown and thinly laminated or bedded. In the San Juan Capistrano area, lower part of Puente Formation grades laterally southward into Monterey Formation (Morton and Miller 2006). Sediments are part of a deep submarine fan and plain deposits that were deposited between 13 Ma and 5 Ma (Redin 1991). Locally named “Pecten Reef”, a limestone in the Aliso Viejo area has produced abundant invertebrate and vertebrate fossils. The Monterey Formation was deposited at the same time as the Soquel Member, La Vida Member, and the lower portion of the undifferentiated Puente Formation (Morton and Miller 2006).

### **Puente Formation (Tp, Tpsq, Tplv)**

The deep marine Puente Formation has produced numerous fossil localities of marine animals and algae as well as terrestrial plants and animals that were washed in from the land. These sediments were deposited at the same time as the Monterey Formation. Within the City are three units: the undifferentiated Puente Formation (Tp), the younger Soquel Member (Tpsq), and the basal La Vida Member (Tplv; Morton and Miller 2006).

The undifferentiated Puente Formation (Tp) consists of sandstone, siltstone, and shale. The Soquel Member (Tpsq) is primarily marine sandstone with minor amounts of shale. Beds are yellowish grey to grey, massive to well-bedded, silts to very coarse grained sandstone, interbedded with matrix supported pebble conglomerate (Morton and Miller 2006). The member ranges from 200 to 310 feet thick in the eastern Puente Hills and the sediments have been interpreted to be middle to inner submarine fan facies (Cooper 1981).

The basal La Vida Member (Tplv) sediments are primarily light-gray to black, massive to well-bedded, generally friable siltstone with some sandstone beds from 2 cm to over 1 meter thick. Fish remains are common and include deep water species (Morton and Miller 2006).

## **Late Miocene to early Pliocene Deposits (~11.6 Ma to ~3.6 Ma)**

### **Capistrano Formation, Oso Sand (Tco)**

The Oso Sand of the Capistrano Formation consists of white to light gray, massive, medium- to coarse-grained, friable, marine sandstone with scattered matrix-supported pebbles, cobbles, and concretions (Morton and Miller 2006). The bay that occupied the region was named the Capistrano Embayment (Reed and Hollister 1936). This embayment was a broad flat-bottomed structural trough that extended at least 22 miles inland from the present-day shoreline. How far offshore it extended is undetermined because of its merging with the deep offshore basins. Water depths in the Capistrano Embayment reached nearly 2,000 meters at its deepest point (Ingle 1979).

### **Pliocene Deposits (~5.3 Ma to ~2.6 Ma)**

#### **Niguel Formation (Tn)**

These very near-shore marine, brownish-gray, poorly sorted, coarse-grained sandstones are interbedded with conglomeratic sandstone and conglomerates. The paleoenvironment represented is near-shore marine (Vedder 1960, Morton and Miller 2006).

### **Early to middle Pleistocene Deposits (2.6 Ma to 126,000 years old [120 ka])**

#### **Very old axial channel deposits (Qvoa)**

Axial channel deposits were emplaced adjacent to streams in through-going stream valleys. Undifferentiated very old axial channel sediments are dominated by sand, but contain scattered gravel and pebble layers, as well as silt and clay-bearing alluvium. These deposits are moderately to well-indurated, reddish-brown, and are highly pigmented in upper parts. The upper surfaces are typically very dissected (Morton and Miller 2006).

#### **Very old alluvial fan deposits (Qvof)**

Alluvial fan deposits are deposited into our valleys from local mountains via the mouths of canyons. Sediments are moderately to well indurated, silts to bouldery conglomerates, with slightly to moderately dissected fan surfaces. In much of Peninsular Ranges these sediments are moderately well indurated, orangish brown sand and silt with well dissected fan surfaces (Morton and Miller 2006). Clasts coarsen upstream with boulders up to several meters across being deposited near the mountains during flash floods

### **Middle to late Pleistocene Deposits (774,000 [774 ka] to 126 ka)**

#### **Old paralic deposits (Qopf)**

Paralic deposits were emplaced adjacent to the ocean and include interfingering strandline, beach, estuarine, and colluvial deposits. These poorly sorted, moderately permeable, reddish-brown, are composed of silt, sand, and cobbles. The top of the unit is capped by thin but extensive sand-rich alluvial fan deposits derived from local sources (Morton and Miller 2006).

### **Late Pleistocene to Holocene Deposits (less than 126 ka)**

#### **Young axial channel deposits (Qya)**

Axial channel deposits were emplaced adjacent to streams in through-going stream valleys. Sediments are slightly to moderately indurated and consist of silts to pebbles (Morton and Miller 2006).

### **Young colluvial deposits (Qyc)**

Colluvium is present as scree, soils, or other materials and is primarily found at the base of hills. These sediments have been emplaced by rain wash or slow continuous downslope creep. The young deposits are undissected to slightly dissected, unconsolidated to slightly consolidated and have minor amounts of soil development (Morton and Miller 2006).

### **Young alluvial fan deposits (Qyf)**

Alluvial fan deposits are deposited into our valleys from local mountains via the mouths of canyons. Sediments are unindurated to moderately indurated, silts to bouldery conglomerates, with slightly to moderately dissected fan surfaces (Morton and Miller 2006). Clasts coarsen upstream with boulders up to several meters across being deposited near the mountains during flash floods.

### **Young landslide deposits (Qyls?)**

Landslides are the result of slope failures and typically result in chaotically emplaced sediments. Slides may or may not be active and have slightly dissected or modified surfaces (Morton and Miller 2006). In less chaotic slides and slumps beds can sometimes be traced and given stratigraphic context.

## **Late Holocene Deposits (less than 5 ka)**

### **Very young landslide deposits (Qls, Qls?)**

Landslides are the result of slope failures and typically result in chaotically emplaced sediments. Slides may or may not be active and have well preserved morphology (Morton and Miller 2006). In less chaotic slides and slumps beds can sometimes be traced and given stratigraphic context.

### **Very young slope wash deposits (Qsw)**

Very similar to the colluvial deposits, slope wash is also associated with hillsides. The unconsolidated, typically angular, sand to boulder sized clasts have been emplaced by water not confined to channels (Morton and Miller 2006).

## **Modern Deposits (less than 200 years old)**

### **Artificial fill (Qaf)**

Modern fill is frequently not mapped on geologic maps due to its ubiquitous nature. Although fill is typically less than a few feet thick, it can be substantially thicker in the areas of overpasses, freeways, and other large earthworks. Any fossils that may be encountered therein are not scientifically significant.

## **ETHNOGRAPHY**

The City of Irvine is located within the traditional tribal territory of the Gabrielino with the Acjachemen (Juaneño) located immediately to the south (McCawley 1996, Figure 3). The traditional tribal territory of the Gabrielino includes large portions of Los Angeles County, the northern part of Orange County, small sections of Riverside and San Bernardino Counties as well as the southern Channel Islands of Santa Barbara, San Clemente, San Nicolas, and Santa Catalina (McCawley 1996, Figure 3). The traditional tribal territory of the Acjachemen includes northern San Diego County and southern Orange County (O'Neil and Evans 1980). Tribal boundaries are fluid and the Acjachemen territory may have extended north to include the City of Irvine. Background sections for both the Gabrielino and Acjachemen are provided below.

### **GABRIELINO**

The Gabrielino are considered to have been one of the wealthiest tribes and to have greatly influenced tribes they traded with (Kroeber 1976:621). Houses were domed, circular structures thatched with tule or similar materials (Bean and Smith 1978:542). The best known artifacts were made of steatite and were highly prized. Many common everyday items were decorated with inlaid shell or carvings reflecting an elaborately developed artisanship (Bean and Smith 1978:542).

The main food zones utilized were marine, woodland and grassland (Bean and Smith 1978). Plant foods were, by far, the greatest part of the traditional diet at contact. Acorns were the most important single food source. Villages were located near water sources necessary for the leaching of acorns, which was a daily occurrence. Grass seeds were the next most abundant plant food used along with chia. Seeds were parched, ground, and cooked as mush in various combinations according to taste and availability. Greens and fruits were eaten raw or cooked or sometimes dried for storage. Bulbs, roots, and tubers were dug in the spring and summer and usually eaten fresh. Mushrooms and tree fungus were prized as delicacies. Various teas were made from flowers, fruits, stems, and roots for medicinal cures as well as beverages (Bean and Smith 1978:538-540).

The principal game animals were deer, rabbit, jackrabbit, woodrat, mice, ground squirrels, antelope, quail, dove, ducks, and other birds. Most predators were avoided as food, as were tree squirrels and most reptiles. Trout and other fish were caught in the streams, while salmon were available when they ran in the larger creeks. Marine foods were extensively utilized. Sea mammals, fish, and crustaceans were hunted and gathered from both the shoreline and the open ocean, using reed and dugout canoes. Shellfish were the most common resource, including abalone, turban, mussels, clams, scallops, bubble shells, and others (Bean and Smith 1978:538-540).

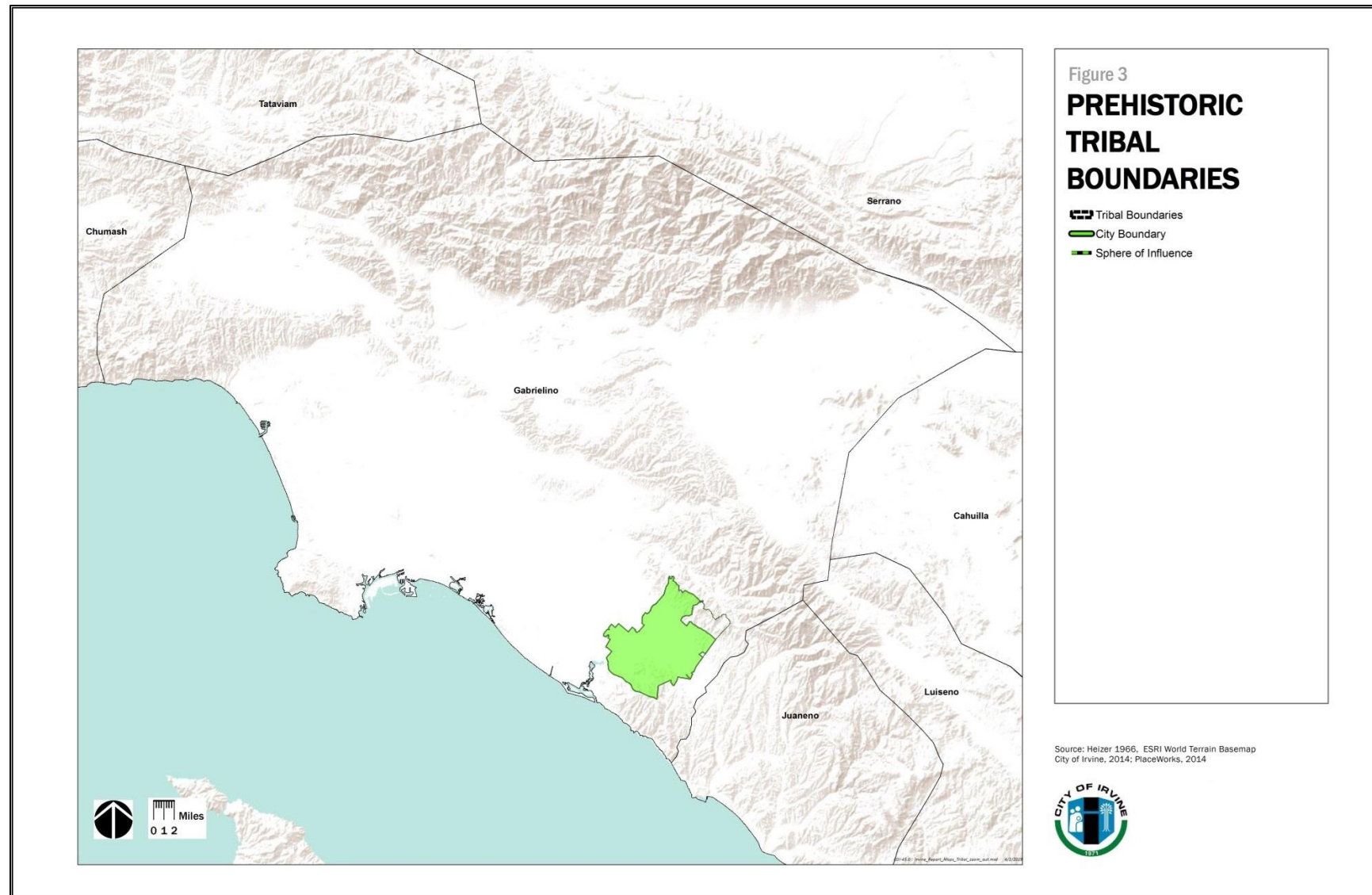


Figure 3. Tribal Territory Map

## **JUANEÑO ACJACHEMEN**

About 1,300 years ago the Acjachemen (Juaneño), who were hunters and gatherers of the San Luis Rey Cultural Pattern, moved into southern Orange County. The Acjachemen speak a language that is part of the Takic language family. Their traditional tribal territory was situated partly in northern San Diego County and partly in southern Orange County (see Figure 3). The boundaries were Las Pulgas Creek (south), Aliso Creek (north), the Pacific Ocean (west) and the Santa Ana Mountains (east). Villages were mostly along San Juan Creek, Trabuco Creek and San Mateo Creek (O'Neil and Evans 1980).

In prehistory, the Acjachemen had a patrilineal society and lived in groups with other relatives. These groups had established claims to places including the sites of their villages and resource areas. Marriages were usually arranged from outside villages establishing a social network of related peoples in the region. There was a well-developed political system including a hereditary chief. Religion was an important aspect of their society. Religious ceremonies included rites of passage at puberty and mourning rituals (Kroeber 1925).

Houses were typically conical in shape and thatched with locally available plant materials. Work areas were often shaded by rectangular brush-covered roofs (ramada). Each village had a ceremonial structure in the center enclosed by a circular fence where all religious activities were performed (Bean and Shipek 1978).

Women are known to have been the primary gatherers of plant foods, but also gathered shellfish and trapped small game animals. Men hunted large game, most small game, fished, and assisted with plant food gathering, especially of acorns. Adults were actively involved in making tools including nets, arrows, bows, traps, food preparation items, pottery and ornaments. Tribal elders had important political and religious responsibilities and were involved in education of younger members (Bean and Shipek 1978).

## **PREHISTORIC SETTING**

Review of archaeological data has resulted in a revised synthesis of cultural change as evidenced by material culture and archaeologically visible cultural practices. A large part of what was previously referred to as the Millingstone Period is now called the Topanga pattern of the Encinitas Tradition. This pattern is replaced in the Project Area by the Angeles pattern of the Del Rey Tradition later in time (Sutton 2010; Table 3).

**Table 3. Culture Change Chronology**

Pattern	Phase	Dates (BP)	Material Traits	Other Traits
Encinitas	Topanga I	8,500 to 5,000	Abundant manos and metates, many core tools and scraper s, few but large points, charmstones, cogged stones, early discoidals, bone gorge fishhooks, faunal remains rare; <i>Olivella</i> spire/end lopped beads appear	Estuary/lagoon shellfish and sharks/rays common, hunting important, secondary burials under metate cairns (some with long bones only), some extended inhumations, no cremations
	Topanga II	5,000 to 3,500	Abundant but decreasing manos and metates, adoption of mortars and pestles, smaller points, cogged stones, late discoidals, fewer scraper planes and core tools, some stone balls and charmstones; inhumations common; <i>Olivella</i> Grooved Rectangular beads introduced	Estuary/lagoon shellfish and sharks/rays common, addition of acorns, reburial of long bones only, addition of flexed inhumations (some beneath metate cairns), cremations rare
Angeles	Angeles I	3,500 to 2,600	Appearance of Elko dart points and an increase in the overall number of projectile points from Encinitas components; beginning of large-scale trade in small steatite artifacts (effigies, pipes, and beads) and <i>Olivella</i> shell beads; appearance of single-piece shell fishhooks and bone harpoon points; Coso obsidian becomes important; appearance of donut stones; appearance of <i>Mytilus</i> beads	apparent population increase; fewer and larger sites along the coast; collector strategy; less overall dependence on shellfish but fishing and terrestrial hunting more important; appearance of flexed and extended inhumations without cairns, cremations uncommon
	Angeles II	2,600 to 1,600	Continuation of basic Angeles I material culture with the addition of mortuary features containing broken tools and fragmented cremated human bone; fishhooks become more common	Shellfish change to mudflat species, more emphasis on fish, birds and mammals, continuation of basic Angeles I settlement and subsistence systems; appearance of a new funerary complex
	Angeles III	1,600 to 1,250	Appearance of bow and arrow technology (e.g., Marymount or Rose Spring points); changes in <i>Olivella</i> beads; asphaltum becomes important; reduction in obsidian use; Obsidian Butte obsidian largely replaces Coso	larger seasonal villages; flexed primary inhumations but no extended inhumations and an increase in cremations; appearance of obsidian grave goods
	Angeles IV	1,250 to 800	Cottonwood points appear; some imported pottery appears; birdstone effigies at the beginning of the phase and “spike” effigies dropped by the end of the phase; possible appearance of ceramic pipes, <i>Mytilus</i> shell disks	change in settlement pattern to fewer but larger permanent villages; flexed primary inhumations continue, cremations uncommon

Pattern	Phase	Dates (BP)	Material Traits	Other Traits
	Angeles V	800 to 450	Trade of steatite artifacts from the southern Channel Islands becomes more intensive and extensive, with the addition or increase in more and larger artifacts, such as vessels and comals; larger and more elaborate effigies; portable mortars and pestles	strengthening of ties, especially trade, with southern Channel Islands; expansion into the northern Santa Ana Mountains and San Joaquin Hills
	Angeles VI	450 to 150	Addition of Euroamerican material culture (e.g., glass beads and metal tools), locally made pottery, metal needle-drilled <i>Olivella</i> beads	change of settlement pattern, movement close to missions and ranches; use of domesticated species obtained from Euroamericans; flexed primary inhumations continue; apparent adoption of Chingichngish religion

Topanga Pattern groups were relatively small and highly mobile. Sites tend to be along the coast in wetlands, bays, coastal plains, near-coastal valleys, marine terraces and mountains. The Topanga toolkit is dominated by manos and metates with projectile points scarce (Sutton and Gardner 2010: 9).

In Topanga Phase I other typical characteristics were a few mortars and pestles, abundant core tools (scraper planes, choppers, and hammerstones), relatively few large, leaf-shaped projectile points, cogged stones, and early discoidals (Table 3). Secondary inhumation under cairns was the common mortuary practice. In Orange County as many as 600 flexed burials were present at one site and dated 6, 435 calibrated radiocarbon years before present (Sutton and Gardner 2010: 9, 13).

In Topanga Phase II, flexed burials and secondary burial under cairns continued. Adoption of the mortar and pestle is a marker of this phase. Other typical artifacts include manos, mutates, scrapers, core tools, discoidals, charmstones, cogged stones, and an increase in the number of projectile points. In Orange County stabilization of sea level during this time period resulted in increased use of estuary, near shore and local terrestrial food sources (Sutton and Gardner 2010: 14-16).

The Angeles pattern generally is restricted to the mainland and appears to have been less technologically conservative and more ecologically diverse, with a largely terrestrial focus and greater emphases on hunting and nearshore fishing. In Angeles Phase I Elko points for atlatls or darts appear, small steatite objects such as pipes and effigies are found, shell beads and ornaments increase, fishing technologies increase including bone harpoons/fishhooks and shell



fishhooks, donut stones appear, and hafted micro blades for cutting/graving wood or stone appear. In addition, several Encinitas traits, such as discoidals, cogged stones, plummet-like charm stones and cairn burials virtually disappear from the record. Mortuary practices changed to consist of primarily flexed primary inhumations, with extended inhumations becoming less common. Settlement patterns made a shift from general use sites being common to habitation areas separate from functional work areas. Subsistence shifted from mostly collecting to increased hunting and fishing.

The Angeles Phase II is identified primarily by the appearance of a new funerary complex, with other characteristics similar to Angeles I. The complex features killed (broken) artifacts plus highly fragmented cremated human bones and a variety of faunal remains. In addition to the cremains, the other material also often burned. None of the burning was performed in the burial feature.

The Angeles III Phase is the beginning of what has been known as the Late Period and is marked by several changes from Angeles I and II. These include the appearance of small projectile points, steatite shaft straighteners and increased use of asphaltum all reflecting adoption of bow and arrow technology, obsidian sources changed from mostly Coso to Obsidian Butte and shell beads from Gulf of California species began to appear. Subsistence practices continued as before and the geographic extent of the Angeles Pattern increased (Sutton 2010).

Angeles Phase IV is marked by new material items including Cottonwood points for arrows, Olivella cupped beads and Mytilus shell disks, birdstones (zoomorphic effigies with magico-religious properties) and trade items from the Southwest including pottery. It appears that populations increased and there was a change in the settlement pattern to fewer but larger permanent villages. Presence and utility of steatite vessels may have impeded the diffusion of pottery into the Los Angeles Basin. Smaller, special-purpose sites continued to be used (Sutton 2010).

Angeles Phase V components contain more and larger steatite artifacts, including larger vessels, more elaborate effigies, and comals. Settlement locations shifted from woodland to open grasslands. The exploitation of marine resources seems to have declined and use of small seeds increased. Many Gabrielino inhumations contained grave goods while cremations did not (Sutton 2010).

The Angeles Phase VI reflects the ethnographic mainland Gabrielino of the post-contact (i.e., post-A.D. 1542) period. One of the first changes in Gabrielino culture after contact was undoubtedly population loss due to disease, coupled with resulting social and political disruption. Angeles Phase VI material culture is essentially Angeles Phase V, augmented by a number of Euro-American tools and materials, including glass beads and metal tools such as knives and needles (used in bead manufacture). The frequency of Euro-American material culture increased

through time until it constituted the vast majority of materials used. Locally produced brownware pottery appears along with metal needle-drilled Olivella disk beads (Sutton 2010).

The ethnographic mainland Gabrielino subsistence system was based primarily on terrestrial hunting and gathering; although nearshore fish and shellfish played important roles. Sea mammals, especially whales (likely from beached carcasses), were prized. In addition, a number of European plant and animal domesticates were obtained and exploited. Ethnographically, the mainland Gabrielino practiced interment and some cremation (Sutton 2010).

## **HISTORIC SETTING**

### **Spanish Exploration**

Juan Cabrillo was the first European to sail along the coast of California in 1542 and was followed in 1602 by Sebastian Vizcaino (Bean and Rawls 1993). The Spanish colonization of what was then known as Alta California began with the 1769 overland expedition led by Gaspar de Portolá with a crew of 63 men in order to explore the land between San Diego and Monterey (Fox 1979). Between 1769 and 1822 the Spanish had colonized California and established missions, presidios, and pueblos and documented the people and landscape along the way (McCawley 1996).

Portola and his expedition crossed the area north of Lake Forest in July 1769, naming the perennial creek that empties from the Santa Ana Mountains “*aliso*”, the Spanish word for alder; an error on the Spanish identifier, since they were in fact, referring to the sycamore tree, which still grows along the creek. It should be noted that the Juaneño term for the creek was *Seeevenga*, meaning “at the sycamores” (O’Neil 1988). However, historically, alder and sycamore trees were much more prominent, particularly in the riparian and floodplain areas where an oak-woodland habitat existed. During the Mission period, many of the trees along the creek, including alder, oak, sycamore, and other species were cut down for the construction of ships and structures, charcoal production, and other uses (Nasser 2003).

Following the Portolá Expedition, vast tracts of land were granted to the Missions. The seventh of the Franciscan missions in California was Mission San Juan Capistrano, founded in 1776; shortly after Portolá’s visit to the area. The goals of the missions were tri-fold: they helped establish a Spanish presence on the west coast, allowed for a means to Christianize the native peoples, and served to exploit the native population as laborers. The Spanish also hoped each mission would become a town center, whereas, “the pueblo would receive a ground of four square leagues of land... and other property would be parceled out among the Indians.” The missionaries, or padres, would essentially serve as a mayor, or head of the town (Bean 1978:29-30).

Portions of Irvine lie within the boundaries of Rancho Santiago de Santa Ana (Figure 4). The Rancho Santiago de Santa Ana was given to Jose Antonio Yorba and his nephew Pablo Peralta in 1810 by Governor José Joaquín de Arrillaga on behalf of the Spanish Government. This grant was extremely rare at this time and was the only land grant in present-day Orange County to be given under Spanish Rule. The grant consisted of the lands east of the Santa Ana River to the Santa Ana Mountains. The land was originally petitioned for by Juan Pablo Grijalva, who was a Spanish soldier that had travelled to California with the De Anza expedition. He died before the grant was approved, which resulted in the land being granted to his son-in-law (Yorba) and grandson (Peralta).

### **Mexican Period**

In 1821 Mexico won its independence from Spain and worked to lessen the wealth and power held by the missions. The Secularization Act was passed in 1833, appropriating the vast mission lands to the Mexican governor and downgrading the missions' status to that of parish churches. The governor then redistributed the former mission lands, in the form of land grants, to private owners (Bean and Rawls 1993; Robinson 1948). The lands were typically granted to soldiers who proved their loyalty to the Mexican government once liberated from the Spanish crown.

In addition to the land granted for the Rancho Santiago de Santa Ana under the Spanish Government, additional land grants were given by the Mexican government including Rancho San Joaquin and Rancho Lomas de Santiago (Figure 4). The Rancho San Joaquín land grant was a combination of the Rancho Cienega de las Ranas and the Ranch La Bolsa de San Joaquín. This land grant was issued to José Antonio Andrés Sepúlveda in 1837 and 1842, respectively. The Spanish *Cienega de las Ranas* means “marsh of the frogs” and *bolsa* means “pocket”, and together refers to a wetlands area. Rancho Lomas de Santiago was granted to Teodosio Yorba by the Mexican Governor Pío Pico in 1846. Teodosio was the son of Jose Antonio Yorba, who was granted Rancho Santiago de Santa Ana

### **American Period**

Following the cession of California to the United States after the Mexican-American War, the Treaty of Guadalupe Hidalgo in 1848 ensured that the land grants would be honored. In 1852 a claim for Rancho Santiago de Santa Ana was filed with the Public Land Commission as required by the Land Act of 1851, and the grant was patented to Bernardo Teodoro and Ramón Yorba in 1883. The Yorba family sold the Rancho to José Antonio Andrés Sepúlveda in 1854 and Sepúlveda later lost the lands due to bankruptcy caused by trying to uphold his land claims in court. Sepúlveda also filed a land claim for Rancho San Joaquin in 1852, which was patented to José Sepúlveda in 1867. In 1864 Sepúlveda sold his lands to Benjamin and Thomas Flint, Llewellyn Bixby and James Irvine.

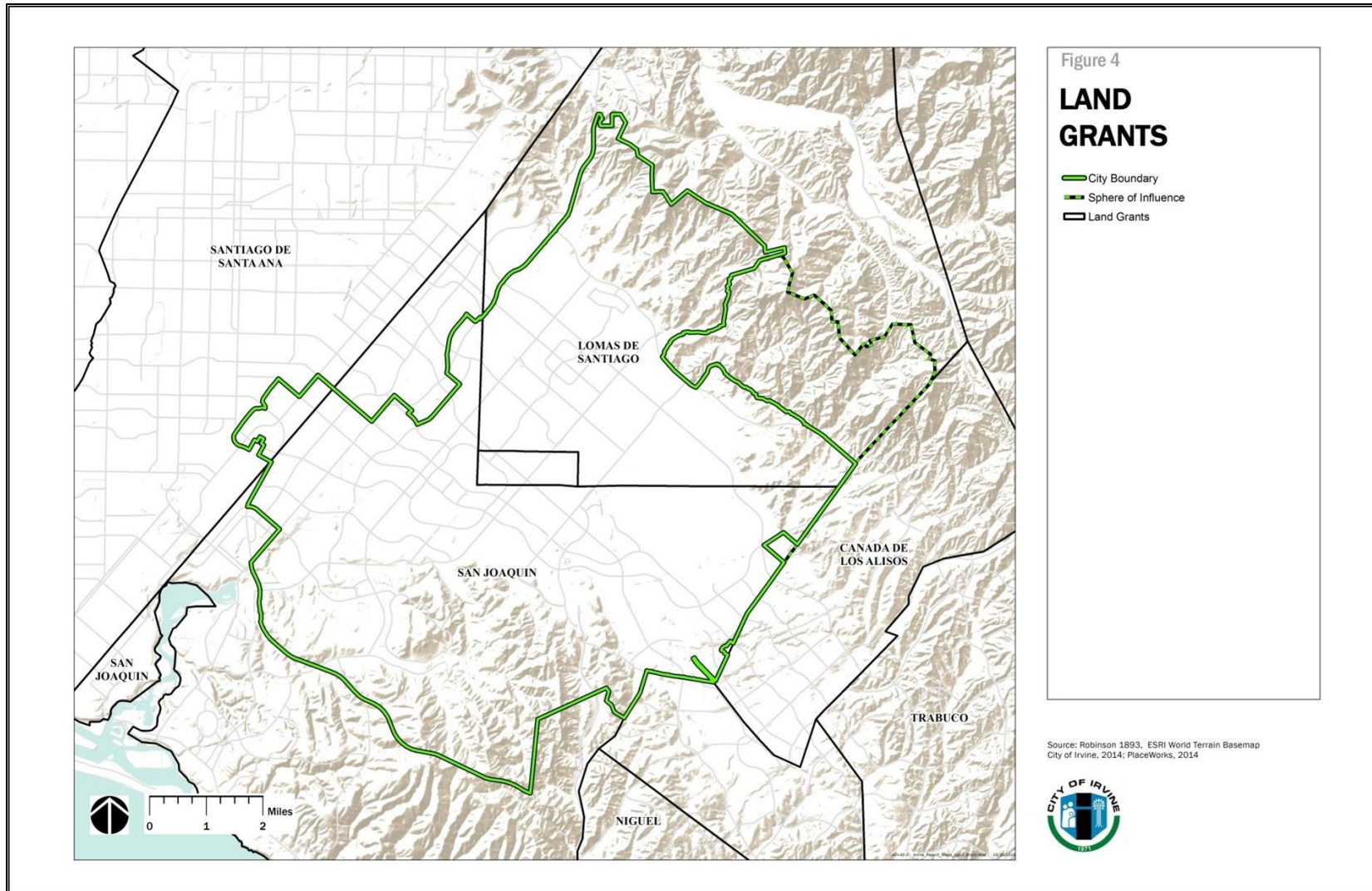
In 1876, James Irvine bought out his partners in Flint, Bixby and Co. and became the sole owner of the Irvine Ranch. It continued to be largely a ranching operation for many years. James Irvine and James McFadden played pivotal roles in the history of the City of Irvine. James Irvine was the largest landholder in the region and was interested in identifying the most lucrative agricultural uses for the enormous tract of land. When he died in 1886, James II took control of the ranch and increased its agricultural production. In 1894 James Irvine II incorporated the land holdings as the Irvine Company.

In 1899, the newly formed San Joaquin School District approached James Irvine with the intent to build a school for the children of his ranch tenant. A spot was chosen, upon which the school house was raised. In 1911, the school and land upon which it resided was donated by Irvine to Orange County. By this point 100 pupils were enrolled in the school. The same year in 1899, a post office was opened in a boarding house across the street from the school. Irvine named the post office “Myford” after his young son (Liebeck 1990, Figure 5).

In 1909, Frederick Culver received Irvine’s permission to build a blacksmith shop near the ranch’s warehouse operations. The shop was used to maintain farm machinery as well as making buggy parts, wagon wheels, and horseshoes. By the beginning of the 20<sup>th</sup> century Irvine set aside 320 acres at the intersection of the Santa Fe Railroad tracks and Central Avenue for the purpose of developing a town for the residence of both his permanent and seasonal workers. In 1914, the Orange County town of Myford was renamed “Irvine” (Liebeck 1990).

While already the number one producer of lima beans in the world, the Irvine Ranch’s bean production reached its zenith during the First World War. In 1918, the ranch contained 60,000 acres of lima bean fields which produced 900,000 sacks equating to a total value of \$6 million. After WW1, the 1920s saw significant changes to the Irvine Ranch. The Irvine Service Station was enlarged to accommodate the area’s growing car culture and the town initially planned by Irvine saw an increase in housing for workers.

The Second World War saw to the end of the Irvine’s “Agricultural Empire” (Liebeck 1990). Seeking a site for the Navy’s air operations the Santa Ana Chamber of Commerce chose the Irvine Ranch’s prime 17,000-acre lima bean field. Despite Irvine’s attempts to offer the Navy alternative sites on his ranch the Navy refused and continued with the purchase of Irvine’s two of the best pieces of agricultural land. This resulted in the establishment of the El Toro Marine Corps Air Station and the Tustin Lighter-Than-Air base. The Navy’s purchase of Irvine’s land allowed for the Orange County Assessor’s Office to reassess the ranch’s property value. Up to this point, the ranch has paid a tax base far below those of other county lands and with the reassessment this advantage was soon removed (Liebeck 1990).



**Figure 4. Map of Land Grants**

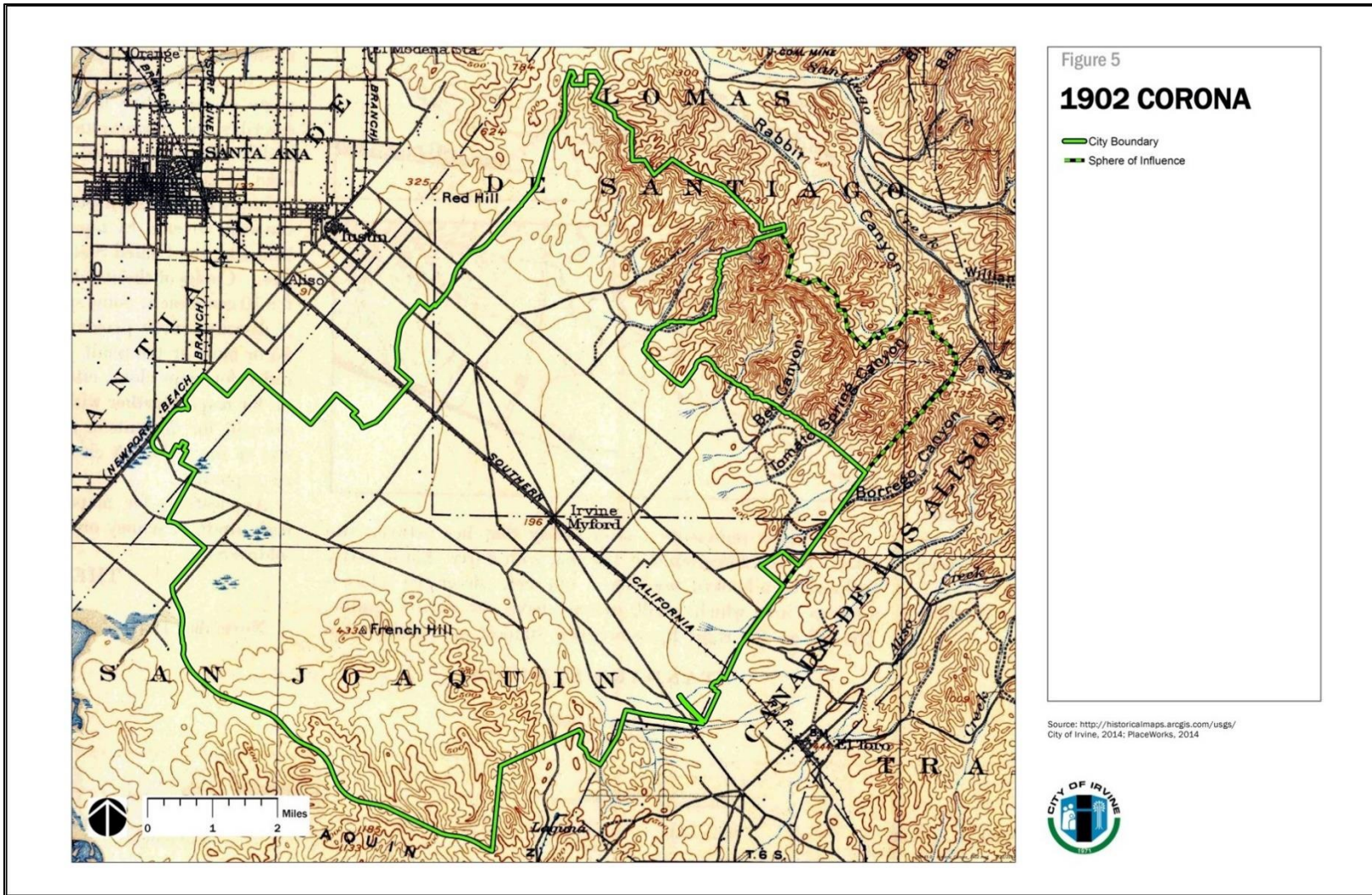


Figure 5. 1902 Corona Topographic Map

While the Irvine Ranch would continue to produce food for the war effort significant damage was incurred upon the fields surrounding the Tustin and El Toro bases as planes and rescue vehicles would cut through, tearing the crops to shreds (Liebeck 1990).

### **Modern Period**

As a result of the Second World War pressure mounted towards the development of urban areas in California. However, private farm owners such as the Irvine Company kept developers away from the central and south county. However, after James Harvey Irvine, Sr.'s death on August 24, 1947, control of The Irvine Company fell to his last remaining child Myford Plum Irvine. Unlike his predecessors, Myford did not have a passion for farming. Instead, Myford was interested in the development of residential communities. Under his guidance, Cameo Highlands, Irvine Terrace, Harbor View Hills, Cameo Shores, Westcliff Batcrest, and Irvine Cove in Laguna were developed (Liebeck 1990)

In 1957, Myford granted the first industrial lease on the Irvine Ranch to the Philco Corporation, a subsidiary of the Ford Motor Company. In 1957, representatives of the firm Pereira & Luckman were commissioned by the regents of the University of California System (U.C.S) to scout out possible locations for a new University as a reaction of major shifts in population towards southern Los Angeles. The firm decided on the Irvine Ranch as a choice location and intense negotiation underwent between the Irvine Company and regent of the U.C.S. (Liebeck 1990).

On January 11, 1959, Myford was found shot to death in the basement of the Irvine family home. The day of Myford's funeral Arthur McFadden was elected president of The Irvine Company. Under this new leadership, the company saw greater profit in the real-estate market and thus transitioned into full-scale property development (Liebeck 1990)

In 1960, the Irvine Company gifted 1,000 acres of land to the University of California with a provision for the sale of an additional 500 acres. The establishment of the University provided a central focus around which the company would create a master plan for the Irvine Ranch. To create this master plan, The Irvine Company hired William Pereira & Associates. The intent of Pereira was to prevent uncontrolled suburbanization of Ranch property and to keep out outside developers (Liebeck 1990).

Pereira divided the ranch into three sections: north, central, and south. The central section represented prime agricultural land, the north contained a remote mountainous region, and the southern basin. The southern basin was considered the top priority of urban development as it ran from the coast to the alignment of the 405 (San Diego) Freeway. Development of each community underwent meticulous planning as each "village" would include its own churches, shopping centers, and schools. The same attention to detail was utilized in master land-use plan in the development of the Irvine Industrial Complex and the Newport "downtown" Center.

Pereira's plan for the university outlined the campus as a large wheel. The park would include a lake and an amphitheater as "the focus of university life." The University of California at Irvine was dedicated on June 20, 1964. (Liebeck 1990)

In September 2, 1965, the "Old" Irvine town started by James Irvine at the turn of the century was renamed "East Irvine." At this time, much of the agricultural land on the ranch was being converted into housing tracts. Multiple electronic firms, aerospace companies, and research and development companies made their way to the Irvine Industrial Complex. Thousands of new job opportunities emerged and as many wealthy white-collar employees arrived so increased the need for comfortable residential neighborhoods. (Liebeck 1990)

In 1971, the Irvine Company campaigned for cityhood and in that same year the city of Irvine was incorporated. The new city's council's first act was to temporarily freeze all new development project within the city to reevaluate and revise the master plan. A consulting firm was hired to assist in the drafting of the 1973 Irvine General Plan. The following plan emphasized an increase in cycling, hiking, and equestrian trails, reduce car dependency, and increase access to recreational facilities. (Liebeck 1990)

In 1977, the Irvine Historical Society was formed and sought to protect historic structures on the Irvine Ranch. By 1981, the Irvine Historical Society discussed plans on the preservation of East Irvine. By 1990, after a series of buy-outs and lawsuits, the involvement of the Irvine family in the Irvine Company ceased when Joan Irvine Smith and her daughter Athalie Clark received \$149 million for their remaining shares in the company from Donald Bren. (Liebeck 1990)

According to the 2020 census, 307,665 people lived within the City. The census indicates that in 2020 Irvine had a total of 110,465 households. (U.S. Census Bureau n.d.)



## RECORD SEARCHES AND LITERATURE REVIEW

### PALEONTOLOGICAL

A search for paleontological records was completed by the Natural History Museum of Los Angeles County (LACM; McLeod 2018a; Appendix B). Published literature, unpublished paleontological reports, and fossil databases were also searched for fossil records (Appendix C). Databases included the Orange County Paleontology Database (OCPC 2018), the Paleobiology Database (PBDB 2018), the San Diego Natural History Museum (SDNHM 2018), and the University of California Museum of Paleontology (UCMP 2018).

A deficit in the data reported here was created by closure of the John D. Cooper Center by the County of Orange in May 2018. More recently, the former Cooper Center re-opened as the John D. Cooper Laboratory, and a record search request was submitted on April 18, 2023.

Unfortunately, the Cooper Lab has not responded to our request as of this reporting. The Cooper Lab maintains the database of fossils recovered in the County that we are not able to access. We list fossils by scientific and common name in Appendix C. When available, data of the location where the fossils were collected have been included. Please note that many entirely marine formations contain small numbers of land animal and plant fossils that were washed down streams into the ocean.

Sediments that are geologically young (artificial fill, Holocene sediments) or heat altered (El Modeno Volcanics) do not contain fossils. Landslides of any age may contain fossils; however, sediment jumbling makes it frequently difficult to determine stratigraphic context. This results in variable significance of the specimens. The rest of the formations have produced fossils from within the City. In some cases, the units or members were not listed in the literature or databases. Formations are discussed from oldest to youngest.

**Williams Formation.** Two localities are known from the Pleasants Sandstone Member and 53 are known from the undifferentiated sediments. These have produced marine invertebrates including ammonites, crabs, bivalves, gastropods, sea urchins, and sand dollars. Marine vertebrates known are including sharks, fishes and turtles. Plant fossils including wood and leaves have also been recovered.

**Silverado Formation.** Two localities are known within the City. These produced a sea tortoise and a leaf, possibly of a willow.

**Santiago Formation.** Within the City, one locality is known based on currently available information. It produced fossils of a crocodile and plants.

**Sespe-Vaqueros Formation.** A minimum of 38 localities are known within the City. These have produced marine vertebrates including baleen whales, toothed whales, fishes, sharks and rays. Marine invertebrates include brachiopods, bivalves, gastropods, crabs, and sand dollars. Terrestrial vertebrates known are rodents, shrews, birds, snakes and lizards. Plant fossils include wood, palm fronds and tree leaves.

**Vaqueros Formation.** Eight localities are known within the City based on information currently available. These have produced baleen whale, bivalves, and gastropods.

**Topanga Group.** A minimum of three localities are known in the City. They have produced fossils of fishes, sharks, sea urchins, algae, and terrestrial leaves.

**Monterey Formation.** Localities within the City number 28. These localities have produced vertebrate fossils of baleen and toothed whales, pinnipeds, fishes, and sharks. Invertebrates known include marine bivalves and crabs. Tree leaves of many species are also known.

**Puente Formation.** A minimum of three localities are known in the City. These have produced fishes and terrestrial leaves.

**Capistrano Formation.** Three localities are known in the City. These localities have produced fossils of baleen whale, sea cow, walrus, and fur seal.

**Niguel Formation.** Two localities are known from the Niguel Formation within the City. These localities have produced fossils of fish, sharks, and marine invertebrates.

**Pleistocene deposits.** These fossils are listed by time period due to lack of geological detail in most records which would permit discussion by sediment unit. About forty localities are known based on currently available information. Abundant terrestrial fossils have been recovered from the San Joaquin Marsh area between MacArthur Blvd, Highway 405, and San Diego Creek. These localities have produced fossils of mammoth, mastodon, giant ground sloth, ancient bison, horse, tapir, camel, llama, diminutive pronghorn, dire wolf, coyote, bear, American lion, and saber-toothed cat along with bats, rodents, birds, reptiles, and amphibians. Additionally, six localities within the City have produced marine bivalve invertebrates from approximately 60 feet deep just north of Jamboree and Michelson (Cogstone 2018).

**CULTURAL**

**CALIFORNIA HISTORIC RESOURCES INVENTORY SYSTEM**

The purpose of the records search is to identify all previously recorded cultural resources (prehistoric and historic archaeological sites, historic buildings, structures, objects, or districts) within the Project Area. All cultural resources, as well as cultural resource surveys, performed within the city boundaries were reviewed.

Shannon Lopez performed a search for archaeological and historical records on the September 24 and 25, 2018 at the South Central Coastal Information Center (SCCIC) of the California Historical Resource Inventory System (CHRIS) located on the campus of the California State University, Fullerton. The record search covered the entire area within the boundaries of the City of Irvine. The search radius included El Toro, San Juan Capistrano, Laguna Beach, Tustin, Orange, and Black Star Canyon 7.5-minute topographic quad maps.

The results of the record search indicated that 647 prior studies were located within the City (Appendix D). The records search also determined 379 previously recorded cultural resources are located within the City boundaries, which are summarized in the tables below (Table 4; Appendix E).

**Table 4. Cultural Resources within the City of Irvine by Type**

<b>Resource Type</b>	<b>Quantity</b>
Prehistoric Site	216
Prehistoric Isolate	85
Multi-Component Site	9
Multi-Component Isolate	1
Unknown Isolate	1
Historic Resource	62
Historic Site	2
Historic Isolate	3
<b>Grand Total</b>	<b>379</b>

Well known prehistoric villages were centered around Turtle Rock and Tomato Springs but others were numerous in the marsh, hills and mountains. Historic resources by contrast are mostly on the plain and include Mexican period resources like the Don Jose Sepulveda adobe, American period resources like the San Joaquin Gun Club and early 20<sup>th</sup> century buildings including homes.

**OTHER SOURCES**

In addition to the SCCIC records search, a variety of sources were consulted in October 2018 to obtain information regarding the cultural context of the City of Irvine. Sources included the National Register of Historic Places (NRHP) and the California Register of Historic Resources (CRHR) which includes the California Historical Resources Inventory (CHRI)<sup>1</sup>, California Historical Landmarks (CHL), and California Points of Historical Interest (CPHI). The Bureau of Land Management (BLM) General Land Office records were also searched.

Four buildings within the City are listed on the NRHP and the CRHR (Table 8). Eight properties are listed on the CHRI (Table 5). One area has a CHL plaque (Table 8). Three areas have CPHI plaques. The Orange County Parks lists the Irvine Ranch Historic Park. The City of Irvine lists 19 historically important properties.

**Table 5. Additional Sources Consulted**

Source	Results
Historic USGS Topographic Maps	Positive. See historic setting section.
Historic US Department of Agriculture Aerial Photographs	Positive. See historic setting section.
National Register of Historic Places (NRHP)	Positive: (1) NRL#:77000319, “Frances Packing House”, Listed 8/2/1977. (2) NRL#: 86000068, “Irvine Bean and Growers Association Building”, Listed 1/13/1986. (3) NRL#: 86000452, “Irvine Blacksmith Shop”, 3/20/1986. (4) NRL#: 93000300, “Christ College Site”, 4/16/1993.
California Register of Historic Resources (CRHR)	Positive: (1) “Frances Packing House”, (2) “Irvine Bean and Growers Association Building”, (3) “Irvine Blacksmith Shop”, (4) “Christ College Site”.
California Historical Resource Inventory (CHRI)	Positive: (1) Tustin USAR Center, 1963; (2) Christ College Site; (3) Val Verde Sportsmen's Club, 1924; (4) The Echberria Home, 1925; (5) Buffalo Ranch/ Urnabus Square, 1962; (6) Agricultural Shed, 1930; (7) Transi Housing; Irvine Hotel, 1913; (8) South Coast Gun Club, 1945
California Historical Landmarks (CHL)	Positive: Plaque #: 1004 “Old Town Irvine”, Listed 11/8/1991.
California Point of Historical Interest (CPHI)	Positive: (1) Plaque #: P753, “Irvine Bean and Grain Growers Building”, Listed 8/8/1991. (2) Plaque #: P630, “Irvine Historical Society Museum/ Rancho San Joaquin Headquarters., Listed 5/31/1984. (3) Plaque #:P485, “Irvine Park”, Listed 9/1/1976.
County of Orange	Positive: OC Parks: Irvine Ranch Historic Park.
Irvine Historic Resources List	(1) Lambert Reservoir, (2) First Irvine Office/ Ranch Headquarters, (3) Irvine Family Home Site and Gardens, (4) C.F. Kraus Residence, (5) Irvine Employee Housing, (6) Irvine Community Center/ Public School, (7) Irvine Bean Warehouse, (8) East Irvine Garage and Service Station, (9) A.T.S.F. Station, (10) East Irvine Post Office/ General Store/ Blacksmith Shop, (11) Dirigible Hangars “Lighter Than Air” Base, (12) Live Oaks-Laguna Canyon Road, (13) Site of Michelson Vacuum Tube (Speed of Light Experiments), (14) First Home in University Park, (15) French Hill-AKA, Turtle Rock, (16), Martin Airport (original site of Orange County Airport), (17) San Joaquin Marsh/Peat Bogs, (18) Bommer Canyon Cattle Camp, (19) Urbanus Square (Old Buffalo Ranch).

<sup>1</sup> The CHRI has been replaced by the California Built Environment Resource Database (BERD)

## **SENSITIVITY**

### **PALEONTOLOGICAL SENSITIVITY**

Previous City documents used a four-tiered ranking system to assess the sensitivity of sediments for fossils (General Plan Element E). Using the City's system, geologic units are classified according to the relative abundance of vertebrate fossils or scientifically significant invertebrate or plant fossils and their sensitivity to adverse impacts within the known extent of the geological unit (Table 6, Figure 6). Although significant localities may occasionally occur in a geologic unit, a few widely scattered important fossils or localities do not necessarily indicate a higher potential; instead, the relative abundance of localities is intended to be the major determinant for the value assignment. Thousands of fossils have been recovered within the City boundaries.

The Vaqueros, Sespe-Vaqueros, Sespe, Monterey, Puente and Capistrano Formations are assigned a high sensitivity. Formations assigned a moderate sensitivity include the Williams Formation Pleasants Sandstone Member, the Santiago Formation, the Topanga Group, the undifferentiated Puente Formation, and the Pliocene Niguel Formation.

Pleistocene sediments generally lie beneath young sediments with no fossils. Shallow excavations should not impact Pleistocene fossils. Because the presence of Pleistocene fossils has been demonstrated we have ranked the sediments as moderate.

The Silverado Formation has a low sensitivity along with young sediments. The El Modeno Volcanics and artificial fill are assigned no sensitivity (Table 6).

All three Focus Areas are mapped as moderate sensitivity for fossils with small areas of high sensitivity in Focus Areas 2 and 3.

**Table 6. Paleontological Sensitivity Rankings**

Age	Unit Name	City Paleontological Sensitivity Zones			
		none	low	moderate	high
modern	artificial fill (Qaf)	X			
late Holocene	very young landslide (Qls, Qls?)		X		
	very young slope wash (Qsw)		X		
Pleistocene	unlisted			X <sup>1</sup>	
late Pleistocene to Holocene	young axial-channel (Qya)			X <sup>1</sup>	
	young colluvium (Qyc)		X		
	young alluvial-fan (Qyf)			X <sup>2</sup>	
	young landslide (Qyls?)		X		
middle to late Pleistocene	old paralic and alluvial fan (Qopf)			X <sup>1</sup>	
early to middle Pleistocene	very old axial-channel (Qvoa)			X <sup>1</sup>	
	very old alluvial-fan (Qvof)			X <sup>2</sup>	
Pliocene	Niguel Fm. (Tn)			X	
late Miocene to early Pliocene	Capistrano Fm., Oso Mbr. (Tco)			X <sup>1</sup>	X
late Miocene	Puente Fm	La Vida Mbr. (Tplv)			X
		Soquel Mbr. (Tpsq)			X
		unlisted			X
	Monterey Fm. (Tm)			X	
middle Miocene	Topanga Group	Paulerino Fm. (Ttp)			X
		Los Trancos Fm. (Ttlr)			X
		Bommer Fm. (Ttb)			X
		unlisted			X
	El Modeno Volcanics (Tiemd, Tiemd?)	X			
latest Oligocene to latest early Miocene	Vaqueros Fm. (Tv)				X
	Sespe-Vaqueros Fm. (Tvs)				X
late Eocene to early Miocene	Sespe Fm. (Ts)				X
middle Eocene	Santiago Fm. (Tsa)			X	
Paleocene	Silverado Fm. (Tsi)		X		
Late Cretaceous	Williams Fm., Pleasants Sandstone Mbr. (Kwps)			X	

Fm. - Formation

Mbr. - Member

<sup>1</sup> Indicates that the unit has low sensitivity at depths of less than 8 feet.

<sup>2</sup> Indicates that the low sensitivity in Mtns and increases to moderate sensitivity on the plain.

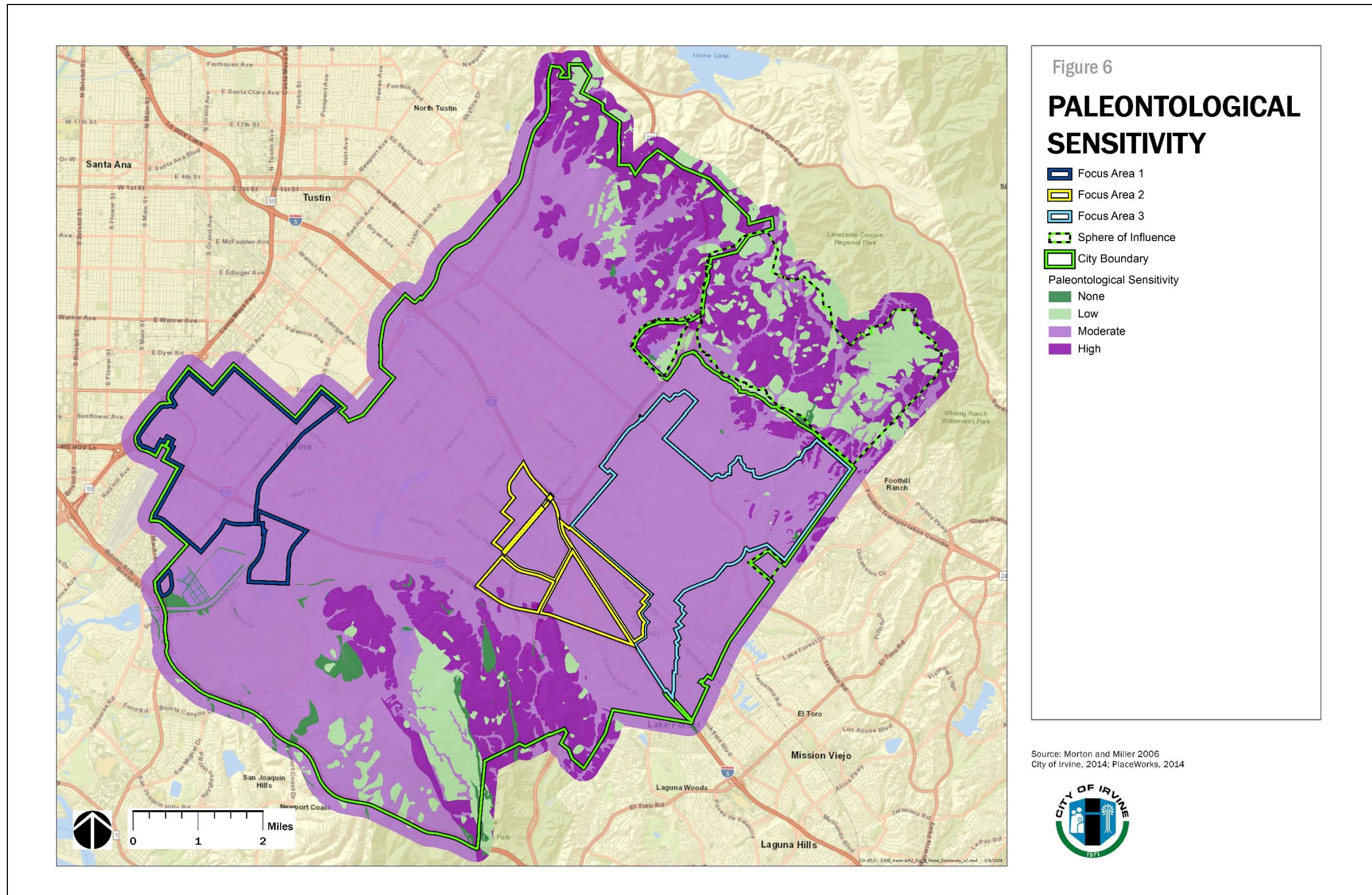


Figure 6. Paleontological Sensitivity of the City

## **ARCHAEOLOGICAL SENSITIVITY**

Prehistoric site locations are confidential to protect them from vandalism. All known sites were mapped to help establish sensitivity rankings. Prehistoric sites are most abundant in the San Joaquin Marsh area and San Joaquin Hills, both south of Interstate 405 (I-405). Sites are also abundant along what were, at the time, permanent water sources such as creeks and springs northeast of Irvine Blvd. Only ten sites are known on the plain between I-405 and Irvine Blvd. On this basis we rank the areas south of I-405 and north of Irvine Blvd. as highly sensitive and the plain in between as less sensitive (Figure 7). All known sites have been mitigated. Unknown resources may be present.

Only two historical archaeological sites have been recorded in Irvine. Both are in the eastern portion of the City and consisted of historic domestic refuse. Due to the low number of sites, no sensitivity map was created.

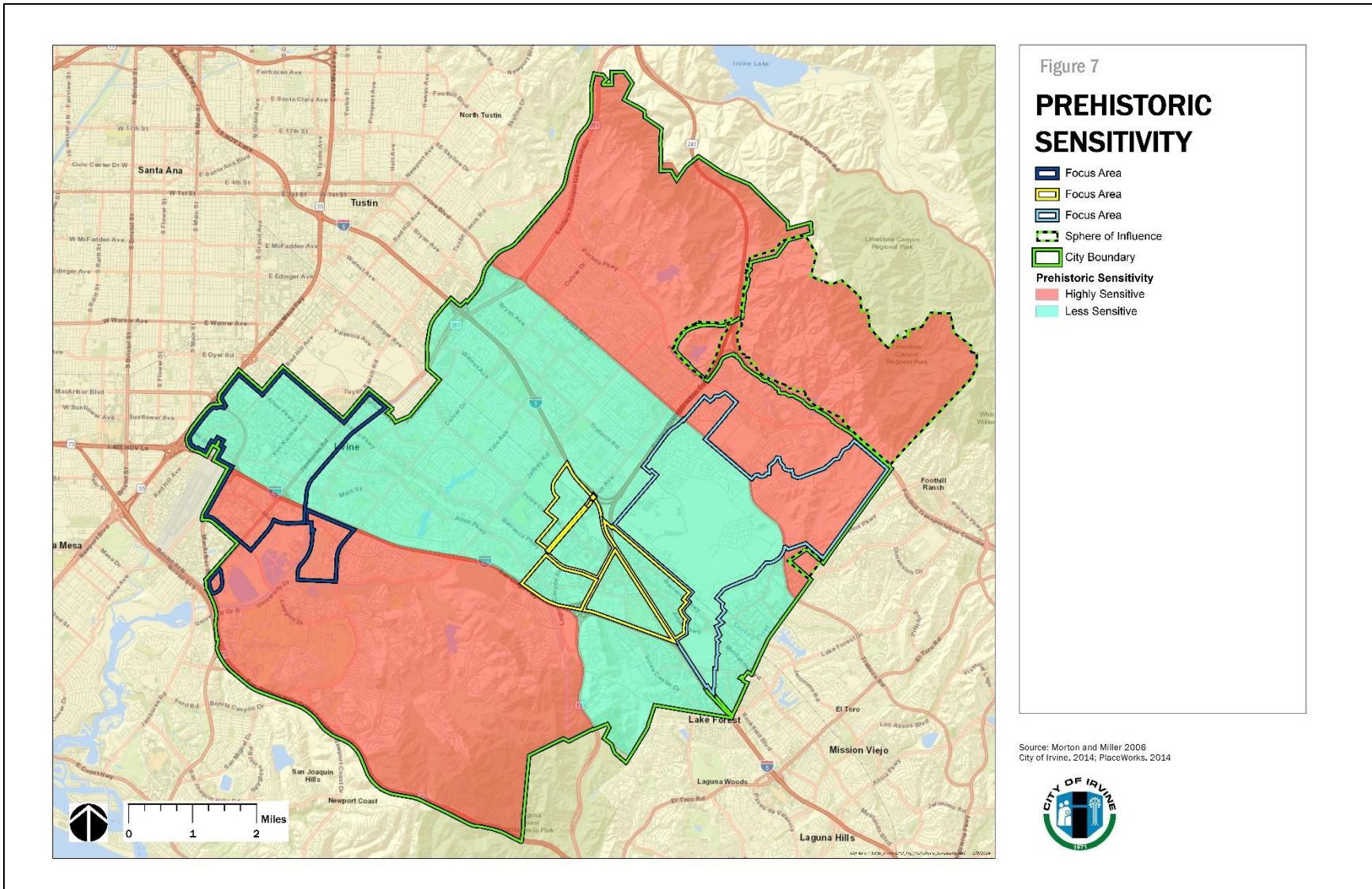
Portions of Focus Areas 1 and 3 are mapped as highly sensitivity for prehistoric archaeological sites. Focus Area 2 is mapped entirely as less sensitive for prehistoric archaeological sites.

## **HISTORICAL SENSITIVITY**

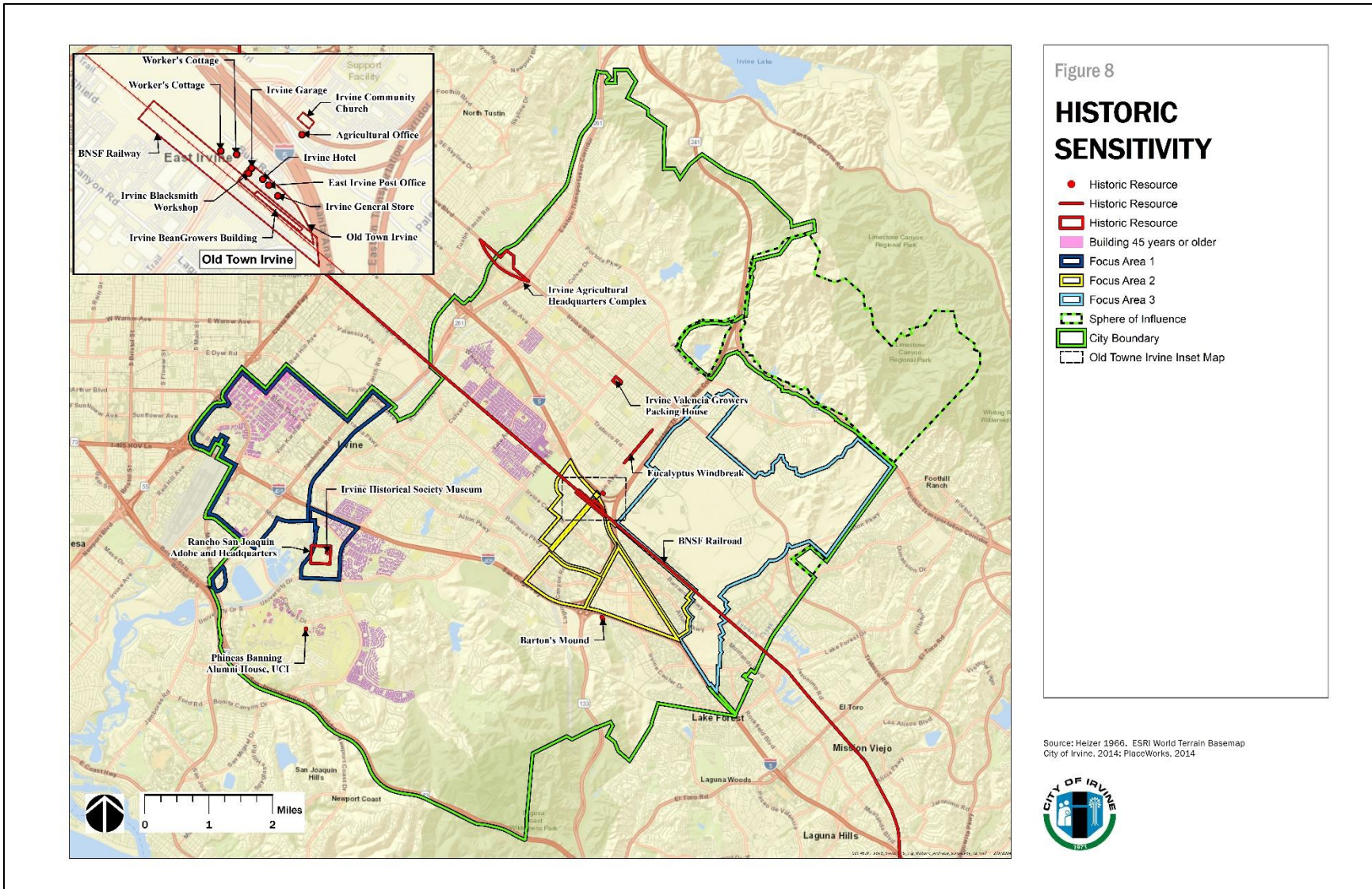
Historical resources include current and former locations of historic buildings, historical archaeological sites (often near historic use areas) and the location of extant historic homes more than 45 years old (Figure 8). Old Town Irvine has the highest number of historic buildings. Other resources north of I-405 include the railroad, a eucalyptus windbreak, Valencia Growers Packing House and the Irvine Agricultural Headquarters Complex. South of I-405 they include the Rancho San Joaquin Adobe, the San Joaquin Gun Club, Phineas Banning House, Bommer Canyon Cattle Camp and Barton's Mound. Only those that have been determined to be significant under CEQA are mapped (Figure 8).

All Focus Areas have historical resources located within their boundaries. Focus Area 2 has the most resources due to Old Town Irvine's location within its boundary. Focus Area 1 includes concentrated areas of buildings 45 years or older.





**Figure 7. Prehistoric Sensitivity**



**Figure 8. Historic Resources Sensitivity**

## MITIGATION MEASURES

Future proposed projects within the City of Irvine have the potential to impact paleontological and cultural resources. The following mitigation measures are recommended.

**MM GEO-1.** City staff shall require applicants for future proposed ground disturbing projects in undisturbed sediments ranked moderate or above to either (1) provide a technical paleontological assessment consisting of a record search, survey, background context and project specific recommendations performed by a qualified paleontologist (with a graduate degree and a specialization in vertebrate paleontology) or (2) agree to monitoring all excavations below five feet. If resources are known or reasonably anticipated the recommendations shall provide a detailed mitigation plan requiring monitoring during grading and other earthmoving activities in undisturbed sediments. The plan will establish a fossil recovery protocol that includes data to be collected, requires professional identification, radiocarbon dates and other special studies as appropriate and requires curation at local curation facility such as such as the John D. Cooper Center operated by the County of Orange for fossils meeting significance criteria. A comprehensive final mitigation compliance report including a catalog of fossil specimens with museum numbers and an appendix containing a letter from the museum stating that they are in possession of the fossils shall be required.

**MM CUL-1.** City staff shall require applicants for future proposed projects with intact extant building(s) more than 45 years old to provide a historic resource technical study evaluating the significance and data potential of the resource. If significance criteria are met, detailed mitigation recommendations are required as part of the technical study. All work shall be performed by a qualified architectural historian meeting Secretary of the Interior Standards.

**MM CUL-2.** City staff shall require applicants for future proposed ground disturbing projects to either (1) provide a technical cultural resources assessment consisting of a record search, survey, background context and project specific recommendations performed by a qualified archaeologist meeting Secretary of the Interior Standards and certified by the County of Orange or (2) agree to full-time monitoring by an archaeologist and a Native American. If resources are known or reasonably anticipated the recommendations shall provide a detailed mitigation plan which shall require monitoring during grading and other earthmoving activities in undisturbed sediments. The plan will provide a treatment plan for potential resources that includes data to be collected, requires professional identification, other special studies as appropriate, and requires curation at a repository for artifacts meeting significance criteria. A comprehensive final mitigation compliance report including a catalog of specimens with museum numbers and an appendix containing a letter from the museum stating that they are in possession of the materials shall be required.

**MM CUL-3.** Unanticipated discoveries of human remains shall require immediate cessation of ground disturbance within 50 feet and notification to City staff and the Coroner and shall follow state law as stated in Health and Safety Code Section 7050.5 and Public Resources Code Section 5097.98.

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**APPENDIX A. QUALIFICATIONS**

**EDUCATION**

2009 M.A., Anthropology, Kent State University, Kent, Ohio  
2006 B.A., Anthropology, Ohio State University, Columbus, Ohio

**EXPERIENCE**

Ms. Valasik serves as Cogstone’s CEO and CFO and helps guide the vision and direction of Cogstone. She has been with the company since 2009 and has helped transition Cogstone from sole ownership to multiple owners with an active board of directors. Ms. Valasik is a Registered Professional Archaeologist (RPA) with 15 years of experience. She is a skilled professional who is well-versed in the compliance procedures of the California Environmental Quality Act (CEQA), the National Environmental Policy Act (NEPA), and Sections 106 and 110 of the National Historic Preservation Act (NHPA) and regularly prepares cultural resources assessment reports for a variety of federal, state, and local agencies throughout California. Ms. Valasik has managed a variety of projects at Cogstone in the water, transportation, energy, development, and federal sectors. She meets the qualifications required by the Secretary of the Interior’s *Standards and Guidelines for Archaeology and Historic Preservation*. She is accepted as a Principal Investigator for prehistoric archaeology by the State Historic Preservation Office (SHPO) and is listed as a Principal Investigator on Cogstone’s Bureau of Land Management (BLM) Cultural Resource Use Permit.

**SELECTED PROJECTS**

**Laguna Niguel General Plan Update, City of San Juan Capistrano, Orange County, CA.** Cogstone reviewed and summarized available information regarding known paleontological, archaeological, and historical resources within the City of Laguna Niguel to support the General Plan Update Project. Cogstone conducted a Sacred Lands File search from the Native American Heritage Commission (NAHC), cultural and paleontological resources records searches, and consultation with local historical societies. A Cultural and Paleontological Resources Assessment report was prepared that outlined culturally sensitive areas within the city and included recommendations for mitigation. The City of San Juan Capistrano was the lead agency under the California Environmental Quality Act (CEQA). Sub to De Novo Planning Group. Project Manager. 2023

**Camino Capistrano Mixed-Use Project, City of San Juan Capistrano, Orange County, CA.** Cogstone conducted a cultural and paleontological resources assessment to determine the potential impacts to cultural and paleontological resources during the project, which consisted of the retention and rehabilitation of two National Register of Historic Places (NRHP)-listed adobe buildings; reconstruction of a contributing barn that was recently dismantled and stored onsite; removal, offsite relocation, and rehabilitation of a second contributing barn that is extant; and the construction of three new buildings. The project area and vicinity are known to be archaeologically sensitive areas. Cogstone’s services included records searches, a Sacred Lands File search from the Native American Heritage Commission (NAHC), a pedestrian survey, and the preparation of a Cultural and Paleontological Resources Assessment Report. Site updates were prepared on California Department of Parks and Recreation (DPR 523) forms for the two previously recorded adobe buildings. The City of San Juan Capistrano was the lead agency under the California Environmental Quality Act (CEQA). Sub to 31871 Camino Capistrano LLC. Principal Archaeologist. 2023-ongoing

**City of San Juan Capistrano, In-N-Out 31791 Del Obispo Street, San Juan Capistrano, CA.** Cogstone conducted a Historic Resources Project Review to determine potential impacts to historical resources resulting from the proposed construction of a 3,897 square foot In-N-Out Restaurant with a drive-through and related site improvements on two adjoining lots totaling 1.77 acres. Cogstone’s services included a cultural resources records search, built environment survey, updates to existing DPR 523 forms, National Register of Historic Places (NRHP) eligibility assessments, and preparation of a Historic Resource Project Review Report. Cogstone also reviewed design plans of the proposed commercial building for compatibility with the NRHP-listed Blas Aguilar Adobe and attended an in-person public hearing with the public and the San Juan Capistrano Cultural Heritage Commission. The assessment was completed in compliance with the requirements of CEQA with the City of San Juan Capistrano as the lead agency under CEQA. Project Manager. 2021

#### **EDUCATION**

2013 M.S., Biology with a paleontology emphasis, California State University, San Bernardino  
2000 B.S., Geology with paleontology emphasis, University of California, Los Angeles

#### **SUMMARY QUALIFICATIONS**

Scott has over 29 years of experience in California as a paleontologist and sedimentary geologist. She has worked extensively in the field surveying, monitoring, and salvaging fossils on hundreds of projects. In addition, she has special skills in jacketing large fossils, fossil preparation (cleaning and stabilization) and in the preparation of stratigraphic sections and other documentation for fossil localities. Ms. Scott frequently authors paleontological assessments, paleontological mitigation plans, and monitoring compliance reports to all agency requirements. She authors and conducts crew sensitivity training, serves as company safety officer, and has authored both the company safety and paleontology manuals. She is a Member of the Society of Vertebrate Paleontology and the Geological Society of America.

#### **SELECTED PROJECTS**

**Valley Boulevard Widening Project, City of Menifee, Riverside County, CA.** The City of Menifee proposed to widen the existing Valley Boulevard roadway and extend the roadway through two existing gaps, providing local residents with one continuous route. The project included raised medians, turn lanes, and seven new traffic signals at major intersections. Additionally, sidewalks and bike lanes would be constructed on both sides of the roadway. Soundwalls would be incorporated along the roadway where applicable. Cogstone conducted a paleontological resources assessment which consisted of records searches, a pedestrian survey, and preparation of a Paleontological Resources Assessment Report. The project area was determined to have a moderate potential for fossils, and Worker Environmental Awareness Program (WEAP) training was recommended for all construction personnel. The City of Menifee was the lead agency under the California Environmental Quality Act (CEQA). Sub to Dokken Engineering. Principal Investigator for Paleontology. 2022

**The Terraces Project, City of Murrieta, Riverside County, CA.** The purpose of this study was to determine the potential effect on paleontological resources by the Terraces Project, which involved construction of 900 apartment units in 12 four-story buildings on a 37.8-acre site. Parking spaces, a leasing center, clubhouse, swimming pool, various walking paths and green space areas, and a dog park or other outdoor open space area would be provided throughout the project site. Planned vertical impacts would be in excess of 10 feet during grading. Cogstone performed records searches, a pedestrian survey, and produced a Paleontological Resources Assessment Report. All work was done in compliance with the mitigation measures for the project. The City of Murrieta was the lead municipal agency under CEQA. Sub to Birdseye Planning Group, LLC. Principal Investigator for Paleontology. 2021-2022

**Purple Line Extension (Westside Subway) Sections 1 and 2 Construction Management, Los Angeles County Metropolitan Transportation Authority, Los Angeles, Los Angeles County, CA.** The project involves construction of seven stations from the existing Purple Line at Wilshire/Western Avenue along Wilshire Boulevard to the Veterans Administration Hospital in Westwood for 8.6 miles. Cogstone manages all paleontological services for Sections 1 and 2 of the subway project including budgets, WEAP training, monitoring, fossil recovery, fossil preparation, identification, cataloguing curation with the Natural History Museum of Los Angeles County, and reporting. Sub to JV West (Stantec/Jacobs JV; Section 1), AECOM (Section 2). Principal Investigator for Paleontology. 2014-*ongoing*

**Cold Canyon Landfill Expansion Module 12, Arroyo Grande, San Luis Obispo County, CA.** Cogstone conducted archaeological and paleontological resources monitoring for the expansion of an existing landfill. In addition, Cogstone provided WEAP training for all construction personnel. Upon completion of monitoring, Cogstone prepared a Cultural and Paleontological Resources Monitoring Compliance Report. Sub to Waste Connections, Inc. Principal Investigator for Paleontology. 2022

## **EDUCATION**

2009 B.A., Archaeology/History, Simon Fraser University, Canada

## **SUMMARY QUALIFICATIONS**

Ms. Hickman is a qualified archaeologist and cross-trained paleontologist with over 11 years of experience in pedestrian survey, monitoring, excavation and burial recovery, as well as the identification of human and faunal skeletal remains. She is proficient in the preparation of cultural resources assessment reports for a variety of federal, state, and local agencies throughout California and the eastern United States. Ms. Hickman is responsible for the organization of field data, supervision, preparing California Department of Parks and Recreation 523 (DPR 523) forms, as well as identifying and cataloging prehistoric and historic artifacts. She also has experience with preparing artifact collections for curation at a variety of different repositories throughout California and the eastern United States.

## **SELECTED PROJECTS**

**Pacific Gas and Electric (PG&E) Master Services Agreement, Statewide, CA.** Cogstone was sub-contracted to provide on-call cultural resources monitoring services for various PG&E projects throughout California. Cogstone has conducted archaeological monitoring for over 30 task orders. In addition, Cogstone assisted in burial recovery and repatriation of human remains in consultation with the Most Likely Descendant (MLD), PG&E, and Cardno on one project. Sub to Cardno (now Stantec). Project Manager/Supervisor. 2019-2022

**Southern California Edison (SCE) Environmental Clearance On-Call Program, Statewide, CA.** Cogstone was subcontracted to provide on-call cultural resources monitoring services for various SCE projects throughout California. Projects have included new pole and tower placements, existing pole and tower replacements, vegetation clearance, underground repairs, and general maintenance. Cogstone has conducted archaeological monitoring and surveys, GIS mapping, and prepared technical reports for over 130 task orders. Sub to Cardno (now Stantec). Project Manager/Supervisor. 2018-2021

**New Cuyama Dump Sites 1, 2, and 3, Bureau of Land Management (BLM) Bakersfield Office, Santa Barbara County, CA.** The Project involved identifying archaeological and historical resources present within three illegal dump sites on BLM land. This study included an assessment of the historic potential of dump refuse and National Register of Historic Places (NRHP) eligibility recommendations for debris demonstrating affirmative evidence for an age of greater than 45 years. A Class III Cultural Resources survey was conducted and included an intensive-level pedestrian survey of the Area of Potential Effect (APE) with no larger than ten-meter-wide transects when used. Smaller transects were used in narrower areas of the APE and during investigations of newly identified archaeological sites and isolates. A total of three historic trash scatters were identified during the survey and a total of four historic isolates were identified. These resources were recorded on Department of Parks and Recreation 523 (DPR 523) forms. No archaeological sites or isolates were identified. No artifacts were collected. Cogstone was able to meet the scheduled deadlines for the Project and completed the work within the budget. The deliverables were accepted by the BLM without revisions. Project Manager and Archaeologist. 2020-2021

**Morro Bay Water Facility, City of Morro Bay, San Luis Obispo County, CA.** The City of Morro Bay has proposed to construct a new water reclamation facility. Federal funding for the project required compliance with Section 106 of the NHPA along with the California Environmental Quality Act (CEQA). The United States Environmental Protection Agency (EPA) acted as federal lead and the City acted as state lead agency, with permitting by the California Coastal Commission (CCC), California Department of Transportation (Caltrans), and the State Water Resources Control Board. Cogstone conducted Workers Environmental Awareness Program (WEAP) trainings for all construction personnel, cultural and paleontological resources monitoring, and prepared a Cultural Resources Monitoring Compliance Report upon completion of construction. Sub to Filanc Black & Veatch Joint Venture. Supervisor. 2020-2021



**EDUCATION**

2018 Geographic Information Systems (GIS) Certificate, California State University, Fullerton  
2003 B.A., Anthropology, University of California, Santa Barbara

**SUMMARY OF QUALIFICATIONS**

Mr. Freeberg has over 20 years of experience in cultural resource management and has extensive experience in field surveying, data recovery, monitoring, and excavation of archaeological and paleontological resources associated with land development projects in the private and public sectors. He has conducted all phases of archaeological work, including fieldwork, laboratory analysis, research, and reporting. Mr. Freeberg also has a strong grounding in conventional field and laboratory methods and is skilled in the use of ArcGIS.

**SELECTED PROJECTS**

**Bell Gardens Water Reservoir Project, City of Bell Gardens, Los Angeles County, CA.** Cogstone conducted a cultural and paleontological resources assessment to determine the potential impacts to cultural and paleontological resources during improvements which included a new two-million-gallon reservoir, booster pump station, well to be drilled, and other components. Services included record searches, Sacred Lands File search from the Native American Heritage Commission, and an intensive pedestrian survey of the 1.7-acre project area. Sub to Infrastructure Engineers. GIS Supervisor. 2019-2020

**Santiago Canyon Estates Fuel Mod Project, unincorporated Orange County, CA.** Cogstone conducted a cultural resources assessment to determine the potential for surface cultural resources for compliance with Orange County Fire Authority's Precise Fuel Modification Plan for zones of the Santiago Canyon Estates Community. Services included a cultural resources records search, Sacred Lands File search from the Native American Heritage Commission, and a reconnaissance survey. Sub to Fire Safe Council East Orange County Canyons. GIS Supervisor. 2020

**State Route 108/Highway 49 and Mackey Ranch Road Intersection Improvements Project, Caltrans District 10, Tuolumne County, CA.** The Chicken Ranch Rancheria of Me-Wuk Indians of California (Tribe), in partnership with the California Department of Transportation (Caltrans), proposed to replace an intersection and convert to a roundabout designed to accommodate forecasted future traffic volumes and provide an alternative access route to the Chicken Ranch Rancheria. Cogstone completed an intensive-level pedestrian survey, CHRIS records search, sacred lands file search from the NAHC, Native American consultation, consulted with local history societies and preservation groups, and produced a Historical Resources Compliance Report (HRCR) and Archaeological Survey Report (ASR). Sub to Foothill Associates. GIS Supervisor. 2019-2020

**Dogwood Road Project, City of El Centro, Imperial County, CA.** Cogstone conducted a cultural resources assessment to determine the potential effects to cultural resources resulting from the construction of United States Department of Agriculture (USDA) Part 70-B RD Funding assisted housing on a 2.2-acre parcel. Cogstone conducted a record search, pedestrian survey, and determined that no further cultural resources work was necessary. The assessment provided environmental documentation as required by Section 106 of the National Historic Preservation Act (NHPA) and the California Environmental Quality Act (CEQA). The City of El Centro acted as the lead agency. Sub to Partner Science & Engineering, Inc. GIS Supervisor. 2019-2020

**Laguna Creek Trail and Bruceville Road Project, Caltrans District 3, City of Elk Grove, Sacramento County, CA.** The City of Elk Grove, in cooperation with Caltrans, proposed multiple trail extensions and gap closures in effort to provide connecting links that would ultimately provide trail users with access to a vast system of trails, with connections to parks, schools, community centers, commercial retail and office areas, and transit facilities. Cogstone conducted pedestrian surveys, records search, and prepared an Archaeological Survey Report (ASR) and a Historic Property Survey Report (HPSR). Sub to Helix Environmental. GIS Supervisor. 2019-2020

## **EDUCATION**

- 2022 Certificate in Historic Preservation, The Boston Architectural College, Boston  
2018 M.A., History (with an emphasis in architecture), California State University, Fullerton  
2012 B.A., History, Minor in Asian-Pacific Studies, California State University, Dominguez Hills

## **SUMMARY QUALIFICATIONS**

Ms. Lopez is a qualified architectural historian with over five years of experience who meets or exceeds the Secretary of the Interior's Standards and Guidelines for Architectural History. Her experience includes architectural history research and surveys with photo documentation and recording of built environment resources for local and federal projects. She has extensive knowledge with Native American consultation, consultation with local and state historical societies, and in the analysis of primary and secondary sources. Ms. Lopez is acknowledged as an approved Architectural Historian by Caltrans and is listed as a Principal Investigator on Cogstone's Bureau of Land Management (BLM) Cultural Resources Use Permit. She is accepted as a Principal Investigator for Architectural History and History by the State Historic Preservation Office (SHPO). Additionally, she is an approved Reader at the Huntington Library by the Los Angeles Office of Historic Resources.

## **RELEVANT EXPERIENCE**

**San Gabriel River Commuter Bikeway and Big Dalton Wash Commuter Bikeway, City of Baldwin Park, Los Angeles County, CA.** Cogstone conducted a cultural and historic built environment resources assessment to determine the potential impacts to cultural and historical resources for the proposed construction of approximately five miles of new bikeway/pedestrian pathway. Services included pedestrian surveys, records searches, a Sacred Lands File search from the Native American Heritage Commission (NAHC), preparation of California Department of Parks and Recreation 523 (DPR 523) forms, National Register of Historic Places (NRHP) eligibility assessments, and reporting. The project required a Section 408 permit from the United States Army Corps of Engineers (USACE) due to the proximity of the federally managed San Gabriel River and tributaries. All work was completed in compliance with Section 106 of the National Historic Preservation Act (NHPA). The City of Baldwin Park acted as lead agency under the California Environmental Quality Act (CEQA). Sub to Infrastructure Engineering Corporation. Architectural Historian. 2020-2021

**Irwindale Concrete Tilt-Up Warehouse Building, City of Irwindale, Los Angeles County, CA.** Cogstone conducted an assessment to determine the potential impacts to cultural, historic built environment, and paleontological resources in compliance with the California Environmental Quality Act (CEQA) for the construction of an approximately 129,830 square foot stand-alone concrete tilt-up warehouse building with an office mezzanine. The project required the demolition of an existing building constructed in 1956. Cogstone's services included cultural and paleontological resources records searches, a Sacred Lands File search from the Native American Heritage Commission (NAHC), Assembly Bill 52 (AB 52) consultation support, and an intensive pedestrian survey. A Pepsi-Cola bottling plant constructed in the late 1950s was identified during the survey and was fully documented on California Department of Parks and Recreation 523 (DPR 523) forms and was evaluated for listing in the California Register of Historical Resources (CRHR). Cogstone prepared a Cultural and Paleontological Resources Assessment Report. The City of Irwindale was the lead agency for the project under CEQA. Sub to PlaceWorks. Architectural Historian. 2021

**City of San Juan Capistrano, In-N-Out 31791 Del Obispo Street, San Juan Capistrano, CA.** Cogstone conducted a Historic Resources Project Review to determine potential impacts to historical resources resulting from the proposed construction of a 3,897 square foot In-N-Out Restaurant with a drive-through and related site improvements on two adjoining lots totaling 1.77 acres. Cogstone's services included a cultural resources records search, built environment survey, updates to existing DPR 523 forms, NRHP eligibility assessments, and preparation of a Historic Resource Project Review Report. The assessment was completed in compliance with the requirements of CEQA with the City of San Juan Capistrano as the lead agency under CEQA. Architectural Historian. 2021

**APPENDIX B. PALEONTOLOGICAL RECORDS SEARCH RESULTS**



Natural History Museum  
of Los Angeles County  
900 Exposition Boulevard  
Los Angeles, CA 90007

tel 213.763.DINO  
www.nhm.org

Vertebrate Paleontology Section  
Telephone: (213) 763-3325

e-mail: [smcleod@nhm.org](mailto:smcleod@nhm.org)

2 October 2018

Cogstone Resource Management, Inc.  
1518 West Taft Avenue  
Orange, CA 92865-4157

Attn: Megan Wilson, Archaeologist & GIS Technician

re: Vertebrate Paleontology Records Check for paleontological resources for the proposed City of Irvine General Plan Update, Phase 2, Project, Cogstone Project # 4339, in the City of Irvine, Orange County, project area

Dear Megan:

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for the proposed City of Irvine General Plan Update, Phase 2, Project, Cogstone Project # 4339, in the City of Irvine, Orange County, project area as outlined on the portions of the Orange, Black Star Canyon, Tustin, El Toro, Laguna Beach, and San Juan Capistrano USGS topographic quadrangle maps that you sent to me via e-mail on 18 September 2018. We have at least 23 vertebrate fossil localities that lie directly within the boundaries of the proposed project area, and other localities nearby or at some distance from the same sedimentary deposits that occur in the proposed project area.

In the elevated terrain of the San Joaquin Hills in the southwestern portion of the proposed project area there are some exposures of intrusive igneous rocks that will not contain any recognizable fossils. From oldest to youngest the elevated terrain of the San Joaquin Hills also has exposures of the marine Paleocene Silverado Formation, the early Eocene Santiago Formation, the late Eocene through earliest Miocene Sespe Formation, the marine Eocene through earliest Miocene Vaqueros Formation and the marine middle Miocene Paulerino, Los Trancos, and Bommer Members of the Topanga Formation.

In the elevated terrain of the northern portion of the proposed project area, from the Loma Ridge area southeastward, there are exposures of the marine late Cretaceous Williams Formation, the marine Paleocene Silverado Formation, the early Eocene Santiago Formation, the late Eocene through earliest Miocene Sespe and Vaqueros Formations undifferentiated, the marine middle to late Miocene Monterey Formation, the marine late Miocene Oso, La Vida, and Soquel Members of the Capistrano Formation, and the marine Pliocene Niguel Formation.

In the slightly less elevated terrain in the eastern and southern portions of the proposed project area there are surface deposits of older Quaternary Alluvium, mostly geologically mapped as terrestrial Quaternary terrace deposits but mapped as a mixture of terrestrial and marine Quaternary terrace deposits in the southwestern portion of the proposed project area closer to Upper Newport Back Bay. Most of the proposed project area though, the less elevated terrain in the southeastern portion of the Orange County Coastal Plain, has surface deposits of younger Quaternary Alluvium, derived as alluvial fan deposits from the surrounding hills and mountains.

We do not have any vertebrate fossil localities identified as coming from the Williams Formation. Our vertebrate fossil locality LACM (CIT) 592, though, was originally listed as coming from either the Ladd Formation or Williams Formation in the Santiago Canyon area. Locality LACM (CIT) 592 produced a rare specimen of a fossil dinosaur, Hadrosauridae, from California, published and later figured in the scientific literature by W. J. Morris (1973. *Journal of Paleontology*, 47(3):551-561; 1982. *SEPM Field Trip Volume & Guidebook*, 89-90). Our vertebrate fossil locality LACM 1895, in the Santa Ana Mountains east of Santiago Canyon, produced a fossil specimen of mackerel shark, *Squalicorax falcatus*. This specimen was figured in the scientific literature by S.P. Applegate (1964. *First Record of the Extinct Shark, Squalicorax falcatus*, from California. *Bulletin of the Southern California Academy of Sciences*, 63(1):42-43) and published again by B.J. Welton et.al. (1981. *A Preliminary Note on the Late Cretaceous Sharks of the Chatsworth Formation at Dayton Canyon, Simi Hills, Los Angeles County, California*. *September Guidebook*). Applegate described the specimen as coming from the Pleasants Sandstone Member of the Williams Formation, but more likely it came from the Holz Shale Member of the Ladd Formation.

Our only vertebrate fossil locality indicated as being from the Silverado Formation, LACM 4634, is an older locality only identified as coming from the Irvine Ranch in the Santa Ana Mountains. Locality LACM 4634 produced a specimen of an unidentified fossil tortoise, Testudinidae.

All of our fossil vertebrate localities from the Santiago Formation, LACM 3881, 3883-3884, 3979, 4022, 5346-5347, 6926 and 68102, occur in the northwestern part of San Diego County, clustered around Carlsbad. These localities produced a suite of vertebrate fossils including turtles, crocodiles, birds, rodents, insectivores, brontothere, and amynodont rhinoceroses. David J. Golz (1976. *Eocene Artiodactyla of Southern California*. *Los Angeles County Museum Science Bulletin*, 26:1-85) published on the LACM specimens of the protoceratid artiodactyl *Leptoreodon leptolophus* and the camels *Protylopus petersoni* and *Protylopus stocki* from our Santiago Formation locality LACM 68102.

We have a number of Vaqueros Formation localities that occur within the proposed project area: LACM 7505, 7548-7553, 7675-7678, and 7712, all situated in the southeastern portion of the proposed project area south of the San Diego Freeway (I-405) mostly west of the Laguna Freeway (Highway 133) between about the Laguna Reservoir and the Sand Canyon Reservoir. These localities has so far produced a marine fauna containing fossil specimens of eagle ray, *Myliobatis*, basking shark, *Cetorhinus*, requiem shark, Carcharhinidae, quadrupedal marine mammal, Desmostylia, long snouted dolphin, *Argyrosetus*, shark-toothed dolphin, Squalodontidae, early toothless whale, Eomysticetidae, and primitive baleen whale, Cetotheriidae. We have two more vertebrate fossil localities, LACM 5448, and 6666, that occur within the proposed project area and are designated as being from the Sespe / Vaqueros Formations undifferentiated. Both localities have produced marine fossils though and are likely from the Vaqueros facies of the Sespe / Vaqueros Formations undifferentiated. Locality LACM 5448, jut inside the eastern border of the proposed project area east of the current Orange County Great Park in the hills on the southern side of the Borrego Canyon Wash, produced fossil specimens of undetermined bird, Aves, and whale, Cetacea. Locality LACM 6666, in the eastern portion of the proposed project area near the Lambert Reservoir and Tomato Springs, produced a fossil specimen of the quadrupedal marine mammal *Desmostylus*.

We have one locality, LACM 8016, from the Los Trancos Member of the Topanga Formation, that occurs within the boundaries of the proposed project area on the southern side of the University of California at Irvine campus near Bonita Canyon Drive. Locality LACM 8016 produced a marine fauna contain fossil specimens of requiem shark, *Carcharhinus*, tiger shark, *Galeocerdo*, snaggletooth shark, *Hemipristis*, hammerhead shark, *Sphyrna*, raggedtooth shark, *Odontaspis*, bramble shark, *Echinorhinus*, herring, *Xyngreus*, and mora, Moridae.

We have no Monterey Formation localities that occur within the proposed project area boundaries, but we do have a number of Monterey Formation localities that occur in Lake Forest just outside the boundaries of the southeastern portion of the proposed project area: 3198, 3486, 3209-3210, 3412-3413, and 4103-4114. These localities produced a suite of fossil marine vertebrates including hammerhead shark, *Sphyrna*, giant white shark, *Carcharocles megalodon*, bonito sharks, *Isurus benedeni* and *Isurus oxyrinchus*, bramble shark, *Paraechinorhinus barnesi*, eel, Anguilliformes, jack, Carangidae, bonito, *Sarda*, barracuda, *Sphyrna*, crocodile, *Crocodylus*, bird, Aves, sea lion, Otariidae, dugong, *Dioplotherium allisoni*, baleen whale, Mysticeti, and dolphin, Kentriodontidae. A specimen of the dugongid sirenian *Dioplotherium allisoni* from locality LACM 3210 was figured in the scientific literature by D. P. Domning in 1978 (Sirenian Evolution in the North Pacific Ocean. University of California Publications in Geological Sciences, 118:1-176). Specimens of the fossil crocodile *Crocodylus* from localities LACM 3209 and 3210 were published in the scientific literature by C. A. Brochu in 1999 (Phylogenetics, Taxonomy, and Historical Biogeography of Alligatoroidea. Journal of Vertebrate Paleontology, 19(2):9-100). F. H. Pfeil designated the holotype (name bearing specimen for a species new to science) of the echinorhinid shark *Paraechinorhinus barnesi* from locality LACM 3198 (1983. Zahnmorphologische Untersuchungen an rezenten und fossilen Haien der Ordnungen Chlamydoselachiformes und Echinorhiniformes. Palaeoichthyologica. 1:1-315).

Near the southwestern portion of the proposed project area, on the eastern side of Newport Back Bay in the bluffs along Backbay Drive west of Jamboree Road and south of San Joaquin Hills Road, we have two Monterey Formation localities, LACM 1160 and 7139, that produced undetermined fossils of bony fish, Osteichthyes and baleen whale, Mysticeti.

We do not have any Puente Formation localities that occur within the proposed project area boundaries. Our closest locality, LACM 6287, from the La Vida Member of the Puente Formation, occurs to the northeast of the northeastern portion of the proposed project area along East Santiago Canyon Road in Limestone Canyon near Blue Diamond Haul Road and produced fossil specimens of tonguefish, *Symphurus*.

We have two localities from the Oso Member of the Capistrano Formation that occur within the boundaries of the northeastern portion of the proposed project area: LACM 3866 and 4171. Locality LACM 4171, at Tomato Springs near the mouth of Round Canyon, produced a fossil specimen of undetermined baleen whale, Mysticeti. Locality LACM 3866, on the southwestern side of the Lambert Reservoir just to the southwest, produced fossil specimens of walrus, *Pontolis magnus*, and dugongid sea cow, *Dioplotherium allisoni*. The skeleton of *Pontolis Magnus* from locality LACM 3866 was published by the scientific literature by J. Vélez-Juarbe (2017. *Eotaria citrica*, sp. nov., a new stem otariid from the “Topanga” formation of Southern California. PeerJ, 5(e3022):1-25). In Round Canyon just to the northeast, but outside the proposed project area boundaries, our Capistrano Formation LACM 7539 produced a fossil specimen of undetermined fur seal, Otariidae.

We have two Niguel Formation localities that occur within the southwestern boundaries of the proposed project area: LACM 3977 and 3986, along what is now MacArthur Boulevard near University Drive. Locality LACM 3977 produced fossil specimens undetermined bony fish, Osteichthyes, in addition to brachiopods and mollusks. Locality LACM 3986 produced fossil specimens of chimaera, Chimaeroidei, spiny dogfish, *Squalus acanthias*, Pacific hake, *Merluccius productus*, mora, Moridae, queenfish, *Seriphus*, sculpin, Cottidae, and rockfish, *Sebastes*.

Also within the southwestern boundaries of the proposed project area we have the older Quaternary localities LACM 1068, just east of MacArthur Boulevard and north of what is now Bison Avenue, LACM 3978, adjacent to the southeastern side of the intersection of University Drive and MacArthur Boulevard, and LACM 1069, on the south side of University Drive east of MacArthur Boulevard. Locality LACM 1069 produced fossil specimens of undetermined mammals, Mammalia. Locality LACM 3978 produced fossil specimens of undetermined even-toed ungulate, Artiodactyla and turkey, *Meleagris*. The turkey specimen from locality LACM 3978 was published in the scientific literature by D.W. Steadman (1980. A Review of the Osteology and Paleontology of Turkeys (Aves: Meleagridinae). LACM Contributions in Science, 330:131-207). Locality LACM 1068 produced fossil specimens of ground sloth, *Paramylodon*, rabbit, *Sylvilagus*, tapir, *Tapirus californicus*, horse, *Equus*, camel, *Camelops*, deer, *Odocoileus*, and bison, *Bison*. The tapir from locality LACM 1068 was published in the

scientific literature by G.T. Jefferson (1989. Late Cenozoic Tapirs (Mammalia: Perissodactyla) of Western North America. LACM Contributions in Science, 406:1-21). In the southeastern portion of the proposed project area, on the western side of the Laguna Freeway (Highway 133) at the southern end of the interchange with the San Diego Freeway (I-405), we have another older Quaternary locality, LACM 7713, that produced a fossil specimen of ground sloth, Mylodontidae. In the central eastern portion of the proposed project area, in the Orange County Great Park near the end of 5<sup>th</sup> Street, our older Quaternary locality LACM 7867 produced fossil specimens of pocket gopher, *Thomomys*.

Excavations in the intrusive igneous rocks exposed in the San Joaquin Hills in the southern portion of the proposed project area will not contain recognizable fossils. Shallow excavations in the uppermost few feet of the younger Quaternary alluvial deposits exposed in the lower lying terrain in most of the proposed project area probably will not uncover significant fossil vertebrate remains. Deeper excavations in those portions of proposed project area that extend down into older sedimentary deposits, as well as any excavations in the Williams Formation, the Silverado Formation, the Santiago Formation, the Sespe & Vaqueros Formations, the Topanga Formation, the Monterey Formation, the Puente Formation, the Capistrano Formation, the Niguel Formation, or the older Quaternary deposits, exposed in the more elevated terrain in the proposed project area, however, may well encounter significant vertebrate fossils. Any substantial excavations in the sedimentary deposits in the proposed project area, therefore, should be closely monitored to quickly and professionally collect any specimens without impeding development. Also, sediment samples should be collected and processed to determine the small fossil potential in the proposed project area. Any fossils recovered during mitigation should be deposited in an accredited and permanent scientific institution for the benefit of current and future generations.

This records search covers only the vertebrate paleontology records of the Natural History Museum of Los Angeles County. It is not intended to be a thorough paleontological survey of the proposed project area covering other institutional records, a literature survey, or any potential on-site survey.

Sincerely,



Samuel A. McLeod, Ph.D.  
Vertebrate Paleontology



**APPENDIX C. FOSSIL LIST**

Group	Taxon	Common Name	Formation
Bivalve	<i>Aphrodina</i> sp.	clam	Williams, Pleasants M
Bivalve	<i>Astarte</i> sp.	clam	Williams
Bivalve	Bivalvia	bivalve	Williams
Bivalve	Bivalvia	clam	Williams
Bivalve	cf. <i>Trigonarca</i> sp.	clam	Williams
Bivalve	<i>Crassatella</i>	clam	Williams
Bivalve	<i>Cucullaea</i> sp.	clam, arc	Williams
Bivalve	<i>Eriphyla</i> sp.	clam	Williams
Bivalve	<i>Ostrea</i> sp.	oyster	Williams
Bivalve	<i>Pterotrionia</i>	clam, ridge	Williams
Cephalopod	?Ammonidea	ammonite	Williams
Cephalopod	cf. <i>Subprionocyclus</i> sp,	ammonite	Williams
Crab	Decapoda	crab	Williams
Gastropod	<i>Acteonella</i> sp.	snail, coiled	Williams
Gastropod	<i>Turritella</i>	snail, turret	Williams
Gastropod	<i>Volutoderma</i>	sea snail	Williams
Plant	Plantae	plant	Williams
Plant	Plantae	plant	Williams
Tree, conifer	Araucariaceae	pine	Williams
Tree, conifer	Cupressaceae	cypress	Williams
Bivalve	<i>Calva</i>	clam, venerid	Williams
Bivalve	<i>Calva</i>	clam, venerid	Williams
Bivalve	<i>Clisocolus</i>	clam	Williams
Bivalve	<i>Crassatella</i>	clam	Williams
Bivalve	<i>Crassatella elongata</i>	clam	Williams
Bivalve	<i>Crassatella saulae</i>	clam	Williams
Bivalve	<i>Cucullaea (Idonearca)</i>	clam, arc	Williams
Bivalve	<i>Cucullaea youngi</i>	clam, arc	Williams
Bivalve	<i>Glycymeris</i>	clam, bittersweet	Williams
Bivalve	<i>Glycymeris anae</i>	clam, bittersweet	Williams
Bivalve	Lucinidae	clam, lucine	Williams
Bivalve	Ostreidae	oyster	Williams
Bivalve	<i>Paraesa</i>	clam	Williams
Bivalve	<i>Paraesa</i>	clam	Williams
Bivalve	<i>Pecten</i>	scallop	Williams
Bivalve	Pectinidae	scallop	Williams
Bivalve	<i>Perissitys pacificum</i>	clam, nut	Williams
Bivalve	Pholadidae	angel wings	Williams
Bivalve	<i>Pinna</i>	mussel, pen	Williams
Bivalve	<i>Pterotrionia evansana</i>	clam, ridge	Williams
Bivalve	<i>Pterotrionia evansana</i>	clam, ridge	Williams
Bivalve	<i>Pycnodonte</i>	oyster	Williams
Bivalve	Tellinidae	clam, tellinid	Williams
Bivalve	Tellinidae	clam, tellinid	Williams
Cephalopod	<i>Metaplacenticeras</i>	ammonite	Williams
Cephalopod	<i>Metaplacenticeras placificum</i>	ammonite	Williams
Cephalopod	<i>Metaplacenticeras placificum</i>	ammonite	Williams

Group	Taxon	Common Name	Formation
Echinoid	Crinoidea	crinoid	Williams
Echnoid	<i>Plesiaster</i>	sea urchin	Williams
Fish, Bony	Actinopterygii	fish, ray finned	Williams
Gastropod	<i>Anchura phaba</i>	snail, pelican foot	Williams
Gastropod	Epitoniidae	sea snail	Williams
Gastropod	<i>Paleofusimitra</i>	snail	Williams
Gastropod	<i>Turritella</i>	snail, turret	Williams
Gastropod	<i>Turritella chicoenses pescaderoensis</i>	snail, turret	Williams
Gastropod	<i>Turritella chicoensis pescaderoensis</i>	snail, turret	Williams
Protist	<i>Desmophylites diphyloides</i>	radiolaria	Williams
Scaphopod	<i>Indogrammatodon</i>	tusk shell	Williams
Bivalve	? <i>Crassatella</i>	clam	Williams, undif.
Bivalve	? <i>Glycymeris</i>	clam, bittersweet	Williams, undif.
Bivalve	<i>Acila demessa</i>	clam	Williams, undif.
Bivalve	<i>Acutostrea</i>	oyster	Williams, undif.
Bivalve	<i>Anomia jalama</i>	clam	Williams, undif.
Bivalve	<i>Anomia jalama</i>	clam	Williams, undif.
Bivalve	Arcidae	clam, arc	Williams, undif.
Bivalve	Bivalvia	clams	Williams, undif.
Bivalve	Cacullaea	clam	Williams, undif.
Bivalve	<i>Calva</i>	clam, venerid	Williams, undif.
Bivalve	<i>Calva</i>	clam, venerid	Williams, undif.
Bivalve	<i>Calva bowersiana</i>	clam, venerid	Williams, undif.
Bivalve	<i>Calva campanae</i>	clam, venerid	Williams, undif.
Bivalve	<i>Clisocolus</i>	clam	Williams, undif.
Bivalve	<i>Clisocolus</i>	clam	Williams, undif.
Bivalve	<i>Clissocolus</i>	clam	Williams, undif.
Bivalve	<i>Clissocolus dubius</i>	clam	Williams, undif.
Bivalve	<i>Clissocolus dubius</i>	clam	Williams, undif.
Bivalve	<i>Crassatella</i>	clam	Williams, undif.
Bivalve	<i>Crassatella</i>	clam	Williams, undif.
Bivalve	<i>Crassatella</i>	clam	Williams, undif.
Bivalve	<i>Crassatella</i>	clam	Williams, undif.
Bivalve	<i>Crassatella</i>	clam	Williams, undif.
Bivalve	<i>Crassatella</i>	clam	Williams, undif.
Bivalve	<i>Crassatella elongata</i>	clam	Williams, undif.
Bivalve	<i>Crassatella elongata</i>	clam	Williams, undif.
Bivalve	Crassatellidae	clam	Williams, undif.
Bivalve	<i>Cucullae</i>	clam, arc	Williams, undif.
Bivalve	<i>Cucullaea</i>	clam, arc	Williams, undif.
Bivalve	<i>Cucullaea</i>	clam, arc	Williams, undif.
Bivalve	<i>Cucullaea</i>	clam, arc	Williams, undif.
Bivalve	<i>Cucullaea</i>	clam, arc	Williams, undif.
Bivalve	<i>Cucullaea</i>	clam, arc	Williams, undif.
Bivalve	<i>Cucullaea (Idonearca)</i>	clam, arc	Williams, undif.

<b>Group</b>	<b>Taxon</b>	<b>Common Name</b>	<b>Formation</b>
Bivalve	<i>Cucullaea youngi</i>	clam, arc	Williams, undif.
Bivalve	<i>Glycymeris</i>	clam, bittersweet	Williams, undif.
Bivalve	<i>Glycymeris</i>	clam, bittersweet	Williams, undif.
Bivalve	<i>Glycymeris</i>	clam, bittersweet	Williams, undif.
Bivalve	<i>Glycymeris</i>	clam, bittersweet	Williams, undif.
Bivalve	<i>Glycymeris</i>	clam, bittersweet	Williams, undif.
Bivalve	<i>Glycymeris anae</i>	clam, bittersweet	Williams, undif.
Bivalve	<i>Indogrammatodon</i>	tusk shell	Williams, undif.
Bivalve	<i>Indogrammatodon</i>	tusk shell	Williams, undif.
Bivalve	<i>Indogrammatodon</i>	tusk shell	Williams, undif.
Bivalve	<i>Inoceramus</i>	clam	Williams, undif.
Bivalve	<i>Inoceramus</i>	clam	Williams, undif.
Bivalve	<i>Inoceramus</i>	clam	Williams, undif.
Bivalve	<i>Inoceramus</i>	clam	Williams, undif.
Bivalve	<i>Inoceramus</i>	clam	Williams, undif.
Bivalve	Lucinidae	clam, lucine	Williams, undif.
Bivalve	Lucinidae	clam, lucine	Williams, undif.
Bivalve	Nuculidae	clam, nut	Williams, undif.
Bivalve	Nuculidae	clam, nut	Williams, undif.
Bivalve	<i>Opis</i>	clam	Williams, undif.
Bivalve	<i>Opis triangulata</i>	clam	Williams, undif.
Bivalve	Ostreidae	oyster	Williams, undif.
Bivalve	Ostreidae	oyster	Williams, undif.
Bivalve	Ostreidae	oyster	Williams, undif.
Bivalve	Ostreidae	oyster	Williams, undif.
Bivalve	<i>Palaeomoera dyskritos</i>	clam, tellinid	Williams, undif.
Bivalve	<i>Panope</i>	clam, geoduck	Williams, undif.
Bivalve	<i>Panope californicum</i>	clam, geoduck	Williams, undif.
Bivalve	<i>Panopea</i>	clam, geoduck	Williams, undif.
Bivalve	<i>Panopea</i>	clam, geoduck	Williams, undif.
Bivalve	<i>Panopea</i>	clam, geoduck	Williams, undif.
Bivalve	<i>Paraesa</i>	clam	Williams, undif.
Bivalve	<i>Paraesa lens</i>	clam	Williams, undif.
Bivalve	Pectinidae	scallop	Williams, undif.
Bivalve	<i>Perissitys</i>	clam, nut	Williams, undif.
Bivalve	<i>Perissitys pacificum</i>	clam, nut	Williams, undif.
Bivalve	<i>Perissitys pacificum</i>	clam, nut	Williams, undif.
Bivalve	Pholadidae	angel wings	Williams, undif.
Bivalve	<i>Pinna</i>	mussel, pen	Williams, undif.
Bivalve	<i>Pinna</i>	mussel, pen	Williams, undif.
Bivalve	<i>Pinna</i>	mussel, pen	Williams, undif.
Bivalve	<i>Pinna</i>	mussel, pen	Williams, undif.
Bivalve	<i>Protocardia</i>	cockle	Williams, undif.
Bivalve	<i>Pteroida</i>	mussel	Williams, undif.
Bivalve	<i>Pterotrignia</i>	clam, ridge	Williams, undif.
Bivalve	<i>Pterotrignia</i>	clam, ridge	Williams, undif.
Bivalve	<i>Pterotrignia</i>	clam, ridge	Williams, undif.

Group	Taxon	Common Name	Formation
Bivalve	<i>Pterotrignia</i>	clam, ridge	Williams, undif.
Bivalve	<i>Pterotrignia evansana</i>	clam, ridge	Williams, undif.
Bivalve	<i>Pterotrignia evansana</i>	clam, ridge	Williams, undif.
Bivalve	<i>Pterotrignia evansana</i>	clam, ridge	Williams, undif.
Bivalve	<i>Pterotrignia evansana</i>	clam, ridge	Williams, undif.
Bivalve	<i>Pterotrignia evansana</i>	clam, ridge	Williams, undif.
Bivalve	<i>Pterotrignia evansana</i>	clam, ridge	Williams, undif.
Bivalve	<i>Pterotrignia evansana</i>	clam, ridge	Williams, undif.
Bivalve	<i>Spondyllus</i>	oyster, spiny	Williams, undif.
Bivalve	<i>Spondyllus subrugosus</i>	oyster, spiny	Williams, undif.
Bivalve	<i>Teana inflata</i>	clam	Williams, undif.
Bivalve	Tellinidae	clam, tellinid	Williams, undif.
Bivalve	Veneridae	clam	Williams, undif.
Bivalve	Yaadia	clam	Williams, undif.
Cephalopod	?Ammonidea	ammonite	Williams, undif.
Cephalopod	Ammonidae	ammonite	Williams, undif.
Cephalopod	Ammonidae	ammonite	Williams, undif.
Cephalopod	Ammonidae	ammonite	Williams, undif.
Cephalopod	<i>Cymatoceras</i>	ammonite	Williams, undif.
Cephalopod	<i>Cymatoceras</i>	ammonite	Williams, undif.
Cephalopod	<i>Menuites</i>	ammonite	Williams, undif.
Cephalopod	<i>Menuites californies</i>	ammonite	Williams, undif.
Cephalopod	<i>Menuites californius</i>	ammonite	Williams, undif.
Cephalopod	<i>Menuites californius</i>	ammonite	Williams, undif.
Cephalopod	<i>Metaplacentieras</i>	ammonite	Williams, undif.
Cephalopod	<i>Metaplacentieras</i>	ammonite	Williams, undif.
Cephalopod	<i>Metaplacentieras</i>	ammonite	Williams, undif.
Cephalopod	<i>Metaplacentieras</i>	ammonite	Williams, undif.
Cephalopod	<i>Metaplacentieras</i>	ammonite	Williams, undif.
Cephalopod	<i>Metaplacentieras</i>	ammonite	Williams, undif.
Cephalopod	<i>Metaplacentieras pacificum</i>	ammonite	Williams, undif.
Cephalopod	<i>Metaplacentieras pacificum</i>	ammonite	Williams, undif.
Cephalopod	<i>Metaplacentieras pacificum</i>	ammonite	Williams, undif.
Cephalopod	<i>Metaplacentieras pacificum</i>	ammonite	Williams, undif.
Cephalopod	<i>Metaplacentieras pacificum</i>	ammonite	Williams, undif.
Cephalopod	<i>Metaplacentieras pacificum</i>	ammonite	Williams, undif.
Cephalopod	<i>Metaplacentieras pacificum</i>	ammonite	Williams, undif.
Cephalopod	<i>Metaplacentieras pacificum</i>	ammonite	Williams, undif.
Cephalopod	<i>Metaplacentieras pacificum</i>	ammonite	Williams, undif.
Cephalopod	<i>Metaplacentieras pacificum</i>	ammonite	Williams, undif.
Cephalopod	<i>Metaplacentieras pacificum</i>	ammonite	Williams, undif.
Cephalopod	<i>Metaplacentieras pacificum</i>	ammonite	Williams, undif.
Cephalopod	<i>Metaplacentieras pacificum</i>	ammonite	Williams, undif.
Cephalopod	<i>Metaplacentieras pacificum</i>	ammonite	Williams, undif.
Cephalopod	<i>Metaplacentieras pacificum</i>	ammonite	Williams, undif.
Cephalopod	<i>Metaplacentieras pacificum</i>	ammonite	Williams, undif.
Cephalopod	<i>Metaplacentieras pacificum</i>	ammonite	Williams, undif.
Cephalopod	<i>Metaplacentieras pacificum</i>	ammonite	Williams, undif.
Cephalopod	<i>Metaplacentieras pacificum</i>	ammonite	Williams, undif.
Cephalopod	<i>Metaplacentieras pacificum</i>	ammonite	Williams, undif.
Cephalopod	<i>Metaplacentieras pacificum</i>	ammonite	Williams, undif.

Group	Taxon	Common Name	Formation
Cephalopod	<i>Metaplacenticeras pacificum</i>	ammonite	Williams, undif.
Cephalopod	<i>Metaplacenticeras pacificum</i>	ammonite	Williams, undif.
Cephalopod	<i>Metaplacenticeras pacificum</i>	ammonite	Williams, undif.
Cephalopod	<i>Metaplacenticeras pacificum</i>	ammonite	Williams, undif.
Cephalopod	Nautilidae	nautilus	Williams, undif.
Cephalopod	Pachydiscidae	ammonite	Williams, undif.
Cephalopod	Pseudophyllites/Neodesmorceras	ammonite	Williams, undif.
Crab	Brachyura	crab	Williams, undif.
Decapod	Caridea	shrimp	Williams, undif.
Dinosaur	?Ornithischia	dinosaur, duck-billed	Williams, undif.
Echinoid	Clypeasteroidea	sand dollar	Williams, undif.
Echinoid	Echinoidea	sea urchin	Williams, undif.
Echnoid	<i>Nielsenicrinus</i>	crinoid	Williams, undif.
Echnoid	Spatangidae	urchin, heart	Williams, undif.
Echnoid	Spatangidae	urchin, heart	Williams, undif.
Fish, Bony	Actinopterygii	fish, ray finned	Williams, undif.
Fish, Bony	Actinopterygii	fish, ray finned	Williams, undif.
Fish, Bony	Actinopterygii	fish, ray finned	Williams, undif.
Fish, Cartilaginous	<i>Chiloscyllium</i>	shark, bamboo	Williams, undif.
Fish, Cartilaginous	Scyliorhinidae	shark, cat	Williams, undif.
Fish, cartilaginous	<i>Squalus</i>	shark, dogfish	Williams, undif.
Gastropod	<i>Anchura</i>	snail, pelican foot	Williams, undif.
Gastropod	<i>Anchura</i>	snail, pelican foot	Williams, undif.
Gastropod	<i>Biplica</i>	snail	Williams, undif.
Gastropod	<i>Biplica</i>	snail	Williams, undif.
Gastropod	<i>Gyrodes</i>	snail, moon	Williams, undif.
Gastropod	<i>Gyrodes pacificum</i>	snail, moon	Williams, undif.
Gastropod	<i>Gyrodes pacificus</i>	snail, moon	Williams, undif.
Gastropod	<i>Gyrodes rabsauli</i>	snail, moon	Williams, undif.
Gastropod	Naticidae	snail, moon	Williams, undif.
Gastropod	<i>Paleofusimitra</i>	snail	Williams, undif.
Gastropod	<i>Sycodes glabra</i>	snail, fig	Williams, undif.
Gastropod	<i>Tessarolax</i>	sea snail	Williams, undif.
Gastropod	<i>Turritella chicoensis</i>	snail, turret	Williams, undif.
Gastropod	<i>Turritella chicoensis</i>	snail, turret	Williams, undif.
Gastropod	<i>Turritella chicoensis pescarderoensis</i>	snail, turret	Williams, undif.
Gastropod	<i>Turritella chicoensis pescarderoensis</i>	snail, turret	Williams, undif.
Gastropod	<i>Turritella chicoensis pescarderoensis</i>	snail, turret	Williams, undif.
Gastropod	<i>Turritella chicoensis pescarderoensis</i>	snail, turret	Williams, undif.
Gastropod	<i>Turritella chicoensis pescarderoensis</i>	snail, turret	Williams, undif.
Gastropod	<i>Volutoderma</i>	sea snail	Williams, undif.
Gastropod	<i>Volutoderma</i>	sea snail	Williams, undif.
Gastropod	<i>Volutoderma magna</i>	sea snail	Williams, undif.
Gastropod	<i>Volutoderma magna</i>	sea snail	Williams, undif.

Group	Taxon	Common Name	Formation
Gastropod	<i>Zinsitys</i>	sea snail	Williams, undif.
Gastropod	<i>Zinsitys kingii</i>	sea snail	Williams, undif.
Gastropod	<i>Zinsitys kingii</i>	sea snail	Williams, undif.
Monocots	Liliopsida	lily	Williams, undif.
Plant	Plantae	plant	Williams, undif.
Protist	<i>Cymbella</i>	diatom	Williams, undif.
Protist	<i>Cymbella</i>	diatom	Williams, undif.
Protist	<i>Cymbella</i>	diatom	Williams, undif.
Protist	<i>Desmophylites diphyloides</i>	radiolaria	Williams, undif.
Protist	<i>Desmophylites diphyloides</i>	radiolaria	Williams, undif.
Protist	<i>Desmophylites diphyloides</i>	radiolaria	Williams, undif.
Protist	Foraminifera	foraminifera	Williams, undif.
Reptile	Reptilia	reptile	Williams, undif.
Reptile	Reptilia	reptile	Williams, undif.
Tree, conifer	Coniferales	petrified wood	Williams, undif.
Tree, conifer	Coniferales	petrified wood	Williams, undif.
Tree, conifer	Pinaceae	pine	Williams, undif.
Tree, hardwood	Dicotyledonae	dicot	Williams, undif.
Tree, hardwood	Magnoliophyta	leaf	Williams, undif.
Tree, hardwood	Magnoliophyta	leaf	Williams, undif.
Tree, hardwood	? <i>Salix</i> sp.	willow	Silverado
Tree, hardwood	Dicotyledonae	dicot leaf	Silverado
Plant	? <i>Lamonia</i>	plant	Santiago
Reptile	Crocodylidae	crocodile	Santiago
Tree, hardwood	? <i>Dryophyllum</i>	ancestor of oaks and beeches	Santiago
Tree, hardwood	Dicotyledonae	dicot	Santiago
Tree, hardwood	<i>Ficus</i>	fig	Santiago
Tree, hardwood	<i>Juglans</i> sp.	walnut	Santiago
Tree, hardwood	<i>Laurus</i>	laurel	Santiago
Tree, hardwood	<i>Magnolia</i> sp.	magnolia	Santiago
Tree, hardwood	<i>Salix</i>	willow	Santiago
Bivalve	Bivalvia	clam	Sespe-Vaqueros, undif
Bivalve	Ostreidae	oyster	Sespe-Vaqueros, undif
Bivalve	Pectinidae	scallop	Sespe-Vaqueros, undif
Crab	Brachyura	crab	Sespe-Vaqueros, undif
Decapod	Caridae	shrimp	Sespe-Vaqueros, undif
Echnoid	<i>Vaquerosella</i>	sand dollar	Sespe-Vaqueros, undif
Echnoid	<i>Vaquerosella</i>	sand dollar	Sespe-Vaqueros, undif
Fish, Bony	Acanthopterygii	fish, ray finned	Sespe-Vaqueros, undif
Fish, Bony	Acanthopterygii	fish, ray finned	Sespe-Vaqueros, undif
Fish, Bony	Actinopterygii	fish, ray finned	Sespe-Vaqueros, undif
Fish, Bony	Actinopterygii	fish, ray finned	Sespe-Vaqueros, undif
Fish, Bony	Actinopterygii	fish, ray finned	Sespe-Vaqueros, undif
Fish, Bony	Actinopterygii	fish, ray finned	Sespe-Vaqueros, undif
Fish, Bony	Albulidae	bonefish	Sespe-Vaqueros, undif
Fish, Bony	Albulidae	bonefish	Sespe-Vaqueros, undif
Fish, Bony	Albulidae	bonefish	Sespe-Vaqueros, undif

<b>Group</b>	<b>Taxon</b>	<b>Common Name</b>	<b>Formation</b>
Fish, Bony	<i>Chauliodus</i>	viperfish	Sespe-Vaqueros, undif
Fish, Bony	Cyprinidae	minnow family	Sespe-Vaqueros, undif
Fish, Bony	Cyprinidae	minnow family	Sespe-Vaqueros, undif
Fish, Bony	Diodontidae	porcupinefish	Sespe-Vaqueros, undif
Fish, Bony	Labridae	wrasse	Sespe-Vaqueros, undif
Fish, Bony	Labridae	wrasse	Sespe-Vaqueros, undif
Fish, Bony	Oplegnathidae	knifejaw	Sespe-Vaqueros, undif
Fish, Bony	Oplegnathidae	knifejaw	Sespe-Vaqueros, undif
Fish, Bony	<i>Rhinobatos</i>	guitarfish	Sespe-Vaqueros, undif
Fish, Bony	<i>Sarda</i>	bonito	Sespe-Vaqueros, undif
Fish, Bony	<i>Sphyraena</i>	barracuda	Sespe-Vaqueros, undif
Fish, Bony	<i>Sphyraena</i>	barracuda	Sespe-Vaqueros, undif
Fish, Bony	<i>Thyrsoles</i>	oilfish	Sespe-Vaqueros, undif
Fish, Cartilagenous	Batoidea	ray, bat	Sespe-Vaqueros, undif
Fish, Cartilagenous	Carcharhinidae	shark	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Carcharhinus</i>	shark	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Carcharhinus isodon</i>	shark	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Cetorhinus</i>	shark, basking	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Cetorhinus</i>	shark, basking	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Cetorhinus</i>	shark, basking	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Cetorhinus</i>	shark, basking	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Dasyatis</i>	stingray	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Dasyatis</i>	stingray	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Dasyatis</i>	stingray	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Dasyatis</i>	stingray	Sespe-Vaqueros, undif
Fish, Cartilagenous	Elasmobranchii	shark/ray	Sespe-Vaqueros, undif
Fish, Cartilagenous	Euselachii	shark	Sespe-Vaqueros, undif
Fish, Cartilagenous	Euselachii	shark	Sespe-Vaqueros, undif
Fish, Cartilagenous	Euselachii	shark	Sespe-Vaqueros, undif
Fish, Cartilagenous	Euselachii	shark	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Galeocerdo</i>	shark, tiger	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Galeocerdo</i>	shark, tiger	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Galeocerdo</i>	shark, tiger	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Galeocerdo</i>	shark, tiger	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Gymnura</i>	ray, butterfly	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Gymnura</i>	ray, butterfly	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Gymnura</i>	ray, butterfly	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Hemipristis</i>	shark ,weasel	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Heterodontus</i>	shark, horn	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Isogomphodon</i>	shark, daggernose	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Isogomphodon</i>	shark, daggernose	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Isogomphodon</i>	shark, daggernose	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Isogomphodon</i>	shark, daggernose	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Isurus</i>	shark, mackeral	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Mobula</i>	ray	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Mobula</i>	ray	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Mustelus</i>	shark, smooth-hound	Sespe-Vaqueros, undif



<b>Group</b>	<b>Taxon</b>	<b>Common Name</b>	<b>Formation</b>
Fish, Cartilagenous	<i>Mustelus</i>	shark, smooth-hound	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Mustelus</i>	shark, smooth-hound	Sespe-Vaqueros, undif
Fish, Cartilagenous	Myliobatidae	ray, eagle	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Myliobatis</i>	ray, eagle	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Myliobatis</i>	ray, eagle	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Myliobatis</i>	ray, eagle	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Myliobatus</i>	ray, eagle	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Pristiophorus</i>	sawshark	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Pristiophorus</i>	sawshark	Sespe-Vaqueros, undif
Fish, Cartilagenous	Rhizoprionodon	shark, requiem	Sespe-Vaqueros, undif
Fish, Cartilagenous	Rhizoprionodon	shark, requiem	Sespe-Vaqueros, undif
Fish, Cartilagenous	Rhizoprionodon	shark, requiem	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Rhynchobatus</i>	ray, wedge	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Rhynchobatus</i>	ray, wedge	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Rhynchobatus</i>	ray, wedge	Sespe-Vaqueros, undif
Fish, Cartilagenous	Rhynchobatus	ray, wedge	Sespe-Vaqueros, undif
Fish, Cartilagenous	Scyliorhinidae	shark, cat	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Triakis</i>	shark, hound	Sespe-Vaqueros, undif
Fish, Cartilagenous	<i>Triakis</i>	shark, hound	Sespe-Vaqueros, undif
Fish, cartilagenous	<i>Squatina</i>	shark, angel	Sespe-Vaqueros, undif
Fish, cartilagenous	<i>Squatina</i>	shark, angel	Sespe-Vaqueros, undif
Gastropod	Naticidae	snail, moon	Sespe-Vaqueros, undif
Gastropod	<i>Scutellina</i>	sea snail	Sespe-Vaqueros, undif
Gastropod	<i>Turritella</i>	snail, turret	Sespe-Vaqueros, undif
Gastropod	<i>Turritella</i>	snail, turret	Sespe-Vaqueros, undif
Mammal, large	Artiodactyla	artiodactyl	Sespe-Vaqueros, undif
Mammal, large	Palaeomerycidae	deer	Sespe-Vaqueros, undif
Mammal, marine	Balanidae	whale, baleen	Sespe-Vaqueros, undif
Mammal, marine	<i>Cornwallius sookensis</i>	sea cow	Sespe-Vaqueros, undif
Mammal, marine	<i>Desmostylus</i>	sea cow	Sespe-Vaqueros, undif
Mammal, marine	Mysteceti	whale, baleen	Sespe-Vaqueros, undif
Mammal, marine	Mysticeti	whale	Sespe-Vaqueros, undif
Mammal, marine	Mysticeti	whale, baleen	Sespe-Vaqueros, undif
Mammal, marine	Mysticeti	whale, baleen	Sespe-Vaqueros, undif
Mammal, marine	Mysticeti	whale, baleen	Sespe-Vaqueros, undif
Mammal, marine	Mysticeti	whale, baleen	Sespe-Vaqueros, undif
Mammal, marine	Mysticeti	whale, baleen	Sespe-Vaqueros, undif
Mammal, marine	Odontoceti	whale, toothed	Sespe-Vaqueros, undif
Mammal, marine	Odontoceti	whale, toothed	Sespe-Vaqueros, undif
Mammal, small	<i>Cuyamalagus</i>	pika	Sespe-Vaqueros, undif
Mammal, small	<i>Dyseolemur</i>	tarsier	Sespe-Vaqueros, undif
Mammal, small	Erinaceidae	hedgehog	Sespe-Vaqueros, undif
Mammal, small	<i>Griphomys</i>	insectivore	Sespe-Vaqueros, undif
Mammal, small	<i>Griphomys</i>	insectivore	Sespe-Vaqueros, undif
Mammal, small	<i>Griphomys</i>	insectivore	Sespe-Vaqueros, undif
Mammal, small	Heteromyidae	rat, kangaroo	Sespe-Vaqueros, undif
Mammal, small	<i>Leidymys</i>	insectivore	Sespe-Vaqueros, undif
Mammal, small	<i>Leidymys</i>	insectivore	Sespe-Vaqueros, undif

<b>Group</b>	<b>Taxon</b>	<b>Common Name</b>	<b>Formation</b>
Mammal, small	<i>Leptomys</i>	insectivore	Sespe-Vaqueros, undif
Mammal, small	<i>Metanoiamys</i>	insectivore	Sespe-Vaqueros, undif
Mammal, small	<i>Microparamys</i>	insectivore	Sespe-Vaqueros, undif
Mammal, small	<i>Microparamys</i>	insectivore	Sespe-Vaqueros, undif
Mammal, small	<i>Microparamys</i>	insectivore	Sespe-Vaqueros, undif
Mammal, small	<i>Miospermophilus</i>	squirrel	Sespe-Vaqueros, undif
Mammal, small	<i>Peratherium</i>	opposum	Sespe-Vaqueros, undif
Mammal, small	<i>Peratherium</i>	opposum	Sespe-Vaqueros, undif
Mammal, small	<i>Peratherium</i>	opposum	Sespe-Vaqueros, undif
Mammal, small	<i>Perognathus</i>	mouse, pocket	Sespe-Vaqueros, undif
Mammal, small	<i>Proheteromys</i>	rat, kangaroo	Sespe-Vaqueros, undif
Mammal, small	<i>Proheteromys</i>	rat, kangaroo	Sespe-Vaqueros, undif
Mammal, small	<i>Proheteromys</i>	rat, kangaroo	Sespe-Vaqueros, undif
Mammal, small	<i>Pseudotheridomys cuyamensis</i>	rodent	Sespe-Vaqueros, undif
Mammal, small	Rodentia	rodent	Sespe-Vaqueros, undif
Mammal, small	<i>Schizodontomys</i>	lizard, rodents	Sespe-Vaqueros, undif
Mammal, small	<i>Schizodontomys</i>	rodent	Sespe-Vaqueros, undif
Mammal, small	<i>Schizodontomys</i>	rodent	Sespe-Vaqueros, undif
Mammal, small	<i>Schizodontomys</i>	rodent	Sespe-Vaqueros, undif
Mammal, small	<i>Sespedectes</i>	shrew	Sespe-Vaqueros, undif
Mammal, small	<i>Sespedectes</i>	shrew	Sespe-Vaqueros, undif
Mammal, small	<i>Sespedectes singularis</i>	shrew	Sespe-Vaqueros, undif
Mammal, small	<i>Sespedectes singularis</i>	shrew	Sespe-Vaqueros, undif
Mammal, small	<i>Simimys</i>	shrew	Sespe-Vaqueros, undif
Mammal, small	<i>Simimys</i>	shrew	Sespe-Vaqueros, undif
Mammal, small	<i>Simimys simplex</i>	shrew	Sespe-Vaqueros, undif
Mammal, small	<i>Simimys simplex</i>	shrew	Sespe-Vaqueros, undif
Mammal, small	<i>Simimys simplex</i>	shrew	Sespe-Vaqueros, undif
Mammal, small	<i>Simimys simplex</i>	shrew	Sespe-Vaqueros, undif
Mammal, small	<i>Tamias</i>	chipmunk	Sespe-Vaqueros, undif
Mammal, small	<i>Trogomys</i>	shrew	Sespe-Vaqueros, undif
Mammal, small	<i>Trogomys</i>	shrew	Sespe-Vaqueros, undif
Mammal, small	<i>Trogomys</i>	shrew	Sespe-Vaqueros, undif
Mammal, small	<i>Trogomys</i>	shrew	Sespe-Vaqueros, undif
Mammal, small	<i>Trogomys</i>	shrew	Sespe-Vaqueros, undif
Mammal, small	<i>Trogomys</i>	shrew	Sespe-Vaqueros, undif
Mammal, small	<i>Trogomys</i>	shrew	Sespe-Vaqueros, undif
Mammal, small	<i>Yatkolamys</i>	vole	Sespe-Vaqueros, undif
Mammal, small	<i>Yatkolamys</i>	vole	Sespe-Vaqueros, undif
Reptile	Anguidae	lizard	Sespe-Vaqueros, undif
Reptile	Anguidae	lizard	Sespe-Vaqueros, undif
Reptile	Boidae	snake, boa	Sespe-Vaqueros, undif
Reptile	Lacertilia	lizard	Sespe-Vaqueros, undif
Reptile	<i>Palaeoxantusia</i>	lizard	Sespe-Vaqueros, undif
Reptile	<i>Parasauromalus</i>	lizard	Sespe-Vaqueros, undif
Bird	Pseudodontornidae	pelican	Sespe-Vaqueros, undif.
Fish, Bony	Actinopterygii	fish, ray finned	Sespe-Vaqueros, undif.
Fish, Bony	Albulidae	bonefish	Sespe-Vaqueros, undif.
Fish, Bony	<i>Rhinobatos</i>	guitarfish	Sespe-Vaqueros, undif.

Group	Taxon	Common Name	Formation
Fish, Cartilaginous	<i>Batoidea</i>	ray, bat	Sespe-Vaqueros, undif.
Fish, Cartilaginous	<i>Cetorhinus</i>	shark, basking	Sespe-Vaqueros, undif.
Fish, Cartilaginous	<i>Dasyatis</i>	stingray	Sespe-Vaqueros, undif.
Fish, Cartilaginous	<i>Gymnura</i>	ray, butterfly	Sespe-Vaqueros, undif.
Fish, Cartilaginous	<i>Heterodontus</i>	shark, horn	Sespe-Vaqueros, undif.
Fish, Cartilaginous	<i>Myliobatis</i>	ray, eagle	Sespe-Vaqueros, undif.
Fish, Cartilaginous	<i>Rhizoprionodon</i>	shark, requiem	Sespe-Vaqueros, undif.
Fish, Cartilaginous	<i>Rhynchobatus</i>	ray, wedge	Sespe-Vaqueros, undif.
Mammal, marine	Mysteceti	whale, baleen	Sespe-Vaqueros, undif.
Mammal, marine	Mysticeti	whale, baleen	Sespe-Vaqueros, undif.
Tree, hardwood	Magnoliophyta	leaf	Sespe-Vaqueros, undif.
Tree, hardwood	Magnoliophyta	leaf	Sespe-Vaqueros, undif.
Tree, hardwood	Magnoliophyta	leaf	Sespe-Vaqueros, undif.
Tree, hardwood	Magnoliophyta	leaf	Sespe-Vaqueros, undif.
Bivalve	<i>Ostrea</i> sp.	oyster	Vaqueros
Bivalve	<i>Ostrea</i> sp.	oyster	Vaqueros
Bivalve	<i>Ostrea vespertina</i>	oyster	Vaqueros
Fish, Cartilaginous	Carcharhinidae	shark	Vaqueros
Fish, Cartilaginous	<i>Cetorhinus</i>	shark, basking	Vaqueros
Fish, Cartilaginous	<i>Myliobatis</i>	ray, eagle	Vaqueros
Gastropod	<i>Turritella</i>	snail, turret	Vaqueros
Invertebrate	unlisted	marine invertebrates	Vaqueros
Invertebrate	unlisted	marine invertebrates	Vaqueros
Mammal, marine	<i>Argyrocetus</i>	whale, toothed	Vaqueros
Mammal, marine	Cetotheriidae	whale, primitive baleen	Vaqueros
Mammal, marine	Desmostylia	sea cow	Vaqueros
Mammal, marine	Desmostylus	sea cow	Vaqueros
Mammal, marine	Eomysticetidae	whale, baleen, primitive	Vaqueros
Mammal, marine	Morawanocetus sp.	whale, primitive baleen	Vaqueros
Mammal, marine	Squalodontidae	dolphin, shark-toothed	Vaqueros
Polychete	<i>Serpula</i> sp.	tube worm	Vaqueros
	† <i>Turritella inezana</i>	snail, turret	Vaqueros
	Pectinidae	oyster	Vaqueros
	Polychaeta	annelid worm	Vaqueros
Echinoid	<i>Antillaster</i> sp.	sea urchin	Topanga
Echinoid	Brissidae	sea urchin	Topanga
Echinoid	Brissidae	sea urchin	Topanga
Fish, Bony	Actinopterygii	fish, ray finned	Topanga
Fish, Bony	Actinopterygii	fish, ray finned	Topanga
Fish, Bony	Clupediae	herring	Topanga
Fish, Bony	Clupediae	herring	Topanga
Fish, Bony	Clupediae	herring	Topanga
Fish, Bony	Clupediae	herring	Topanga
Fish, Bony	Clupediae	herring	Topanga
Fish, Bony	<i>Ganolytes</i>	sardine	Topanga
Fish, Bony	<i>Ganolytes</i>	sardine	Topanga
Fish, Bony	<i>Scomber</i>	mackeral	Topanga

<b>Group</b>	<b>Taxon</b>	<b>Common Name</b>	<b>Formation</b>
Fish, Cartilaginous	<i>Echinorhynchus</i> sp.	shark, bramble	Topanga
Plant	Myriophyllum	algae, freshwater	Topanga
Plant	Plantae	plant	Topanga
Tree, hardwood	<i>Acer</i>	maple	Topanga
Tree, hardwood	<i>Populus</i>	aspen	Topanga
Fish, Bony	Moridae	mora	Topanga Group
Fish, Bony	<i>Sphyrna</i> sp.	barracuda	Topanga Group
Fish, Cartilaginous	<i>Carcharhinus</i> sp.	shark, requiem	Topanga Group
Fish, Cartilaginous	<i>Echinorhinus</i> sp.	shark, bramble	Topanga Group
Fish, Cartilaginous	<i>Galeocerdo</i> sp.	shark, tiger	Topanga Group
Fish, Bony	† <i>Xyne grex</i>	herring	Topanga Group
Fish, Cartilaginous	<i>Hemipristis</i> sp.	snaggletooth shark	Topanga Group
Fish, Cartilaginous	<i>Odontaspis</i> sp.	ragged tooth shark	Topanga Group
Mammal, marine	Desmostylia	sea cow	Topanga?
Crab	Brachyura	crab	Monterey
Crab	Brachyura	crab	Monterey
Crab	Brachyura	crab	Monterey
Crab	Cancer	crab	Monterey
Crab	Cancer	crab	Monterey
Crab	Cancer	crab	Monterey
Crab	Eucardia	crab	Monterey
Crab	Parthenopidae	crab	Monterey
Crab	Parthenopidae	crab	Monterey
Crustacean	Squillidae	shrimp	Monterey
Echinoid	Echinoidea	sea urchin	Monterey
Fish, Bony	Actinopterygii	fish, ray finned	Monterey
Fish, Bony	Actinopterygii	fish, ray finned	Monterey
Fish, Bony	Actinopterygii	fish, ray finned	Monterey
Fish, Bony	Actinopterygii	fish, ray finned	Monterey
Fish, Bony	Actinopterygii	fish, ray finned	Monterey
Fish, Bony	Actinopterygii	fish, ray finned	Monterey
Fish, Bony	Clupediae, Engraulidae, Dussumieriidae	herrings	Monterey
Fish, Bony	Clupediae, Engraulidae, Dussumieriidae	herrings	Monterey
Fish, Bony	Clupediae, Engraulidae, Dussumieriidae	herrings	Monterey
Fish, Bony	Clupediae, Engraulidae, Dussumieriidae	herrings	Monterey
Fish, Bony	Clupediae, Engraulidae, Dussumieriidae	herrings	Monterey
Fish, Bony	Clupediae, Engraulidae, Dussumieriidae	herrings	Monterey
Fish, Bony	Clupediae, Engraulidae, Dussumieriidae	herrings	Monterey
Fish, Bony	Clupediae, Engraulidae, Dussumieriidae	herrings	Monterey
Fish, Bony	Clupediae, Engraulidae, Dussumieriidae	herrings	Monterey
Fish, Bony	Cynoglossidae	tonguefish	Monterey
Fish, Bony	Cynoglossidae	tonguefish	Monterey

Group	Taxon	Common Name	Formation
Fish, Bony	<i>Ganolytes cameo</i>	sardine	Monterey
Fish, Bony	<i>Ganolytes cameo</i>	sardine	Monterey
Fish, Bony	<i>Ganolytes cameo</i>	sardine	Monterey
Fish, Bony	<i>Ganolytes cameo</i>	sardine	Monterey
Fish, Bony	<i>Ganolytes cameo</i>	sardine	Monterey
Fish, Bony	<i>Ganolytes cameo</i>	sardine	Monterey
Fish, Bony	Hippoglossoides	flounder	Monterey
Fish, Bony	Scombridae	mackeral	Monterey
Fish, Bony	<i>Symphurus</i>	tonguefish	Monterey
Fish, Bony	<i>Thyrsocles</i>	oilfish	Monterey
Fish, Cartilaginous	<i>Otodus megalodon</i>	shark, big toothed	Monterey
Fish, Cartilaginous	Euselachii	shark	Monterey
Fish, Cartilaginous	<i>Isurus planus</i>	shark, mako	Monterey
Mammal, marine	Balaenopteridae	whale, baleen	Monterey
Mammal, marine	Desmostylidae	sea cow	Monterey
Mammal, marine	Desmostylidae	sea cow	Monterey
Mammal, marine	Desmostylidae	sea cow	Monterey
Mammal, marine	<i>Desmostylus</i>	sea cow	Monterey
Mammal, marine	<i>Desmostylus</i>	sea cow	Monterey
Mammal, marine	<i>Desmostylus</i>	sea cow	Monterey
Mammal, marine	<i>Desmostylus</i>	sea cow	Monterey
Mammal, marine	<i>Desmostylus</i>	sea cow	Monterey
Mammal, marine	Mysteceti	whale, baleen	Monterey
Mammal, marine	Mysticeti	whale, baleen	Monterey
Mammal, marine	Mysticeti	whale, baleen	Monterey
Tree, hardwood	? <i>Acer</i>	maple	Monterey
Tree, hardwood	Magnoliophyta	leaf	Puente
Tree, hardwood	Magnoliophyta	leaf	Puente
Mammal, marine	Mysticeti	whale, baleen	Capistrano
Mammal, marine	Otariidae	seal, fur	Capistrano
Mammal, marine	<i>Pontolis magnus</i>	walrus	Capistrano
Bird	Aves	bird	Older alluvium
Mammal, large	<i>Bison antiquus</i>	bison, ancient	Older alluvium
Mammal, large	<i>Camelops hesternus</i>	camel, yesterday's	Older alluvium
Mammal, large	<i>Equus</i>	horse	Older alluvium
Mammal, large	<i>Equus</i>	horse	Older alluvium
Mammal, large	<i>Equus</i>	horse	Older alluvium
Mammal, large	<i>Equus</i>	horse	Older alluvium
Mammal, large	<i>Equus</i>	horse	Older alluvium
Mammal, large	<i>Equus</i>	horse	Older alluvium
Mammal, large	<i>Equus</i>	horse	Older alluvium
Mammal, large	<i>Equus occidentalis</i>	horse	Older alluvium
Mammal, large	<i>Equus</i> sp.	horse	Older alluvium
Mammal, large	<i>Mammut</i>	mastodon	Older alluvium
Mammal, large	<i>Mammut</i>	mastodon	Older alluvium
Mammal, large	<i>Mammut pacificus</i>	mastodon	Older alluvium
Mammal, large	<i>Mammuthus</i>	mammoth	Older alluvium

Group	Taxon	Common Name	Formation
Mammal, large	<i>Mammuthus columbi</i>	mammoth, Columbian	Older alluvium
Mammal, large	<i>Megalonyx</i>	ground sloth, Jefferson's	Older alluvium
Mammal, large	<i>Megalonyx jeffersoni</i>	ground sloth, Jefferson's	Older alluvium
Mammal, large	<i>Ursus arctos</i>	bear, grizzly	Older alluvium
Mammal, small	<i>Lepus californicus</i>	jackrabbit	Older alluvium
Mammal, small	Mammalia	mammal	Older alluvium
Mammal, small	<i>Microtus</i>	vole	Older alluvium
Mammal, small	<i>Neotoma</i>	rat, wood	Older alluvium
Mammal, small	<i>Neotoma</i>	rat, wood	Older alluvium
Mammal, small	<i>Otospermophilus beecheyi</i>	squirrel, ground	Older alluvium
Mammal, small	<i>Peromyscus</i>	mouse, deer	Older alluvium
Mammal, small	Rodentia	rodent	Older alluvium
Mammal, small	<i>Sylvilagus</i>	rabbit, brush	Older alluvium
Mammal, small	<i>Sylvilagus bachmani</i>	rabbit, brush	Older alluvium
Mammal, small	<i>Thomomys</i>	gopher, pocket	Older alluvium
Mammal, small	<i>Thomomys</i>	gopher, pocket	Older alluvium
Mammal, small	<i>Thomomys bottae</i>	gopher, pocket	Older alluvium
Mammal, small	<i>Thomomys bottae</i>	gopher, pocket	Older alluvium
Bird	Aves	bird	Pleistocene alluvium
Mammal, large	<i>Bison antiquus</i>	bison, ancient	Pleistocene alluvium
Mammal, large	<i>Bison antiquus</i>	bison, ancient	Pleistocene alluvium
Mammal, large	<i>Bison antiquus</i>	bison, ancient	Pleistocene alluvium
Mammal, large	<i>Bison sp.</i>	bison	Pleistocene alluvium
Mammal, large	<i>Bison sp.</i>	bison	Pleistocene alluvium
Mammal, large	<i>Camelops sp.</i>	camel	Pleistocene alluvium
Mammal, large	Edentata	ground sloth, giant	Pleistocene alluvium
Mammal, large	<i>Equus sp.</i>	horse	Pleistocene alluvium
Mammal, large	<i>Mammuthus columbi</i>	mammoth, Columbian	Pleistocene alluvium
Mammal, large	<i>Mammuthus imperator</i>	mammoth, imperial	Pleistocene alluvium
Mammal, large	<i>Megalonyx jeffersonii</i>	ground sloth, Jefferson's	Pleistocene alluvium
Mammal, large	Mylodontidae	ground sloth, giant	Pleistocene alluvium
Mammal, large	<i>Paramylodon harlani</i>	ground sloth, Harlan's	Pleistocene alluvium
Mammal, large	<i>Paramylodon harlani</i>	ground sloth, Harlan's	Pleistocene alluvium
Mammal, large	<i>Paramylodon harlani</i>	ground sloth, Harlan's	Pleistocene alluvium
Mammal, large	<i>Paramylodon harlani</i>	ground sloth, Harlan's	Pleistocene alluvium
Mammal, large	<i>Paramylodon harlani</i>	ground sloth, Harlan's	Pleistocene alluvium
Mammal, large	<i>Paramylodon harlani</i>	ground sloth, Harlan's	Pleistocene alluvium
Mammal, large	<i>Paramylodon harlani</i>	ground sloth, Harlan's	Pleistocene alluvium
Mammal, large	<i>Paramylodon harlani</i>	ground sloth, Harlan's	Pleistocene alluvium
Mammal, large	<i>Paramylodon harlani</i>	ground sloth, Harlan's	Pleistocene alluvium
Mammal, large	<i>Paramylodon harlani</i>	ground sloth, Harlan's	Pleistocene alluvium
Mammal, large	<i>Paramylodon harlani</i>	ground sloth, Harlan's	Pleistocene alluvium
Mammal, large	<i>Paramylodon harlani</i>	ground sloth, Harlan's	Pleistocene alluvium
Mammal, large	<i>Paramylodon harlani</i>	ground sloth, Harlan's	Pleistocene alluvium
Mammal, large	<i>Paramylodon harlani</i>	ground sloth, Harlan's	Pleistocene alluvium
Mammal, large	Proboscidea	proboscidean	Pleistocene alluvium

<b>Group</b>	<b>Taxon</b>	<b>Common Name</b>	<b>Formation</b>
Mammal, small	Rodentia	rodent	Pleistocene alluvium
Bivalve	<i>Tagelus californianus</i>	clam, tagelus	Pleistocene marine
Bivalve	<i>Tagelus californianus</i>	clam, tagelus	Pleistocene marine
Mammal, large	Artiodactyla	artiodactyl	Quaternary alluvium
Mammal, small	<i>Thomomys</i> sp.	gopher, pocket	Quaternary alluvium
Mammal, small	<i>Perognathus</i>	mouse, pocket	Younger alluvium
Mammal, small	<i>Peromyscus</i>	mouse, deer	Younger alluvium
Reptile	<i>Pituophis</i>	snake, gopher	Younger alluvium
Snake	<i>Crotalus</i>	rattlesnake	Younger alluvium

## **APPENDIX D. CULTURAL RESOURCE STUDIES**



Report No.	Authors	Title	Year	Quad
OR-00003	King, Thomas F.	An Archaeological Reconnaissance of the Irvine Town Center Project, Orange County, California	1973	Tustin
OR-00008	Gothold, Jane and Maguire, John	Pacific Coast Archaeological Society Survey Along the North Side of the San Diego Freeway	1973	El Toro, Tustin
OR-00058	Desautels, Roger J.	Archaeological Report on the Survey of Meadow Mobile Homes Proposed Development North Irvine, Calif.	1976	Tustin
OR-00081	Desautels, Roger J.	Archaeological Survey Report on Tentative Tract No. 9379 - Lots A - 6 and A - 5 of Tract No.282 in the City of Irvine, Calif.	1976	Tustin
OR-00134	Desautels, Roger J.	Archaeological Survey Report on a Four Acre Parcel of Land Located in the Irvine Industrial Area, Irvine, California	1976	Tustin
OR-00142	Desautels, Roger J.	Archaeological Survey Report on the North Irvine Assessment District Located in The	1976	Tustin
OR-00147	Desautels, Roger J.	Archaeological Survey Report on Tentative Tract 9623 Located in the City of Irvine, County of Orange	1976	Tustin
OR-00206	Mabry, Theo N.	Test Level Investigations Conducted at CA-ORA-228 Turtle Rock, Irvine, California	1978	Tustin
OR-00233	Cottrell, Marie G.	Archaeological Survey Report for Village 12 and Village 14 (ORA-508 and ORA-543)	1977	Tustin
OR-00234	Cottrell, Marie G.	Addendum to Previous Report on Reach 4, Santiago Canyon Parallel Aqueduct	1978	El Toro
OR-00235	Cottrell, Marie G.	Report of Preliminary Archaeological Survey Conducted for the San Joaquin Hills Transportation Corridor	1978	Tustin
OR-00246	Cottrell, Marie G.	Report of Archaeological Resources Assessment Conducted for the Irvine Industrial Complex-west	1978	Tustin
OR-00252	Desautels, Roger J.	Cultural Resources Report- Preliminary Assessment on the Proposed San Diego Creek Watershed Erosion and Sedimentary Control System in Hicks Canyon, Hicks Canyon Wash, Rattlesnake Creek Wash, San Diego Creek, and the San Joaquin Marsh Located in Orange County	1978	El Toro, Tustin
OR-00253	Desautels, Roger J.	The Proposed Bee and Round Canyon Landfill Disposal Station Located in the County of Orange, California	1978	El Toro
OR-00274	Anonymous	Report of Archaeological Resources Survey Conducted for Laguna and Peter's Canyons	1978	Black Star Canyon, El Toro, Laguna Beach, Orange, San Juan Capistrano, Tustin
OR-00275	Mabry, Theo N.	Agua Chinon Flood Control Improvement Project	1978	El Toro

Report No.	Authors	Title	Year	Quad
OR-00284	Cottrell, Marie G.	Test Level Investigation Conducted for Site CA-ORA-287 (ORA-121)	1978	Tustin
OR-00285	Cottrell, Marie G.	Archaeological Investigations Conducted at CA-ORA-196, Irvine, California	1979	Tustin
OR-00286	Bean, Lowell	Cultural Resources and the High Voltage Transmission Line from San Onofre to Santiago Substation and Black Star Canyon	1979	Black Star Canyon, Canada Gobernadora, El Toro, Laguna Beach, San Juan Capistrano, Tustin
OR-00302	Unknown	A Preliminary Archaeological Overview: the Santiago County Water District Sewage Master Plan	1978	Black Star Canyon, El Toro
OR-00303	Unknown	Archaeological Records Search and Reconnaissance Survey Irvine Center Drive and Jeffery Road	1979	Tustin
OR-00304	Dodge, William A.	An Archaeological Assessment of Eight Cultural Localities Along the San Onofre-Santiago 220 Kv Transmission Line	1978	San Juan Capistrano, Tustin
OR-00305	Schroth, Adella	The History of Archaeological Research on Irvine Ranch Property: the Evolution of a Company Tradition	1979	Black Star Canyon, El Toro, Laguna Beach, Orange, San Juan Capistrano, Tustin
OR-00314	Desautels, Roger J.	Archaeological Survey Report on 2.875 Acres Located on Main Street, Irvine, County of Orange	1978	Tustin
OR-00328	Mabry, Theo N. and Thomas Taylor	Test-level Investigations Conducted on ORA-379, Irvine, CA	1979	Tustin
OR-00339	Craib, John L.	The Archaeology of a Late Horizon Midden (CA-ORA-197) on Newport Bay, Phase II	1977	Tustin
OR-00347	Allen, Lawrence P.	Archaeological Testing at CA-ORA-508, Village 14, City of Irvine	1979	Tustin
OR-00351	Rice, Glen E.	A Test Investigation of CA-ORA-119, Locus C, and a Report on a Rock Feature in Locus A	1976	Tustin
OR-00352	Cottrell, Marie G.	Preliminary Report of Fieldwork at 4-ORA-130	1977	Laguna Beach
OR-00353	Ellis, Robert R.	Archaeological Test Excavations at Site ORA-121, Orange County, California	1973	Tustin
OR-00362	Desautels, Roger J.	Archaeological Report: CA-ORA 195, Orange County, California	1967	Tustin
OR-00363	Cottrell, Marie G.	Test Level Investigations Conducted at Archaeological Sites CA-ORA-196 and CA-ORA-197	1976	Tustin
OR-00367	Ellis, Robert R.	Archaeological Report of Test Excavations at Site Ora 373 Orange County, California	1973	Tustin

Report No.	Authors	Title	Year	Quad
OR-00383	Van Horn, David M.	Archaeological Survey and Report on Fifty-seven Acres of Undeveloped Land in Modjeska Canyon, Orange County, Cal.	1977	El Toro
OR-00399	Unknown	Archaeological Salvage Program at Locus B and the Peripheral Sector of Locus A, ORA-287 (ORA-121), Irvine, California	1979	Tustin
OR-00408	Strozier, Hardy	Rancho San Joaquin Historical/archaeological Survey-phase I	1975	Tustin
OR-00409	Rice, Glen E.	Test Investigations at ORA-119, Locus B	1976	Tustin
OR-00410	Rice, Glen E. and Cottrell, Marie	Report of Excavations at CA-ORA-111, Locus II	1975	Tustin
OR-00411	Bingham, Jeffery C.	Test Excavations for CA-ORA-111 in Orange County, California	1975	Tustin
OR-00417	Mabry, Theo N.	Archaeological Reconnaissance Survey Enclaves V and VI, Turtle Rock Irvine, CA.	1979	Tustin
OR-00421	Mabry, Theo N.	Archaeological Reconnaissance of 11-acre Bonita Canyon Baptist Church Site, Orange County, California	1979	Tustin
OR-00427	Mabry, Theo N.	Test-level Investigations, North Bluffs of Upper Newport Bay, Newport Beach, CA.	1979	Tustin
OR-00428	Howard, Jerry B.	Archaeological Investigations Conducted at CA-ORA-373, an Encinitas Tradition Site in Orange County, California	1979	Tustin
OR-00435	Stickel, Gary E.	City of Los Angeles Hyperion Water Pollution Control Facilities County of Los Angeles Joint Water Pollution Control Plant, and Orange County Sanitation District Proposed Round Canyon Site	1979	El Toro
OR-00438	Unknown	Historic Property Survey Moulton Parkway/Irvine Center Drive Cities of Tustin and Irvine	1979	Tustin
OR-00440	Mabry, Theo N.	Records Search and Reconnaissance Harvard Avenue Extension City of Irvine, California	1979	Tustin
OR-00441	Mabry, Theo N.	Archaeological Records Search and Reconnaissance Survey Main Street/jamboree Road, Irvine, California	1979	Tustin
OR-00452	Anonymous	Archaeological Salvage Program at CA-ORA-508 Irvine, California	1979	Tustin
OR-00455	Anonymous	Archaeological Records Search and Reconnaissance Yale Avenue Right-of-ways, Irvine California	1979	Tustin
OR-00456	Mabry, Theo N.	Archaeological Records Search and Reconnaissance Survey Turtle Rock Enclaves 6 and 7	1979	Tustin

Report No.	Authors	Title	Year	Quad
OR-00483	Gill, Pamela	A Report of the Excavation at CA-ORA-120, a Project Presented to the Faculty of California State University, Fullerton, in Partial Fulfillment of the Requirements for the Degree in Master of Arts in Anthropology	1974	Tustin
OR-00486	Mitchell, Laura Lee	Woodbridge Observer Survey Project Report on Following Heavy Grading in the City of Irvine by the Pacific Coast Archaeological Society	1976	Tustin
OR-00488	Anonymous	Archaeological Investigation of a Late Prehistoric Horizon Site, CA-ORA-379, City of Irvine, California	1980	Tustin
OR-00489	Cottrell, Marie and Adella Schroth	Report of Test Excavations Conducted at CA-ORA-350, a Rockshelter at Turtle Rock Enclave V, Orange County, California	1980	Tustin
OR-00492	Anonymous	Archaeological Records Search and Field Survey Northwood Project Sited Number One and Two, City of Irvine, California	1980	Tustin
OR-00494	Singer, Clay A.	Preliminary Assessment of Cultural Resources Within the Proposed Peters Canyon Regional Park, Orange County	1976	Black Star Canyon, Orange
OR-00519	Unknown	Limited Testing on CA-ORA-373 Home Improvement Center City of Irvine, CA.	1980	Tustin
OR-00520	Mabry, Theo N.	Archaeological Records Search and Reconnaissance Survey Irvine Industrial Complex-east Phase 2 and 3 Areas Irvine, CA.	1979	El Toro
OR-00531	Hurd, Gary S.	Test Excavation for CA-ORA-116	1980	Tustin
OR-00532	Hurd, Gary S.	Cultural Resources of the Irvine Campus	1980	Tustin
OR-00544	Colegrove, Stephen E.	Archaeological Survey Report for Turtle Rock Planning Area	1973	Tustin
OR-00570	Anonymous	File Report on CA-ORA-342	1980	Tustin
OR-00574	Stickel, Gary E. and Jerry B. Howard	Final Report of a Cultural Resource Survey of the University of California, Irvine	1976	Tustin
OR-00581	McCoy, Lesley C. and Kirkish, Alex N.	Cultural Resources Data Recovery Program for the 230kv Transmission Line Rights-of-way From San Onofre Nuclear Generating Station to Black Star Canyon and Santiago Substation and to Encina and Mission Valley Substations	1982	Black Star Canyon, El Toro, Laguna Beach, San Juan Capistrano, Tustin
OR-00586	Douglas, Ronald D.	Assessment of Cultural/scientific Resources, Village 12, Sce Hvtl Relocation, Irvine, California	1980	Tustin
OR-00589	Kaldenberg, Russell L.	Archaeological Investigations at the World Medical Foundation Site Orange County, California	1976	Tustin
OR-00592	Douglas, Ronald D. and Edward C. Gardener	Cultural Resource Assessment Irvine Meadows Amphitheater Development Site Irvine, California	1981	El Toro, Tustin

Report No.	Authors	Title	Year	Quad
OR-00596	Mabry, Theo N.	Archaeological Records Search and Reconnaissance Survey: Orangetree Park 20-acre Initial Study, Irvine, CA.	1979	Tustin
OR-00599	Jertberg, Patricia R.	An Archaeological Resources Assessment Conducted for the Widening and Realignment of Irvine Blvd. Orange County, California	1981	El Toro, Tustin
OR-00615	Douglas, Ronald D.	Archaeological Resource Survey Northern Inland Coastal Hills Planning Area Orange County, California	1981	Tustin
OR-00621	Weisbord, Jill	Cultural Resource Survey of the Irvine Center Da, Village 13	1981	Tustin
OR-00634	Padon, Beth	Cultural Resource Survey for General Plan Amendment, Bommer and Shady Canyons, Orange County, California	1982	Laguna Beach, Tustin
OR-00645	Mabry, Theo N.	Archaeological Survey Report for Proposed Improvements to Jeffrey Road and I-5 Freeway, City of Irvine, Calif.	1981	Tustin
OR-00647	Gardener, Edward	Cultural Resources Records Search and Field Survey Northwood Project Sites 3 and 4 City of Irvine, Calif.	1981	Tustin
OR-00648	Breece, Bill and Beth Padon	Cultural Resource Survey: Archaeological Resources: Foothill Transportation Corridor, Phase II	1982	Black Star Canyon, El Toro, Orange, Tustin
OR-00668	Tadlock, Jean and W. Lewis Tadlock	San Joaquin Hills Transportation Corridor Cultural Resources Study -- Archaeology --	1979	Laguna Beach, Tustin
OR-00669	Padon, Beth	Assessment of Archaeological and Paleontological Resources Irvine Medical Complex Irvine, CA	1983	Tustin
OR-00671	Padon, Beth	Assessment of Archaeological and Paleontological Resources Irvine Medical Center Irvine, California	1983	Tustin
OR-00672	Padon, Beth	Assessment of Archaeological Resources, RV Storage Project Irvine, California	1983	Tustin
OR-00675	Drover, Christopher E.	Environmental Impact Evaluation: Laguna/Laurel Biological and Cultural - - Scientific Resource Assessment. Archaeological Element	1982	Laguna Beach
OR-00683	Douglas, Ronald D.	Archaeological and Paleontological Resource Assessment, Turtle Rock Enclave Eight Irvine, California	1981	Tustin
OR-00687	Cottrell, Marie G.	Archaeological Resources Assessment Conducted for the Laurel Canyon Area of the Laguna - Laurel Planned Community	1983	Laguna Beach
OR-00693	Cottrell, Marie G.	Tomato Springs: The Identification of a Jasper Trade and Production Center in Southern California		El Toro
OR-00696	Cottrell, Marie and K. Del Chario	Archaeological Investigations of the Tomato Springs Sites	1981	El Toro

Report No.	Authors	Title	Year	Quad
OR-00697	Padon, Beth	Archaeological Records Search and Field Review of the 30-acre Parcel at the Iic-east Phase 3 Project Site for Monitoring	1983	El Toro
OR-00698	Padon, Beth	Historic Property Survey Report Proposed Yale Avenue/ I-5 Over Crossing, Irvine California	1983	Tustin
OR-00700	Gardener, Edward	Cultural Resource Assessment, Laguna Lakes Golf Course Development Property, Orange County, California	1981	Laguna Beach, San Juan Capistrano, Tustin
OR-00714	Cottrell, Marie G.	Archaeological Resources Assessment: Coyote Canyon Sanitary Landfill	1983	Laguna Beach, Tustin
OR-00715	Drover, Christopher E.	Environmental Impact Evaluation: Laguna/Laurel Biological and Cultural-- Scientific Resource Assessment. Archaeological Element	1982	Laguna Beach
OR-00716	Tadlock, Jean and W. Lewis Tadlock	San Joaquin Hills Transportation Corridor Cultural Resources Study -- Archaeology --	1979	Laguna Beach, Tustin
OR-00718	Van Horn, David M., J.D. Cooper, E. Crespin, and J.R. Murray	A Cultural/Scientific Resources Investigation of the Planned San Joaquin Hills Transportation Corridor (phase II)	1983	Laguna Beach, San Juan Capistrano, Tustin
OR-00720	Cottrell, Marie G.	San Joaquin Transportation Corridor: An Annotated List of Archaeological Reports Referenced by Number.	1983	Laguna Beach, San Juan Capistrano, Tustin
OR-00721	Weisbord, Jill and Edward Weil	Archaeological Monitoring Activities at CA-ORA-178 University Drive Widening Project, City of Irvine, California November-December, 1983.	1983	Tustin
OR-00726	Padon, Beth A.	Archaeological Field Review Village 19a Project, City of Irvine, CA.	1984	Tustin
OR-00732	Padon, Beth	Archaeological Monitoring for Turtle Rock Enclave VI Project	1984	Tustin
OR-00737	Padon, Beth	Cultural Resources Assessment Planning Area 34b Orange County, California	1984	El Toro
OR-00741	Romani, John F.	Archaeological Survey Report For the Proposed Widening of Route ORA-133, Between Canton Acres Drive and I-405 Pm. 1.09-8.23 07-210-003940	1984	Tustin
OR-00742	Padon, Beth	Historic Property Survey Report for Irvine Center Drive Widening	1984	El Toro
OR-00743	Padon, Beth	Historic Property Survey Report for the Proposed Sand Canyon/I-405 Interchange City of Irvine, California (ORA-405-2.9)	1984	Tustin
OR-00744	Padon, Beth	Negative Archaeological Survey Report, Route I-405 25.8	1984	Tustin
OR-00747	Wlodarski, Robert J. and John F. Romani	Negative Archaeological Survey Report: the Proposed Project Involved the I-5 Interchange at Myford Road Where Several Alternatives are Proposed	1984	Tustin

Report No.	Authors	Title	Year	Quad
OR-00752	Mason, Roger D.	Eastern Corridor Alignment Study, Orange County, California; Volume II: Prehistory and History	1984	Black Star Canyon, El Toro, Orange, Tustin
OR-00753	Padon, Beth	Archaeological Resource Assessment Irvine Industrial Complex East Phase IV, City of Irvine.	1984	El Toro
OR-00754	Padon, Beth	Cultural Resource Assessment, Irvine Center Project, Orange County, California	1984	El Toro, Tustin
OR-00761	Anonymous	Cultural Resource Assessment Village 12 Development Site Irvine, California	1981	Tustin
OR-00762	Ahlering, Michael L.	A Discussion of Scientific Cultural Resources in Relation to the North Irvine Precise Land Use Plan		Tustin
OR-00764	Padon, Beth	Archaeological Records Search for the Commercial Core Area of University Town Center	1983	Tustin
OR-00771	Padon, Beth	Archaeological Assessment of the Irvine Technology Center of Irvine	1985	El Toro, Tustin
OR-00774	Brock, James P.	Archaeological, Paleontological and Historical Resources Assessment Report for the U.C. Irvine North Campus Property	1985	Tustin
OR-00783	Padon, Beth	An Archaeological Assessment of the North Ford/university Avenue Project , City of Newport Beach	1985	Tustin
OR-00784	Cady, R.L.	Historic Property Survey-Negative Findings	1985	El Toro, Tustin
OR-00785	Padon, Beth	Archaeological Monitoring for the Northwood Horizon Project	1985	Tustin
OR-00786	Padon, Beth	Archaeological Monitoring for the Northwood Place Apartment Project	1985	Tustin
OR-00787	Padon, Beth	Archaeological and Paleontological Monitoring for the Irvine Center Project	1985	El Toro, Tustin
OR-00802	Padon, Beth	An Archaeological Assessment Village 12 City of Irvine	1985	Tustin
OR-00805	Padon, Beth	Archaeological Monitoring for the Westpark Project	1986	Tustin
OR-00807	Les, Kathleen	Draft Environmental Impact Report Santiago Aqueduct Parallel Reaches 2-6	1978	El Toro
OR-00808	Unknown	Final Environmental Impact Report Regional Domestic Water Storage and Transmission Facilities From Diemer/sac and Wellfield Systems to Existing Distribution Network	1979	El Toro, San Juan Capistrano
OR-00814	Romani, John F.	ARCHAEOLOGICAL SURVEY REPORT for the Route I-5 Santa Ana Transportation Corridor, Route 405 in Orange County to Route 605 in Los Angeles County Pm 21.30/44.38; 0.00/6.85	1982	El Toro, Orange, Tustin
OR-00829	Breece, Bill and Beth Padon	Archaeological Investigation at CA-ORA-228	1986	Tustin

Report No.	Authors	Title	Year	Quad
OR-00830	Padon, Beth	Cultural/scientific Assessment of the Laguna Canyon Road Project	1986	Tustin
OR-00841	Mason, Roger D.	Archaeological, Historical, and Paleontological Assessments for Planning Area 34b, City of Irvine	1986	El Toro
OR-00847	Padon, Beth	Archaeological Resource Inventory City of Irvine and its Sphere of Influence	1985	Black Star Canyon, El Toro, Laguna Beach, Orange, San Juan Capistrano, Tustin
OR-00856	Padon, Beth	Archaeological and Paleontological Field Review: Irvine Business Complex, City of Irvine		Tustin
OR-00863	Bissell, Ronald M.	Cultural Resources Reconnaissance of Jamboree Center, Phase 2, Irvine, Orange County, California	1987	Tustin
OR-00867	Brock, James P.	Archaeological Monitoring at the Centerstone Plaza Project, Southeast Corner of Culver and Barranca, Irvine, California	1987	Tustin
OR-00868	Padon, Beth	Historic Property Survey Report for the I-5/I-405 Confluence City of Irvine, CA	1987	El Toro, San Juan Capistrano
OR-00869	Rosenthal, Jane and Beth Padon	An Archaeological Overview of the Coyote Canyon Sanitary Landfill Final Report	1987	Laguna Beach, Tustin
OR-00906	Padon, Beth and Pat Jertberg	Cultural Resources Report for the San Diego Creek Drainage Basin Project Level Facilities Orange County	1988	Tustin
OR-00907		Cultural Resources Investigation of the Loma Ridge Project Site	1988	Black Star Canyon
OR-00925	Padon, Beth	Report on Paleontological and Archaeological Monitoring Coyote Canyon Landfill Orange County, California	1988	Laguna Beach, Tustin
OR-00932	Bissell, Ronald M.	Cultural Resources Reconnaissance of a 4.5 Parcel in the City of Irvine, Orange County, California	1988	Tustin
OR-00933	Bissell, Ronald M.	Cultural and Paleontological Resources Reconnaissance of the Long Range Development Plan Study Area, University of California, Irvine, Orange County, California	1988	Tustin
OR-00939	Bissell, Ronald M.	Archaeological Resources Reconnaissance of the Long Range Development Plan Study Area, University of California, Irvine, Orange County, California	1988	Tustin
OR-00954	Farnsworth, Paul S. and N. Whitney-Desautels	Determination of National Register Eligibility and Treatment Plan and Data Recovery Program for Archaeological Sites on the Coyote Canyon Sanitary Landfill Property, Orange County, California	1989	Laguna Beach, Tustin



Report No.	Authors	Title	Year	Quad
OR-00969	Jertberg, Patricia R.	Cultural Resource Assessment Jamboree Road Widening	1989	Tustin
OR-00972	Jertberg, Patricia R.	Archaeological and Paleontological Monitoring at Spectrum I Parcel #87-212	1989	El Toro, Tustin
OR-00981	Breece, William H.	Results of the Survey and Test Phase Investigations at CA-ORA-218 and CA-ORA-1041 University of California, Irvine, Orange County	1989	Tustin
OR-00983	Bissell, Ronald M.	Cultural Resources Reconnaissance of East Orange Planning Area 1, 1,800 Acres in Eastern Orange County, California	1989	Black Star Canyon, Orange
OR-00990	Mabry, Theo N. and Ronald D. Douglas	A Test-level Investigation of CA-ORA-729, Bonita Canyon Creek, City of Irvine, California	1979	Tustin
OR-00991	Jertberg, Patricia R.	Archaeological and Paleontological Monitoring at Multi-modal Transportation Center: Dear Steve:	1989	El Toro
OR-00997	Jertberg, Patricia R.	Archaeological Monitoring for Tentative Parcel No. 88-151, Lots 1, A, 3, 4, and 5	1990	Tustin
OR-01011	Sorensen, Jerrell H.	Archival Research for Interstate 5, From the Confluence With I 405 to Route 1, Capistrano	1990	El Toro, San Juan Capistrano
OR-01015	Jertberg, Patricia R.	Archaeological and Paleontological Monitoring at Spectrum V Wire Center Project Area	1990	El Toro
OR-01022	Del Chario, Kathleen C., V. Drummy-Chapel, and C. R. Demcak	Cultural Resource Assessment for the Allen-mccolloch Pipeline (amp) Flow Augmentation Project Reaches S4b/s5	1989	El Toro
OR-01026	Mason, Roger D.	Cultural Resources Survey Report Santiago Canyon Road Alignment Study Orange County, California	1990	Black Star Canyon, El Toro, Orange
OR-01032	White, Robert S.	Archaeological Resource Assessment Two Road Alignments Within Village 34 Lake Forest Drive and Bake Parkway Orange County, California	1990	El Toro, Tustin
OR-01040	Jertberg, Patricia R.	Archaeological and Paleontological Monitoring Report for Tract 13627	1990	Orange, Tustin
OR-01046	Jertberg, Patricia R.	Archaeological Monitoring Results - Amherst Court Project Letter: Dear Ms. Griffiths	1990	Tustin
OR-01048	Jertberg, Patricia R.	Archaeological Monitoring Report Tustin Ranch Lot 14 Tract 13746. Archaeological Survey Letter: Dear Mr. Haaland	1990	Tustin
OR-01058	Jertberg, Patricia R.	Archaeological and Paleontological Monitoring for Bison and Berkeley Avenues Extensions	1990	Tustin
OR-01068	Shinn, Juanita R.	Cultural Resources Reconnaissance of the 25 Acre Irvine Planning Area 23 Project Orange County, California	1991	Tustin
OR-01070	Jertberg, Patricia R.	Archaeological Monitoring for Turtle Rock Enclave VII Project	1990	Tustin

Report No.	Authors	Title	Year	Quad
OR-01072	Jertberg, Patricia R.	Final Report on Archaeological Monitoring at Coyote Canyon Sanitary Landfill Orange County, California	1990	Laguna Beach, Tustin
OR-01075	Breece, William H. and Jane Rosenthal	The Results of the Test Excavation at CA-ORA-767 A/B, Laguna Canyon Orange County	1990	Tustin
OR-01079	Jertberg, Patricia R.	Archaeological Monitoring Report for Tract #13786	1990	Tustin
OR-01082	Jertberg, Patricia R.	Archaeological Monitoring Report for Rheon USA Project: Parcel Map No. 84-629, Lot 6 Irvine, California	1990	El Toro
OR-01085	Jertberg, Patricia R.	Archaeological Monitoring for the State Farm Project Area	1991	Tustin
OR-01096	Breece, William H.	Archaeological Monitoring at the LUSD Project Site, Irvine	1990	Tustin
OR-01098	Padon, Beth	Cultural/Scientific Resources Assessment for Planning Area 13	1991	Tustin
OR-01099	Cooley, Theodore G.	Archaeological Resources Assessment Conducted for Proposed Irvine Ranch Water District Pipeline Right of Ways	1979	Black Star Canyon, El Toro, Orange, Tustin
OR-01101	Brown, Joan C.	Salvage Procedures at CA-ORA-1248, an Archaeological Site Located in Irvine, Orange County, California	1991	Tustin
OR-01103	Desautels, Nancy A.	Cultural Resource Investigation for the Loma Ridge Project Site, Orange County, California	1990	Black Star Canyon
OR-01108	Padon, Beth	Archaeological and Paleontological Resource Assessment, Laguna Canyon Reclaimed Water Facilities	1991	El Toro
OR-01109	Padon, Beth	Addendum to the Historic Property Survey Report for Irvine Center Drive Widening	1986	El Toro
OR-01115	Desautels, Nancy A.	Cultural Resource Investigation for the Expansion of the Loma Ridge Communication Center Orange County, California	1991	Black Star Canyon
OR-01120	Marmor, Jason D.	Historic Architectural Survey Report for a Segment of Macarthur Boulevard Pacific Coast Highway to University Drive Newport Beach/Irvine, Orange County, California	1991	Laguna Beach, Tustin
OR-01123	Clevenger, Joyce M.	Archaeological Salvage Program at Locus B and the Peripheral Sector of Locus A, ORA-287 Irvine, California.	1979	Tustin
OR-01124	Clevenger, Joyce M.	Archaeological Investigations at CA-ORA-287 a Multicomponent Site on Newport Bay.	1986	Tustin
OR-01125	Koerper, Henry C. and Christopher E. Drover	Chronology Building for Coastal Orange County: the Case From CA-ORA-119-A.	1983	Tustin

Report No.	Authors	Title	Year	Quad
OR-01127	Rosenthal, Jane	Past to Present: Cultural and Scientific Resources, an Archival Inventory Irvine Ranch Open Space Reserve Orange County, California	1991	Black Star Canyon, El Toro, Laguna Beach, Orange, San Juan Capistrano, Tustin
OR-01131	Follett, W. I.	Fish Remains from Archaeological Sites at Irvine Orange County California	1966	Tustin
OR-01133	De Barros, Philip and Henry C. Koerper	Final Test Investigation Report and Request for Determination of Eligibility for 23 Sites Along the San Joaquin Hills Transportation Corridor	1990	Laguna Beach, San Juan Capistrano, Tustin
OR-01143	Bissell, Ronald M.	Cultural Resources Reconnaissance of Two Small Parcels Near the Marine Corps Air Station, Tustin, California and a Larger parcel within Mile Square Park, Fountain Valley, Orange County, California	1990	Tustin
OR-01149	Douglas, Ronald D.	An Unusual Groundstone Artifact	1979	Tustin
OR-01164	Evans, Stuart A.	A Cultural Resources Reconnaissance of the San Diego Creek Improvement/Barranca Parkway Connection, Approximately 70 Acres in Irvine, Orange County, California.	1991	Tustin
OR-01170	Rosenthal, Jane	Addendum to Cultural Resources Assessment Jamboree Road Widening Irvine, California	1991	Tustin
OR-01171	Cooley, Theodore G.	A Scientific Resources (Archaeological, Paleontological, and Historical) Survey of a Proposed Gravel Extraction Haul Road.	1974	Black Star Canyon, El Toro
OR-01196	Padon, Beth	Archaeological Assessment of CA-ORA-341 Irvine, Orange County, CA	1992	Tustin
OR-01202	Jones, Carleton S., Kathleen C. Allen, and Carol R. Demcak	Archaeological Investigations at CA-ORA-1194, a Plant-processing Site Near Upper Newport Bay	1992	Tustin
OR-01209	Jertberg, Patricia R. and Dianne Marsh	Tin Shed-Village 38 Irvine Ranch Irvine, California	1991	Tustin
OR-01213	Rosenthal, Jane	A Cultural Resources Assessment of the All American Asphalt Plant, City of Irvine Sphere of Influence, Orange County, California	1992	El Toro
OR-01214	Del Chario, Kathleen C and Marie G. Cottrell	Report of a Cultural\Scientific Resources Survey Conducted for the Supplemental Study Area (Alignments 72a, 73, 73a, and 83a) Eastern Transportation Corridor	1986	Tustin
OR-01220	Koerper, Henry C.	A Speculation on the Existence of Talon-Shaped Exotics in Southern California	1988	Tustin
OR-01223	Koerper, Henry C., A.J.T. Jull, T.W. Linick, and L.J. Toolin	A Tandem Accelerator Mass Spectrometer (TAMS) C-14 Date for a Haliotis Fishhook	1988	Tustin
OR-01233	Cottrell, Marie G. and Hugh M. Wagner	Tomato Springs: Additional Research Results	1990	El Toro

Report No.	Authors	Title	Year	Quad
OR-01234	Koerper, Henry C. and Clay A. Singer	Two Unusual Perforated Stones from the Newport Bay Area	1988	Tustin
OR-01254	Mason, Roger D., Mark L. Peterson, Brant A. Brechbiel, Clay A. Singer, Paul E. Langenwalter II, and Tony Morgan	Newport Coast Archaeological Project Results of Data Recovery from Sites Impacted by Construction of Pelican Hill Road Segment B (Newport Coast Drive)	1991	Tustin
OR-01276	De Barros, Phillip	Boundary Delineation of CA-ORA-196/h Irvine Ranch Water District Demonstration Gardens Project	1993	Tustin
OR-01282	Babal, Marianne, Jane Rosenthal, and Beth Padon	Historic Documentation Irvine Ranch Water District Caretaker House Bryan Road, Irvine California	1992	Tustin
OR-01297	Bissell, Ronald M.	Cultural Resources Reconnaissance of a Small Parcel of Land Near in Irvine, Orange County, California	1993	El Toro
OR-01309	Macko, Michael E.	Final Report Summary of Archaeological Monitoring, Test Excavations, and Data Recovery for the Foothill Transportation Corridor Northern Segment	1993	El Toro
OR-01310	Macko, Michael E. and Gary Hurd	Results of Archaeological Test Excavations for the Foothill Transportation Corridor Northern Segment, Construction Section F8 and F9	1992	El Toro
OR-01311	Macko, Michael E. and Gary Hurd	Final Report Early Settlement in Agua Chinon Canyon Results of Archaeological Data Recovery Excavations at CA-ORA-1070, -1298 and -1299, Foothill Transportation Corridor, Northern Segment, Construction Sections F8 and F9	1992	El Toro
OR-01312	Macko, Michael E. and Gary Hurd	Appendices To: Final Report Early Settlement in Agua Chinon Canyon Results of Archaeological Data Recovery Excavations at CA-ORA-1070, -1298 and -1299, Foothill Transportation Corridor Northern Segment, Construction Sections F8 and F9	1992	El Toro
OR-01317	Magalousis, Nicholas M.	Archaeological and Paleontological Observation of Grading at 9 Hillgate Irvine, California	1993	Tustin
OR-01318	Bissell, Ronald M.	Cultural Resources Reconnaissance of the Proposed Round Canyon Retarding Basin, Facility No. F16b03, Orange County, California	1993	El Toro
OR-01332	Rosenthal, Jane	An Archaeological Assessment of the Proposed University II Project, University of California, Irvine	1993	Tustin

Report No.	Authors	Title	Year	Quad
OR-01339	Demcak, Carol R. and Marie G. Cottrell	Report of Archaeological Investigations Performed in Association with the Upper Newport Bay Bike and Equestrian Trail	1985	Tustin
OR-01340	Quenette, Terry L. and Marie G. Cottrell	Archaeological Test Level Investigation of the 40 Foot Impact Zone Due to Proposed Widening of University Drive	1980	Tustin
OR-01350	McKenna, Jeanette A. and Philip De Barros	Archaeological Survey Report Historic Sites Addendum San Joaquin Hills Transportation Corridor 12-ORA-73 12-102540	1993	Laguna Beach, San Juan Capistrano, Tustin
OR-01351	McKenna, Jeanette A. and Philip De Barros	Historic Study Report San Joaquin Hills Transportation Corridor 12-ORA-73 12-102540	1993	Laguna Beach, San Juan Capistrano, Tustin
OR-01353	Weber, Carmen A.	Cultural Resources Survey for the Central Pool Augmentation and Water Quality Project	1992	El Toro
OR-01355	Cottrell, Marie G.	A Cultural Resources Assessment Conducted for the Extension of Project Site a Marine Corps Air Station (H) Tustin	1984	Tustin
OR-01357	White, Robert S. and Laura S. White	An Extended Literature and Records Search Addressing Prehistorical Archaeological Resources Located within the Boundaries of the US Marine Corps Air Station (MCAS), Tustin Orange County, California	1993	Tustin
OR-01371	Padon, Beth and Fran Govean	An Archaeological and Paleontological Assessment of the Proposed Planning Area 10 Project, City of Irvine, Orange County	1993	Tustin
OR-01380	Mason, Roger D.	Treatment Program for ORA-1358 in the Macarthur Segment, San Joaquin Hills Transportation Corridor Irvine, California Pursuant to 36 Cfr 800.11	1994	Tustin
OR-01394	Chace, Paul G.	A Cultural Resources Survey for the Northwood Point Planned Community (Northwood 5), County of Orange Tentative Tract Map No. 14540	1994	El Toro, Tustin
OR-01396	Conkling, Steve	Cultural Resources Assessment - Warner Avenue Bridge over Peters Canyon Channel, Tustin, Orange County, California	1994	Tustin
OR-01402	Brock, James P.	Cultural Resources Assessment for the Irvine Desalter Project, Irvine, California	1994	El Toro, Tustin
OR-01404	Padon, Beth and Fran Govean	An Archaeological and Paleontological Resource Review of the Proposed Planning Area 8 Project, City of Irvine, Orange County, USGS Tustin 7.5' Quadrangle, 60 Acres	1994	Tustin
OR-01407	Brown, Joan C.	Cultural Reconnaissance for the Service Connection Enlargement of the Flow Control Facility St-04	1994	El Toro

Report No.	Authors	Title	Year	Quad
OR-01408	Demcak, Carol R.	Final Report of Test Level Investigation at ORA-758, Alton Parkway Extension Project, County of Orange, California	1994	El Toro
OR-01413	Whitney-Desautels, Nancy A. and David A. Kice	Cultural Resources Assessment of the Irvine Ranch Water District Alternate Aqueous Waste Disposal Facility Sites, Orange County, California	1993	El Toro, Tustin
OR-01417	Koerper, Henry C., Paul E. Langenwalter, Adella Schroth, Robert O. Gibson, Margaret Newman, Lisa Panet Klug, Virginia S. Klug, and Jonathon E. Ericson	The Christ College Project Archaeological Investigations at CA-ORA-378, Turtle Rock, Irvine, California	1995	Tustin
OR-01419	Strudwick, Ivan H. and Bradley Sturm	Cultural Resource Assessment - Planning Area 12, City of Irvine, Orange County, California	1994	Tustin
OR-01422	Padon, Beth	An Archaeological Assessment of a Portion of Planning Area 12, City of Irvine, USGS Tustin Quadrangle, 30 Acres	1994	Tustin
OR-01423	McLean, Deborah K.	Cultural Resources Assessment- Planning Area 10, City of Irvine Orange County, California	1994	Tustin
OR-01426	McLean, Deborah K.	Cultural Resources Assessment Hicks Canyon and East Hicks Canyon Retarding Basins Orange County Ema File No. LP.94-124	1994	El Toro
OR-01439	McCoy, Lesley C. and Phillips Roxana	National Register Assessment Program of Cultural Resources of the 230 Kv Transmission Line Rights-of-Way From San Onofre Nuclear Generating Station to Black Star Canyon and Santiago Substation and to Encina and Mission Valley Substation	1980	Black Star Canyon, Canada Gobernadora, El Toro, Laguna Beach, San Clemente, San Juan Capistrano, Tustin
OR-01448	Demcak, Carol	Cultural Resources Assessment for Reservoir Alternative 3, Sand Canyon Reservoir, Orange County, California	1996	Tustin
OR-01466	Rosenthal, Jane	Archaeological and Paleontological Monitoring of Preliminary Grading and Trenching for the Oak Creek Golf Course	1996	Tustin
OR-01476	Padon, Beth	Archaeological Monitoring of Preliminary Grading and Trenching for UCI/TIC University Research Park, Planning Area 25, Parcel 1 and 2 of Tentative Parcel Map No.94-160	1996	Tustin
OR-01481	Strudwick, Ivan H.	Results of Archaeological Testing in the Northeast Portion of CA-ORA-196/H for the Michelson Drive Bridge Widening, San Diego Creek, Irvine, California	1996	Tustin

Report No.	Authors	Title	Year	Quad
OR-01485		Archaeological Test Investigations at CA-ORA-1457/H Supplemental Report for the Eastern Transportation Corridor Orange County, California	1996	Orange
OR-01486		Archaeological Test Investigations at CA-ORA-1371-H and CA-ORA -1440 Supplemental Report for the Eastern Transportation Corridor of Orange County, California	1996	El Toro
OR-01488		Archaeological Test Investigations at CA-ORA-649, CA-ORA-1458, and CA-ORA-1459 Supplemental Report for the Eastern Transportation Corridor Orange County, California	1996	El Toro
OR-01490	McLean, Deborah K.	Cultural Resources Assessment for Newport Coast Drive Extension, Off-site Mitigation Areas, Orange County, CA.	1996	Laguna Beach, Tustin
OR-01502	McLean, Deborah K.	Cultural Resources Assessment - Newport Coast Drive Extension	1995	Laguna Beach, Tustin
OR-01507	Rosenthal, Jane	Archaeological and Paleontological Monitoring of Preliminary Grading for Irvine Spectrum 5, Phase 1a and 1c, Irvine, California	1995	El Toro
OR-01508	Jertberg, Patricia R.	Archaeological Monitoring Letter Report for Mini-u Storage Project, Warner Avenue at Jamboree Road, City of Tustin and City of Irvine	1996	Tustin
OR-01516	Padon, Beth	Archaeological and Paleontological Monitoring of Grading for the Lower Peters Canyon Bryan Avenue Cutoff Berm, Tentative Tract No. 1527, County Permit #GA960017	1996	Tustin
OR-01517	Padon, Beth	Archaeological Assessment Report: 16830 1/2 Sand Canyon Ave., Irvine	1996	Tustin
OR-01521	Conkling, Steven W., Brad Sturm and Diann Taylor	Cultural Resources Assessment, Planning Area 22, City of Irvine, Orange County, California	1995	Laguna Beach, Tustin
OR-01526	Demcak, Carol R.	Report of Archaeological Survey for L.A. Cellular Site #185, 17731 Cowan, Irvine, Orange County	1996	Tustin
OR-01530	McKenna, Jeanette A.	A Phase II Archaeological Testing Program for CA-ORA-178 and CA-ORA-382 and a Reconnaissance Survey for CA-ORA-344/349, All Located in the Sand Canyon Area of Irvine, Orange County, California	1996	Tustin
OR-01542	Demcak, Carol R.	Final Report of Archaeological Monitoring for L.A. Cellular Site #685.1, City of Irvine, Orange County, California	1997	Tustin
OR-01552	Padon, Beth	Archaeological and Paleontological Monitoring of Preliminary Grading for Irvine Spectrum 5, Phase 1a.2, Irvine	1997	El Toro

Report No.	Authors	Title	Year	Quad
OR-01555	Allen, Kathleen C. and Dibble, Stephen D.	Archaeological Salvage Investigations at CA-ORA-575, City of Irvine	1995	Tustin
OR-01557	Strudwick, Ivan H., Deborah McLean, William McCawley, Steve Conkling, and Brad Sturm	Test Level Investigations at CA-ORA-1371/H, East Hicks Canyon, Orange County, California	1995	El Toro
OR-01570	Padon, Beth and Fran Govean	An Archaeological and Paleontological Resource Review of the Proposed Planning Area 25 Project, City of Irvine, Orange County	1995	Tustin
OR-01576	Slawson, Dana N.	Cultural and Historical Resources Impact Analysis for the Proposed East Campus Student Recreation Center University of California, Irvine	1997	Tustin
OR-01577	Padon, Beth	Archaeological and Paleontological Monitoring of Preliminary Grading for Irvine Spectrum 6, Area B 1, 2, 3, Irvine, California	1997	Tustin
OR-01583	Nicoll, Gerald A.	Archaeology and Paleontology Report for Rancho De Los Alisos Area, Orange County, California	1974	El Toro
OR-01587	Demcak, Carol R.	Report of an Archaeological Assessment for Civic Center Park, City of Irvine, Orange County, California	1997	Tustin
OR-01591	Breece, Bill and Beth Padon	Archaeological and Paleontological Assessment of the Habitat Enhancement Project	1986	Tustin
OR-01592	Becker, Kenneth M.	Evaluation of the Cultural Resources of the Bee Canyon Retarding Basin, Orange County, California	1997	El Toro
OR-01610	Stickel, Gary E.	An Archaeological Site Survey of the Hellman Ranch, City of Seal Beach, California	1996	Los Alamitos, Seal Beach
OR-01614	Padon, Beth	Archaeological Monitoring of Preliminary Grading and Trenching for Uci/tic University Research Park, Planning Area 25, Parcels 3 and 4, and Portions of Parcels 6,7, and 8 of Tentative Parcel Map No. 94-160	1997	Tustin
OR-01615	Jertberg, Patricia R.	Archaeological Monitoring Report for the Northwood High School Grading Project, City of Irvine, Orange County, California	1997	El Toro, Tustin
OR-01617	Strudwick, Ivan H.	Extended Phase 1 Survey Report for the Proposed Laguna Canyon Road (SR-133) Improvement Project in Orange County, California	1997	Laguna Beach
OR-01619	Strudwick, Ivan H.	Historic Study Report for the Proposed Laguna Canyon Road (SR-133) Improvement Project in Orange County, California	1997	Laguna Beach, Tustin



Report No.	Authors	Title	Year	Quad
OR-01620	Strudwick, Ivan H.	Historic Property Survey Report for the Proposed Laguna Canyon Road (SR-133) Improvement Project in Orange County, California	1997	Laguna Beach, Tustin
OR-01621	Strudwick, Ivan H.	Archaeological Survey Report for the Proposed Laguna Canyon Road (SR-133) Improvement Project in Orange County, California	1997	Laguna Beach, Tustin
OR-01623	Drover, Christopher E.	Cultural Resources Impact and Constraints Assessment Project Area PA-27 Irvine, California	1997	Laguna Beach, Tustin
OR-01624	Govena, Fran	Archaeological and Paleontological Monitoring Results for PM97-114 Western Digital Site, Irvine, Orange County, California	1997	El Toro, Tustin
OR-01625	Conkling, Steven W. and Joan M. Medina	Results of Archaeological and Paleontological Monitoring of the Northwood 5 Development (Tentative Tract 14540), Lots 4 and 5, Irvine, California	1997	Tustin
OR-01627	Padon, Beth	Archaeological and Paleontological Monitoring for Irvine Entertainment Center, Irvine, California	1995	El Toro
OR-01628	Unknown	Cultural Resources Assessment- Warner Avenue Bridge Over Peters Canyon Channel, Tustin, Orange County, California	1994	Tustin
OR-01646	Bonner, Wayne H., Stephen J. Bouscaren, Larry Carbone, Robert O. Gibson, Lisa Klug, Roger D. Mason, Mark L. Peterson, and Virginia Popper	San Joaquin Hills Transportation Corridor: Results of Data Recovery at CA-ORA-689, CA-ORA-736, and CA-ORA-1029	1997	Laguna Beach
OR-01651	Mason, Roger D., Wayne H. Bonner, Stephen J. Bouscaren, Larry Carbone, Robert O. Gibson, Lisa Klug, Mark L. Peterson, and Virginia Popper	San Joaquin Transportation Corridor Results of Data Recovery at CA-ORA-206	1997	Tustin
OR-01662	McLean, Deborah K.	Archaeological Assessment for Pacific Bell Mobile Services Telecommunications Facility CM 002-29, 14451 Myford Road, City of Tustin, Orange County, CA.	1998	Tustin
OR-01663	McLean, Deborah K.	Cultural Resources Survey Report for Pacific Bell Mobile Services Telecommunications Facility, CM 334-32, in the City of Irvine, Orange County, CA.	1997	Tustin

Report No.	Authors	Title	Year	Quad
OR-01664	McLean, Deborah K.	Cultural Resources Survey Report for Pacific Bell Mobile Services Telecommunications Facility, Cm 007-38, in the City of Irvine, Orange County, CA.	1997	Tustin
OR-01668	Langston, Snyder	Archaeological and Paleontological Monitoring Results for the Candlewood-Irvine, Parcel 5 Project, City of Irvine, Orange County, CA.	1998	Tustin
OR-01686	Cottrell, Marie G.	A Walk Over Survey of Tentative Tract 9372 for the E.S.R. Corporation of Newport Beach	1976	Tustin
OR-01690	Padon, Beth	Archaeological Monitoring Report, University Research Park, Phase Iii, Irvine, California	1998	Tustin
OR-01692	Jertberg, Patricia R.	Archaeological Monitoring of Preliminary Grading for Irvine Spectrum 6, Area a Phase I, Irvine, California	1998	Tustin
OR-01693	Jertberg, Patricia R.	Archaeological Monitoring of Preliminary Grading and Trenching for Offsite Street, University Research Park, Phase III, Tentative Parcel Map No. 94-160	1998	Tustin
OR-01707	Padon, Beth	Archaeological Monitoring of Preliminary Grading for Irvine Technology Center, Phase 1, Lots 5-21, Tentative Tract 15522, Irvine, California	1998	Tustin
OR-01708	Hurd, Gary S. and Macko, Michael E.	Test Program Results, Significance Evaluations, and Recommendations for Mitigation of Impacts at CA-ORA-115a, -115b, -116, & -121b, University of California, Irvine, North Campus	1989	Tustin
OR-01711	Bissell, Ronald M.	Project Area 27 in Irvine, Orange County, California	1998	Laguna Beach, Tustin
OR-01714	Drover, Christopher E.	(Duplicate of OR-2065) A Cultural Resources Inventory for an 800 Acre Conceptual Lotting Plan in Planning Area 27, Irvine, California	1998	Laguna Beach, Tustin
OR-01717	Mason, Roger D. and Brechbiel, Brant A.	San Joaquin Hills Transportation Corridor Results of Construction Monitoring for Archaeological Resources Mitigation Monitoring Measures 11-1	1997	Laguna Beach, San Juan Capistrano, Tustin
OR-01731	Unknown	Index to the Artifacts Collected During the Second Part of the WPA Project	1961	Laguna Beach, Tustin
OR-01734	Unknown	Preliminary Draft: Environmental Impact Report for the San Joaquin Reservoir Improvement Program	1989	Laguna Beach, Orange, Tustin
OR-01754	Brechbiel, Brant A.	Cultural Resources Records Search and Literature Review Report for a Pacific Bell Mobile Services Telecommunications Facility: CM 237-91 in the City of Irvine, California	1998	El Toro

Report No.	Authors	Title	Year	Quad
OR-01759	Demcak, Carol R.	Report of Archaeological Assessment for Proposed Orchard Estates Retarding Basin, Orange County, California	1997	El Toro
OR-01784	Brechbiel, Brant A.	Cultural Resources Records Search and Literature Review Report for a Pacific Bell Mobile Services Telecommunications Facility: CM 092-26 in the City of Irvine, California	1998	Tustin
OR-01785	Brechbiel, Brant A.	Cultural Resources Records Search and Literature Review Report for a Pacific Bell Mobile Services Telecommunications Facility: CM 005-15 in the City of Irvine, California	1998	Tustin
OR-01786	Brechbiel, Brant A.	Cultural Resources Records Search and Literature Review Report for a Pacific Bell Mobile Services Telecommunications Facility: CM 052-12 in the City of Irvine, California	1998	Tustin
OR-01787	Brechbiel, Brant A.	Cultural Resources Records Search and Literature Review Report for a Pacific Bell Mobile Services Telecommunications Facility: CM 247-12 in the City of Irvine, California	1998	Tustin
OR-01788	Brechbiel, Brant A.	Cultural Resources Records Search and Literature Review Report for a Pacific Bell Mobile Services Telecommunications Facility: CM 202-03 in the City of Irvine, California	1998	Tustin
OR-01812	Brechbiel, Brant A.	Cultural Resources Records Search and Literature Review Report for a Pacific Bell Mobile Services Telecommunications Facility: CM 305-03 in the City of Irvine, California	1998	Tustin
OR-01814	Padon, Beth	Archaeological Monitoring Report for One Park Place, Orange County	1994	Tustin
OR-01815	McKenna, Jeanette A.	Historic Property Survey Report: Negative Findings Alton Avenue/State Route 55 Improvements, Cities of Santa Ana and Irvine, Orange County, California	1995	Tustin
OR-01828	Chace, Paul G.	A Cultural/scientific Resources Survey for the Irvine Planning Area 26, Bonita Canyon- Coyote Canyon, Zone Change 18903-ZC, in the City of Irvine, Orange County, California	1995	Laguna Beach, Tustin
OR-01832	Brechbiel, Brant A.	Cultural Resources Survey Report for a Pacific Bell Mobile Services Telecommunications Facility: CM 237-09 in the City of Irvine, California	1997	El Toro
OR-01839	Padon, Beth	Assessment of Prehistoric Resources Aqua Chinon Retarding Basin, Orange County, California	1995	El Toro

Report No.	Authors	Title	Year	Quad
OR-01841	Cottrell, Marie G. and Murray, John	Archaeological Resources Assessment Completed for the Marine Corps Air Station, El Toro, California	1987	El Toro
OR-01844	Webb, Lois M.	Request for Finding of Effect for the Proposed Eastern Transportation Corridor	1991	Black Star Canyon, El Toro, Orange, Tustin
OR-01881	Padon, Beth	Historic Property Survey Report Proposed Yale Avenue/I-5 Overcrossing Irvine, California	1983	Tustin
OR-01883	Getchell, Barbie Stevenson and John E. Atwood	Cultural Resources Survey of a 46 Acre Portion of the San Joaquin Freshwater Marsh Reserve, Irvine, Orange County, California	1998	Tustin
OR-01902		Historic Property Survey 07ORA-133	1985	Tustin
OR-01909	Padon, Beth	Paleontological Monitoring for EH & S Building on University of California, Irvine Campus	1998	Tustin
OR-01916	Strudwick, Ivan H.	Results of Archaeological Testing at Site CA-ORA-121, Locus C, Near Upper Newport Bay Orange County, California	1998	Tustin
OR-01917	Strudwick, Ivan H.	Results of Archaeological Testing of a Portion of CA-ORA-1238/H Within the Portola Parkway Extension Project, Orange County, California	1999	Tustin
OR-01920	Grenda, Donn R., Christopher J. Doolittle, and Jeffrey H. Altschul	House Pits and Middens	1998	Tustin
OR-01937	Anonymous	Historic Property Survey Laguna Canyon Road Orange County, California	1985	Laguna Beach, Tustin
OR-01939	Padon, Beth	Archaeological and Paleontological Monitoring of Preliminary Grading for Market Place III Retail Center, Irvine, California	1999	Tustin
OR-01941	Padon, Beth	Archaeological and Paleontological Monitoring of Preliminary Grading for Jack-in-the-box Restaurant 3278, Permit No.34126 CCG, Irvine, California	1999	Tustin
OR-01942	Padon, Beth	Archaeological Resource Archival Review and Monitoring for the Lake Shore Towers Project	1999	Tustin
OR-01943	Duke, Curt and McLean, Deborah K.B.	Results of Archaeological Monitoring for the San Joaquin Marsh Enhancement Plan Project, City of Irvine, Orange County, California	1998	Tustin
OR-01944	Unknown	Draft Environmental Impact Report East Irvine Historical Site, Irvine, California	1984	Tustin
OR-01945	Padon, Beth	Archaeological Testing Report for CA-ORA-1041, University Research Park, Phase 10, Irvine, California	1999	Tustin

Report No.	Authors	Title	Year	Quad
OR-01963	Padon, Beth	Archaeological and Paleontological Monitoring of Preliminary Grading for Irvine Technology Center, Phase 2, Lots 15-26, Tentative Tract 15522, Irvine, California	1999	Tustin
OR-01973	Duke, Curt	Cultural Resource Assessment for Pacific Bell Mobile Services Facility CM 485-01, in the County of Orange, California	1999	Tustin
OR-01986	Duke, Curt	Cultural Resource Assessment for Pacific Bell Mobile Services Facility CM 485-02, County of Orange, California	1999	Tustin
OR-01998	Jertberg, Patricia R.	Historic Property Survey for Irvine Boulevard in the County of Orange	1981	El Toro, Tustin
OR-02004	Anonymous	Environmental Analysis of Hazardous Waste Disposal and Underground Tanks Cultural Resources Real Estate Exchange Between Marine Corps Air Station (MCAS), Tustin and Orange County, California	1991	Tustin
OR-02013	Wlodarski, Robert J.	Negative Archaeological Survey Report on the Construction of a Transitway in the Median of Interstate 405	1990	Tustin
OR-02022	Mason, Roger D.	Test Plan for National Register Evaluation of Archaeological Sites on the Coyote Canyon Sanitary Landfill Property, Orange County, California	1987	Laguna Beach, Tustin
OR-02023	Drover, Christopher E.	A Cultural Resources Inventory for Harvard Square Irvine, California	1999	Tustin
OR-02027	Drover, Christopher E.	A Cultural Resources Inventory of Planning Area 17, Irvine, California	1998	Tustin
OR-02058	Padon, Beth	Paleontological and Archaeological Monitoring for University Research Park, Phase 10, Parcel a and Bison Avenue Landscape Area	2000	Tustin
OR-02059	Duke, Curt	Cultural Resource Assessment for Pacific Bell Mobile Services Facility CM 383-01, County of Orange, California	1999	Tustin
OR-02061	Lapin, Philippe	Cultural Resource Assessment for Pacific Bell Wireless Facility CM 441-01, County of Orange, California	2000	Tustin
OR-02062	Duke, Curt	Cultural Resource Assessment for Pacific Bell Mobile Services Facility CM 152-09, in the City of Irvine County of Orange, California	2000	Tustin
OR-02063	Padon, Beth	Paleontological and Archaeological Monitoring for California Avenue Sewer Line, Bison Avenue Water Line, and I-25/University Slope Repair Projects, University Research Park, Phase III and IV	1999	Tustin

Report No.	Authors	Title	Year	Quad
OR-02064	Lapin, Philippe	Cultural Resource Assessment for Modifications to Pacific Bell Mobile Services Facility CM 052-12, County of Orange, California	2000	Tustin
OR-02065	Drover, Christopher E.	A Cultural Resources Inventory for an 800 Acre Conceptual Lotting Plan in Planning Area 27, Irvine, California	1998	Laguna Beach, Tustin
OR-02106	Huey, Gene	Supplemental Historic Property Survey Report for Siphon Ridge Revegetation Area, Orange County	1994	El Toro
OR-02108	Unknown	Historic Property Survey Report for the Proposed Eastern Transportation Corridor, Orange County	1991	Black Star Canyon, El Toro, Orange, Tustin
OR-02109	Duke, Curt	Updated Cultural Resource Assessment for Pacific Bell Wireless Facility CM 237-09, County of Orange	2000	El Toro
OR-02145	Duke, Curt	Cultural Resource Assessment for Pacific Bell Mobile Services Facility CM 494-03, County of Orange	2000	Orange
OR-02171	Getchell, Barbie	Archaeological Monitoring of the San Joaquin Reserve Enhancement Project in Irvine, Orange County	1999	Tustin
OR-02172	Duke, Curt	Cultural Resource Assessment for Pacific Bell Wireless Facility CM 338-02, County of Orange	2000	Tustin
OR-02173	Lapin, Philippe	Cultural Resource Assessment for Pacific Bell Wireless Facility CM 514-02, County of Orange	2000	Tustin
OR-02174	Duke, Curt	Cultural Resource Assessment for Pacific Bell Wireless Facility CM 338-01, County of Orange	2000	Tustin
OR-02175	Duke, Curt	Cultural Resource Assessment for At&t Wireless Services Facility Number C940.1, County of Orange	2000	Tustin
OR-02176	Lapin, Philippe	Cultural Resource Assessment for Pacific Bell Wireless Facility CM 416-01, County of Orange	2000	Tustin
OR-02184	Lapin, Philippe	Cultural Resource Assessment for Pacific Bell Wireless Facility CM 030-02, County of Orange	2000	El Toro, Tustin
OR-02225	Strozier, Hardy	The Irvine Company Planning Process and California Archaeology- A Review and Critique	1978	Black Star Canyon, El Toro, Laguna Beach, Orange, San Juan Capistrano, Tustin
OR-02235	Duke, Curt	Revised Cultural Resource Assessment for At&t Wireless Services Facility Number C940.1, County of Orange, CA	2000	Tustin
OR-02236	Duke, Curt	Cultural Resource Assessment for AT&T Fixed Wireless Services Facility Number OC_240_A, County of Orange, CA	2001	Tustin

Report No.	Authors	Title	Year	Quad
OR-02240	Duke, Curt	Cultural Resource Assessment Cingular Wireless Facility No. SC 013-01 Orange County, California	2001	Tustin
OR-02241	Duke, Curt	Cultural Resource Assessment for Modifications to Cingular Wireless Facility Sc 016-01, County of Orange, CA	2001	Tustin
OR-02242	Duke, Curt	Cultural Resource Assessment for At&t Wireless Services Facility Number C956.1, County of Orange, CA	2000	Tustin
OR-02243	Cottrell, Marie, G.	A Proposal for the Archaeological Investigation of CA-ORA-350 and CA-ORA-379	1977	Tustin
OR-02244	Brown, Joan C.	Negative Archaeological Survey Report-DFD-EP-25 (rev.2/83)	2000	Tustin
OR-02247	Alcock, Gwyn	Cultural Resources Investigation for the Nextlink Fiberoptic Project, Los Angeles and Orange Counties, California (first Addendum); Nextlink Project Number: 17033-2	2000	Venice
OR-02249	Schilz, Allan J.	Archaeological Survey Conducted for Village 10 City of Irvine	1978	Tustin
OR-02250	Padon, Beth	Archaeological and Paleontological Monitoring of Preliminary Grading for Ei Camino Real, Mini Storage, Lot 1, Tract 15661 Irvine, California	2000	Tustin
OR-02251	Padon, Beth	Archaeological and Paleontological Monitoring Scope of Work for Planning Area 10, Parcel 8, 9 and 10 Project	2000	Tustin
OR-02252	Robbins, Susan	Michelson Water Reclamation Plant Riparian Way and Duck Club Road Improvements	2000	Tustin
OR-02256	Demcak, Carol R.	Cultural Resources Assessments for Orange County Sanitation Districts	1999	Orange, Tustin
OR-02261	Brown, Joan C.	Historic Property Survey Report for I-405/Jeffery Road Trail Overcrossing Project	2000	Tustin
OR-02267	Hunt, Kevin P.	An Archaeological and Paleontological Survey of the Irvine Spectrum GPA Project	2000	El Toro, Tustin
OR-02282	Lapin, Philippe and Strudwick, Ivan	Results of Archaeological Monitoring at Sheridan Place Project, Tracts 15711 and 15712, City of Irvine, Orange County, CA	2000	Orange, Tustin
OR-02301	Avina, Mike	Monitoring Report for XO California Builds-1920 Maple Ave, El Segundo, California, and 4000 MacArthur Blvd., Newport Beach, California	2001	Tustin, Venice
OR-02330	Duke, Curt	Cultural Resource Assessment Cingular Wireless Facility No. SC 009-02 Orange County, California	2001	El Toro

Report No.	Authors	Title	Year	Quad
OR-02332	Duke, Curt	Cultural Resource Assessment for Modifications to Cingular Wireless Facility CM 440-03, County of Orange, California	2001	El Toro
OR-02336	Demcak, Carol R.	Final Report on Archaeological and Paleontological Monitoring Program Conducted at Spectrum 5, Irvine, Orange County, California	2000	El Toro
OR-02337	Demcak, Carol and Milos Velechovsky	Final Report on Archaeological and Paleontological Monitoring Program Conducted at Spectrum 6, City of Irvine, Orange County, California	2000	El Toro
OR-02338	Demcak, Carol R. and Milos Velechovsky	Final Report on Archaeological and Paleontological Monitoring Program Conducted at the University Hills Project Site and University House, University of California, Irvine	2001	Tustin
OR-02341	McKenna, Jeanette A.	A Phase I Cultural Resources Investigation for the Lakeside Construction Property on Dow Avenue, Tustin, Orange County, California	2000	Tustin
OR-02342	Bissell, Ronald M.	Peer Review of "A Phase I Cultural Resources Inventory for Planning Area 9, Irvine, California," Dated 12 April 2001.	2001	Tustin
OR-02343	Bissell, Ronald M.	Peer Review of " a Phase I Cultural Resources Inventory for Planning Area 6, Irvine California"	2001	Tustin
OR-02345	Bissell, Ronald M.	Peer Review of a Phase I Cultural Resources Inventory for Planning Area 8A, Irvine California	2001	Tustin
OR-02347	Duke, Curt	Cultural Resource Assessment Cingular Wireless Facility No. SC 005-01 Orange County, California	2001	Tustin
OR-02349	Cottrell, Marie G.	Archaeological Survey of Irvine Ranch Water District Pipeline Route EA No. 176009, Warner Avenue Water Main	1977	Tustin
OR-02350	Crabtree, Robert H.	Conclusion of Archaeological Investigations on a Portion of 105 Acres Located East of Jamboree Road, South of San Diego Freeway	1974	Tustin
OR-02351	Mabry, Theo	Test Level Investigation Conducted at CA-ORA-228, Turtle Rock, Irvine, California	1978	Tustin
OR-02352	Unknown	Records Search and Reconnaissance Harvard Avenue Extension City of Irvine, California	1979	Tustin
OR-02445	Duke, Curt	Cultural Resource Assessment AT&T Wireless Services Facility No.13353A Orange County, California	2002	Tustin
OR-02447	Duke, Curt	Cultural Resource Assessment AT&T Wireless Services Facility No. 13103B Orange County, California	2002	Tustin



Report No.	Authors	Title	Year	Quad
OR-02448	Strudwick, Ivan H.	Results of Archaeological Testing at Site CA-ORA-121, Locus C, Near Upper Newport Bay Orange County, California	1999	Tustin
OR-02462	Duke, Curt	Cultural Resource Assessment AT&T Wireless Services Facility No. C939.4 Orange County, California	2002	Tustin
OR-02464	Duke, Curt	Cultural Resource Assessment Cingular Wireless Facility No. SC 065-02 Orange County, California	2002	Tustin
OR-02465	Duke, Curt	Cultural Resource Assessment Cingular Wireless Facility No. SC 051-03 Orange County, California	2002	Tustin
OR-02468	Duke, Curt	Cultural Resource Assessment AT&T Wireless Services Facility No. 13086A Orange County, California	2002	Tustin
OR-02469	Duke, Curt	Cultural Resource Assessment AT&T Wireless Services Facility No. 13099a Orange County, California	2002	Tustin
OR-02470	Duke, Curt	Cultural Resource Assessment Cingular Wireless Facility No. SC 036-02 Orange County, California	2002	Tustin
OR-02471	Duke, Curt	Cultural Resource Assessment Cingular Wireless Facility No. CM 299-05 Orange County, California	2001	Tustin
OR-02474	Duke, Curt	Cultural Resource Assessment Cingular Wireless Facility No. SC 024-03 Orange County, California	2001	Tustin
OR-02477	Duke, Curt	Cultural Resource Assessment Cingular Wireless Facility No. SC 047-01 Orange County, California	2001	Tustin
OR-02478	Duke, Curt	Cultural Resource Assessment Cingular Wireless Facility No. SC 062-01 Orange County, California	2001	Tustin
OR-02480	Crownover, Scott, Beth Padon, and Jane Rosenthal	Archaeological Investigations at CA-ORA-121 Orange County, California	1990	Tustin
OR-02484	Velechovsky, Milos and Carol R. Demcak	Final Report on Archaeological and Paleontological Monitoring Program Conducted at Spectrum 6, Marshburn Wash, City of Irvine, Orange County, California	2001	Tustin
OR-02485	Chakurian, Anthony	Site Id Number C940_jamboree/Alton, Proposed AT&T Wireless Telecommunications Equipment Installation 17052 Jamboree Road, Irvine, California 92614	2001	Tustin
OR-02487	Archer, Gavin H.	Cultural Resource Inventory Quail Hill (PA17) Irvine Ranch Water District Facilities Reservoir Zone 3 and Reservoir Zone 4 City of Irvine, County of Orange, California	2002	Tustin

Report No.	Authors	Title	Year	Quad
OR-02488	Bonner, Wayne H.	Records Search Results for Sprint Pcs Facility OG54XC451D, Located at 5595 1/2 Walnut Street, Irvine in Orange County, California	2001	Tustin
OR-02489	Padon, Beth	Archaeological and Paleontological Surveying and Monitoring of the Mini-U-storage Warner-Jamboree Project	2002	Tustin
OR-02490	Love, Bruce	The Proposed Undertaking Consists of Landscaping in a Portion of the Existing Median of Portola Parkway Near the Intersection of SR 261, in the City of Irvine, Orange County	2002	Tustin
OR-02491	McKenna, Jeanette A.	Review of Cultural Resource Assessment/evaluation for Cingular Wireless Site CM-152-01 Orange County, California	2001	Tustin
OR-02492	Bolin, David P.	Proposed AT&T Wireless Telecommunications Equipment Installation 2525 Dupont Drive, Irvine, California 92612	2001	Tustin
OR-02493	Billat, Lorna	Nextel Communications Wireless Telecommunications Service Facility-Orange County	2000	Tustin
OR-02494	Thane, Michael D.	Proposed Sheraton Rooftop Site 4701 Von Karman Avenue Newport Beach, Orange County, California	2001	Tustin
OR-02496	Unknown	Archaeological Salvage Program at Locus B and the Peripheral Sector of Locus A, ORA-121 (287) Irvine, California	1979	Tustin
OR-02497	Brown, Joan C.	The Proposed Jeffrey Road/OTCA Metrolink Railway Grade Separation: 1/2 Mile South of Walnut Ave. Within the City of Irvine, County of Orange, California	2001	Tustin
OR-02499	Love, Bruce	The Proposed Undertaking Involves the Construction of a Drainage Swale Along the Southeast Shoulder of State Route 261, Near the Intersection of SR 261 and Portola Parkway, in the City of Irvine, California	2001	Tustin
OR-02518	Bissell, Ronald M.	Peer Review of "A Phase I Cultural Resources Inventory for Planning Area 5b, Irvine, California", Dated 20 March 2001. Author, Christopher Drover, Ph.D. Prepared by The Keith Companies, Incorporated for the Irvine Community Development Company	2001	El Toro, Tustin
OR-02523	N/A	DUPLICATE OF OR2699: Cultural Resource Assessment for Modifications to Cingular Wireless Facility CM 437-01, County of Orange, California		N/A

Report No.	Authors	Title	Year	Quad
OR-02532	Duke, Curt	Cultural Resource Assessment AT&T Wireless Facility No. 13104A, Orange County, California	2002	El Toro
OR-02533	Webb, Lois M. and Gene Huey	07-ORA-405 PM7.4 Overcrossing, Historic Property Survey, 07210-249011	1977	Tustin
OR-02534	N/A	Annual Report to The Irvine Company from Archaeological Research, Inc.	1976	Black Star Canyon, El Toro, Laguna Beach, Orange, San Juan Capistrano, Tustin
OR-02596	Demcak, Carol R.	Archaeological Investigations at CA-ORA-554, San Joaquin Hills, Orange County, California	1989	Tustin
OR-02597	Duke, Curt	Cultural Resource Assessment Cingular Wireless Facility No. SC 113-02 Orange County, California	2002	Tustin
OR-02598	Duke, Curt	Cultural Resource Assessment Cingular Wireless Facility No. CM 498-02	2002	Tustin
OR-02599	Cottrell, Marie G.	Report of Grading Activities, CA-ORA-111	1976	Tustin
OR-02600	Cottrell, Marie G.	Archaeological Research, Inc. Quarterly Report	1975	El Toro, Laguna Beach, Tustin
OR-02601	Cottrell, Marie G.	Archaeological Testing Proposal of Site ORA-575, City of Irvine	1975	Tustin
OR-02610	York, Andrew L.	Testing Plan Archaeological Site Evaluation and National Register Eligibility Evaluation at Site CA-ORA-1462 MCAS El Toro, Orange County, California	1998	El Toro
OR-02611	Underwood, Jackson and York, Andrew	Archaeological Testing and Evaluation at Site CA-ORA-1462 MCAS, El Toro, Orange County, California	1999	El Toro
OR-02626	Younger, Shannon and Smith, Brooks	Results of Archaeological Construction Monitoring Planning Area 27 Needlegrass Creek Conservation Area, Irvine, California	2003	El Toro, San Juan Capistrano
OR-02627	Archer, Gavin H.	Archaeological Data Recovery at CA-ORA-495 a Prehistoric Site in the Northern San Joaquin Hills City of Irvine, County of Orange, California	2003	Tustin
OR-02628	Mason, Roger D.	Cultural Resources Records Search and Field Survey Report for a Verizon Telecommunications Facility: Meadowood in the City of Irvine, Orange County, California	2001	Tustin
OR-02635	Strudwick, Ivan H.	Supplemental Historic Property Survey Report for the Laguna Canyon Road (SR-133) Improvement Project in Orange County, California	2002	Laguna Beach, Tustin
OR-02636	Brown, Joan C.	A Cultural Resources Literature Study and Field Reconnaissance for the Natural Treatment System Master Plan Facilities, Orange County, California	2003	El Toro, Orange, Tustin

Report No.	Authors	Title	Year	Quad
OR-02637	Drover, Christopher E.	A Phase II Test Evaluation of Twenty Archaeological Sites in Shady Canyon, Irvine, California	1999	Laguna Beach, Tustin
OR-02638	Younger, Shannon and Smith, Brooks	Results of Archaeological and Paleontological Monitoring Turtle Ridge (Planning Area 27) Habitat Mitigation Project Bommer Canyon, City of Irvine Orange County, California	2003	Laguna Beach, Tustin
OR-02639	Drover, Christopher E.	A Cultural Resources Inventory in Planning Area 18 Irvine, California	1999	El Toro, Laguna Beach, San Juan Capistrano, Tustin
OR-02649	Allen, Rebecca	Archeological Survey Report Marine Corps Air Station, El Toro	1997	El Toro
OR-02651	Felix, William	Section 106 Review of a Mountain Union Telecom Telecommunications Project 592-1E049 Planned at 13826 Sand Canyon, Irvine, California	2001	El Toro
OR-02654	Duke, Curt	Cultural Resource Assessment for Pacific Bell Mobile Services Facility CM 440-01, County of Orange, California	2000	El Toro
OR-02657	Duke, Curt	Cultural Resource Assessment AT&T Wireless Services Facility No. 13103A Orange County, California	2000	Tustin
OR-02661	Duke, Curt	Cultural Resource Assessment AT&T Wireless Services Facility No. D396.2 Orange County, California	2002	El Toro
OR-02666	Duke, Curt	Cultural Resource Assessment Cingular Wireless Facility No. SC 009-01 Orange County, California	2001	El Toro
OR-02668	Wallock, Nicole	Cultural Resource Assessment Cingular Wireless Facility No. SC 044-01 Orange County, California	2001	El Toro
OR-02669	Duke, Curt	Cultural Resources Assessment Cingular Wireless, Facility No. SC 053-01 Orange County, California	2001	El Toro
OR-02670	Duke, Curt	Cultural Resource Assessment Cingular Wireless Facility No. SC 119-04 Orange County, California	2002	El Toro
OR-02671	Duke, Curt	Cultural Resource Assessment Cingular Wireless Facility No. SC 136-01 Orange County, California	2002	Tustin
OR-02672	Duke, Curt	Revised Cultural Resource Assessment Cingular Wireless Facility No. CM 005-15 Orange County, California	2002	Tustin
OR-02673	Brechbiel, Brant A.	Cultural Resources Records Search and Survey Report for a Pacific Bell Mobile Services Telecommunications Facility: CM 005-15 in the City of Irvine, California	1998	Tustin
OR-02674	Duke, Curt	Cultural Resource Assessment for AT&T Fixed Wireless Services Facility Number OC_240_A, County of Orange, California	2001	Tustin

<b>Report No.</b>	<b>Authors</b>	<b>Title</b>	<b>Year</b>	<b>Quad</b>
OR-02679	Bonner, Wayne H.	Cultural Resource Assessment for SC-090-02, Shepard of Peace Lutheran Church 18182 Culver Drive Irvine, CA. 92612	2002	Tustin
OR-02680	Padon, Beth and Stewart, J.E.	Archaeological and Paleontological Resources Monitoring Report for the Anteater Recreation Center Playing Fields, University of California, Irvine	2002	Tustin
OR-02681	Duke, Curt	Cultural Resource Assessment AT&T Wireless Services Facility No. 13085A Orange County, California	2002	Tustin
OR-02699	Duke, Curt	Cultural Resource Assessment for Modifications to Cingular Wireless Facility Cm 437-01, County of Orange, California	2001	El Toro
OR-02845	Drover, Christopher E.	A Phase I Cultural Resources Inventory for Planning Area 9 Irvine, California	2001	El Toro, Tustin
OR-02879	Tang, Bai "Tom" and Michael Hogan	Archaeological Survey Report Rockfield Boulevard/Oldfield Signalization Project City of Irvine, Orange County 12-ORA-0-irv (Rockfield)	2003	El Toro
OR-02882	Dice, Michael and Christeen Taniguchi	Final Phase 2 Archaeological Testing Evaluation of Irvine Ranch Cultural Resources: Santiago Hill II Planned Community (SHIIPC)-Tract Maps Nos. 16199 and 16201 and the East Orange Planned Community (EOPC) Area I-Tract Map No. 16514	2004	Black Star Canyon, Orange
OR-02928	Demcak, Carol R.	Final Report of Salvage Level Investigations at ORA-758, Alton Parkway Extension Project, County of Orange, California	1994	El Toro
OR-02934	Bonner, Wayne H.	Cultural Resource Records Search Results and Site Visit for AT&T Site Candidate 950-013-523E (Mason) 3 Mason, Irvine, Orange County, California	2005	El Toro
OR-02936	Archer, Gavin H.	Archaeological and Paleontological Monitoring Planning Area 6, Phase 1 Residential 12KV and Telephone Underground Improvements Portola Parkway (SR-133 to STA 151+00) Proposed Assessment District 04-20 and Tentative Tract 16562	2005	El Toro
OR-02938	Drover, Christopher E., Koerper, Henry C., and Lambert, Craig	A Cultural Resources Inventory for Planning Area 6, Irvine, California With Appendices	2001	El Toro
OR-02939	Kyle, Carolyn E.	Cultural Resource Assessment for a Cellular Tower Site Located at the Irvine Transportation Center City of Irvine, Orange County, California	2002	El Toro

Report No.	Authors	Title	Year	Quad
OR-02940	Kyle, Carolyn E.	Cultural Resource Assessment for a Cellular Tower Site Located at 4883 Portola Parkway City of Irvine Orange County, California	2002	El Toro
OR-02943	Kyle, Carolyn E.	Cultural Resource Assessment for AT&T Wireless Facility 950-013-523D 10 Thomas Avenue City of Irvine, Orange County, California	2004	El Toro
OR-02944	Kyle, Carolyn E.	Cultural Resource Assessment for AT&T Wireless Facility 950-013-106B 7601 Irvine Boulevard City of Irvine Orange County, California	2004	El Toro
OR-02946	Smith, Brooks R.	Results of Archaeological Resource Mitigation Monitoring Fire Station 55, Irvine Orange County, California	2004	El Toro
OR-02947	Smith, David M. and Christopher E. Drover	A Phase II Test for Eligibility Lambert Reservoir Irvine, California	2001	El Toro
OR-02948	Harper, Caprice D.	Cultural Resource Assessment Cingular Wireless Facility No. SC 188-02 Irvine, Orange County, California	2003	El Toro
OR-02949	Harper, Caprice D.	Cultural Resource Assessment Cingular Wireless Facility No. SC 188-91 Irvine, Orange County, California	2003	El Toro
OR-02950	Harper, Caprice (Kip) D. and Duke, Curt	Cultural Resource Assessment Cingular Wireless Facility No. CM 307-01 County of Orange, California	2003	El Toro
OR-02961	Schmidt, James J.	Santiago-crown-morro 66 KV Transmission Line in the Shady Canyon Area, Orange County.	2004	Laguna Beach
OR-02969	Strudwick, Ivan H.	The Use of Fired Clay Daub From CA-ORA-269 in the Identification of Prehistoric Dwelling Construction Methods	2004	Laguna Beach
OR-02970	Strudwick, Ivan H.	Daub: the Archaeological Value of Fired Clay at CA-ORA-269 in the San Joaquin Hills of Coastal Southern California	2004	Laguna Beach
OR-02976	Smith, Brooks R.	Results of Archaeological and Paleontological Monitoring Upper Bommer Trail Emergency Access Road Improvements and Habitat Restoration Area Bommer Canyon, City of Irvine Orange County, California	2003	Laguna Beach
OR-03051	Bonner, Wayne H.	Cultural Resources Records Search and Site Visit Results for Cingular Wireless Candidate Oc-0144-01 (Look Out) 8504 1/2 Portola Parkway, Irvine, Orange County, California	2006	El Toro
OR-03053	Walker, James	AT&T Wireless Facility C533-El Toro, 7542 Irvine Blvd., Irvine	2002	El Toro

Report No.	Authors	Title	Year	Quad
OR-03054	Bonner, Wayne H.	Records Search Results for Sprint Pcs Facility Og54xc428a (the Research Center Site), Located At7601 Irvine Boulevard, Irvine in Orange County, California	2001	El Toro
OR-03056	Willey, Lorraine M.	Mcas El Toro Monitoring Wells Survey	2003	El Toro
OR-03057	Commendador-Dudgeon, Amy and Padon, Beth	Report on Phase 1 Archaeological Archival Review and Project Assessment for the Koll Center Ii Project in the City of Irvine	2006	El Toro
OR-03058	Grenda, Donn R., Ciolek-Torrello, Richard, Vargas, Benjamin R., and Gavin Archer	Archaeological Evaluation Plan Tomato Springs Site (CA-ORA-244) Planning Area 6, Irvine, California	2003	El Toro
OR-03060	Whitley, David S. and Joseph M. Simon	Documentation and Analysis of the Rock Art at CA-ORA-269, Irvine, Orange County, California	2004	Laguna Beach
OR-03176	Bonner, Wayne H.	Cultural Resources Records Search and Site Visit Results for Sprint Facility Candidate OG54xC582D (UCI-student Housing), 6530 California Avenue, Irvine, Orange County, California	2005	Tustin
OR-03177	Bonner, Wayne H.	Cultural Resource Records Search and Site Visit Results for Cingular Telecommunications Facility Candidate CM-514-01 (OC-034-01) Reynolds, 1562 Reynolds Avenue, Irvine, Orange County, California	2005	Tustin
OR-03178	Bonner, Wayne H.	Cultural Resources Records Search Results and Site Visit for Cingular Wireless Candidate OC-034-01 (Reynolds) 1562 Reynolds Avenue, Irvine, Orange County, California	2005	Tustin
OR-03180	Kyle, Carolyn E.	Cultural Resource Assessment for At&t Wireless Facility 950-013-092E 5380 1/2 University Drive City of Irvine Orange County, California	2004	Tustin
OR-03181	Kyle, Carolyn E.	Cultural Resource Assessment for Cingular Wireless Facility SC099-03 City of Irvine Orange County, California	2002	Tustin
OR-03182	Kyle, Carolyn E.	Cultural Resource Assessment for Cingular Wireless Facility SC083-03 City of Irvine Orange County, California	2002	Tustin
OR-03183	Kyle, Carolyn E.	Cultural Resource Assessment for Cingular Wireless Facility SC082-03 City of Irvine Orange County, California	2002	Tustin

<b>Report No.</b>	<b>Authors</b>	<b>Title</b>	<b>Year</b>	<b>Quad</b>
OR-03186	Bonner, Wayne H.	Records Search Results and Site Visit for Cingular Wireless Facility Candidate SC-470-01 (St. Pauls) 4949 Alton Parkway, Irvine, Orange County, California	2004	Tustin
OR-03190	Bonner, Wayne H.	Records Search Results for Cingular Wireless Site SC-117-01 (Turtle Rock Point Hoa), Ridgeline Drive/La Quinta, Irvine, Orange County, California	2002	Tustin
OR-03192	Bonner, Wayne H.	Records Search Results for Cingular Wireless Site SC-114-02 (Turtle Rock Glen Pool), 61 Sycamore Creek, Irvine, Orange County, California	2002	Tustin
OR-03194	Bonner, Wayne H.	Cultural Resource Records Search and Site Visit Results for Cingular Telecommunications Facility Candidate SC-024-01 (OC-041-01) Usa Gas Station, 4601 Campus Drive, Irvine, Orange County, California	2005	Tustin
OR-03195	Wlodarski, Robert J.	Records Search Results for the Proposed Mountain Union Telecom University Cell Site (PO/Ref# SFC 4002), Located at 5380 University Drive, City of Irvine, County of Orange, California	2004	Tustin
OR-03196	Padon, Beth	Archaeological and Paleontological Monitoring of Grading for the Trailer Pad and Proposed Stockpile, Permit No. 00359209RG, Irvine, California	2004	Tustin
OR-03197	Bonner, Wayne H.	Cultural Resource Survey and Revised Records Search Results for Sprint Telecommunications Facility Candidate OG60xc606a (Irvine Valley College Tower #M-1;T-2), Near Jeffrey Road and Irvine Center Drive, Irvine, Orange County, California	2003	Tustin
OR-03198	Bonner, Wayne H.	Cultural Resources Records Search Results and Site Visit for Cingular Wireless Candidate OC-0053-02 (Performance Equipment) 1902 McGaw, Avenue, Irvine, Orange County, California	2005	Tustin
OR-03199	Bonner, Wayne H.	Cultural Resources Records Search Results and Site Visit for Cingular Wireless Candidate Lsanca3055f (Concordia University) 1530 Concordia, Irvine, Orange County, California	2005	Tustin
OR-03200	Bonner, Wayne H.	Cultural Resources Records Search and Site Visit Results for Cingular Wireless Candidate Lsanca016 (construction Circle) 16291 Construction Circle. Irvine, Orange County, California	2006	Tustin



Report No.	Authors	Title	Year	Quad
OR-03202	Commendador-Dudgeon, Amy	Archaeological and Paleontological Monitoring at the Business, Education and Technology Center at Concordia University, in the City of Irvine	2006	Tustin
OR-03203	Bonner, Wayne H.	Cultural Resource Records Search and Site Visit Results for Cingular Telecommunications Facility Candidate Cm-092-01 (OC-005-01) Schiffman Enterprises, 17462 Von Karman Avenue Irvine, Orange County, California	2005	Tustin
OR-03204	Padon, Beth	Archaeological and Paleontological Monitoring at the Campus Center Multi-family Apartments Expansion, Building C, in the City of Irvine	2006	Tustin
OR-03205	Bonner, Wayne H.	Cultural Resources Records Search Results and Site Visit for T-mobile Candidate La02854 (AKI Nursery) 6900 Alton Parkway, Irvine, Orange County, California	2005	Tustin
OR-03207	Kyle, Carolyn E.	Cultural Resource Assessment for AT&T Wireless Facility 950-013-353B Located on Laguna Canyon Road, City of Irvine Orange County, California	2004	Tustin
OR-03229	Hatheway, Roger G.	A Cultural Resource Management (CRM) Report for the Irvine Valencia Growers Packing House Including a Phase II Evaluation and an Alternatives Analysis Outline and Mitigation Plan Outline	2002	Tustin
OR-03233	Scott, Kim and Brodie, Julie Scrivner	Cultural Resources Monitoring Report for the Moffett Meadows Project City of Irvine, California	2005	Tustin
OR-03235	Smallwood, Josh	Realignment and Widening of a Segment of Culver Drive Between Campuse Drive Amd Shady Canyon Drive (formerly Bonita Canyon Drive) in the Southwestern Portion of the City of Irvine, Orange County, California	2002	Tustin
OR-03236	Drover, Christopher E. and Smith, David M.	Archaeological Testing and Evaluation of CA-ORA-499 Planning Area 17, Irvine, California	2001	Tustin
OR-03237	Drover, Christopher E. and Smith, David M.	A Cultural Resources Inventory of Planning Area 17 Irvine, California	2000	Tustin
OR-03238	Drover, Christopher E.	Archaeological Research Design for Testing and Evaluation of CA-ORA-161, CA-ORA-1526, and CA-ORA-1527 Planning Area 17 Irvine, California	2001	Tustin
OR-03239	Drover, Christopher E., Smith, David M., Bell, Catherine G, and Lambert, Craig E.	Archaeological Test and Evaluation CA-ORA-161, CA-ORA-1526, and CA-ORA-1527, Planning Area 17, City of Irvine, Orange County, California	2001	Tustin

Report No.	Authors	Title	Year	Quad
OR-03242	Strudwick, Ivan H.	Results of Cultural Resource Shovel Test Pit Excavation for the Carlson Marsh Regrade Project (irwd Project No. 20173; Lsa Project No. Irw330)	2004	Tustin
OR-03243	Smith, Brooks R. and Shannon Younger	Results of Archaeological Monitoring Northpark, Sector 5 Lower Peters Canyon, Irvine Orange County, California	2000	Tustin
OR-03244	Kyle, Carolyn E.	Cultural Resource Assessment for AT&T Wireless Facility 950-013-522E Located in the City of Irvine Orange County, California	2004	Tustin
OR-03245	Shepard, Richard S.	Preliminary Cultural Resources Assessment for Campus-Cornell Signalization, City of Irvine, Orange County, Caltrans District 12	2004	Tustin
OR-03249	Strudwick, Ivan H.	Results of Archaeological Testing of a Portion of CA-ORA-1238/H within the Portola Parkway Extension Project, Orange County, California	1999	Tustin
OR-03251	Billat, Lorna	Moby, CA-8228a	2006	Tustin
OR-03252	Billat, Lorna	Harvard Park, CA-8263A	2006	Tustin
OR-03253	Brown, Joan C. and Maxon, Patrick	Cultural Resources Monitoring for the Proposed Multi-family Rental Project, University of California, Irvine, Orange County, California	2006	Tustin
OR-03254	Shepard, Richard S.	Cultural Constraints Assessment: Modifications to San Diego Creek Channel (F05), Irvine and Newport Beach, Orange County, California	2003	Tustin
OR-03255	Scott, Kim, Brodie, Julie Scrivner, Glenn, Brian, and Gust, Sherri	Cultural Resources Monitoring Report for the Marle Mountain Project, City of Irvine, California	2005	Tustin
OR-03257	Shepard, Richard S.	Section 106 Investigation for Interstate 5/Culver Drive Interchange Improvements, City of Irvine (District 12-Orange County-Interstate 5-post Mile 26.58-charge Unit 12-171-EA 965100)	2004	Tustin
OR-03258	Padon, Beth	Archaeological and Paleontological Monitoring for the Kia Motors Research and Development Center Project in the City of Irvine	2006	Tustin
OR-03259	Various	Final Report a Conservation Charrette at the Irvine Ranch Headquarters & Historic Park	2002	Tustin
OR-03261	Commendador-Dudgeon, Amy, Padon, Beth, and Stewart, J.D.	Archaeological and Paleontological Monitoring for the Plaza Irvine Development, Phase 1, City of Irvine, Orange County, California	2006	Tustin
OR-03262	Aron, Maria G. and Carmack, Shannon	Cultural Resources Assessment Report for the Proposed Sand Canyon Medical Center City of Irvine, Orange County, California	2006	Tustin

Report No.	Authors	Title	Year	Quad
OR-03263	Fulton, Terri	Cultural Resource Assessment Cingular Wireless Facility No. SC 136-01 Irvine, Orange County, California	2004	Tustin
OR-03264	Peterson, Patricia A. and Mason, Roger D.	Cultural Resources Monitoring Report for the Riparian View and Duck Club Road Improvements Project, San Joaquin March Area, Orange County, California	2002	Tustin
OR-03266	Drover, Christopher E.	Archaeological Testing and Evaluation of CA-ORA-904, CA-ORA-1011, CA-ORA-1069, CA-ORA-1525, and CA-ORA-1528, Planning Area 17, Irvine, California	2001	Tustin
OR-03275	Cerrero, Richard and Gallegos, Dennis R.	Cultural Resource Survey Report for the Irvine Ranch Water District, San Joaquin Reservoir Project Orange County, California	2000	Laguna Beach, Tustin
OR-03277	Casen, George A., Romani, John, and Webb, Lois	The Proposed Project is the Widening and General Improvement of Interstate Route 5 Between Route 405 and Route 55 in Orange County, California	1985	El Toro, Tustin
OR-03285	Fulton, Terri and Deborah McLean	Archaeological Mitigation Monitoring Report for the Irvine Desalter Pipelines Project	2006	El Toro, Tustin
OR-03289	Padon, Beth and Commendador-Dudgeon, Amy	Subject: Archaeological and Paleontological Monitoring at the Spectrum 1, Lot 111 Office Buildings and Parking Structure Project, in the City of Irvine	2006	El Toro, Tustin
OR-03290	Smith, Brooks R.	Cultural and Paleontological Resource Assessment Turtle Ridge (PA 27) Habitat Mitigation Project, Bommer Canyon, Orange County, California	2002	Laguna Beach, Tustin
OR-03291	Strudwick, Ivan H. and Carmack, Shannon	Cultural Resource Assessment the Lambert Ranch Project City of Irvine Orange County, California	2005	El Toro
OR-03293	Mason, Roger D.	Historic Property Survey Report for the Sand Canyon Grade Separation Project in the City of Irvine, Orange County, California	2003	Tustin
OR-03294	Drover, Christopher E., Smith, David M., Bonner, Wayne, and McCarthy, Daniel	Testing and Evaluation of CA-ORA-269 and CA-ORA-1485, Planning Area 27, Irvine, California	2001	Laguna Beach, Tustin
OR-03314	Cottrell, Marie G.	Results of Archaeological Survey on a 30-40 Acre Plot of Land at the Corner of Culver Drive and Hicks Canyon Wash, Orange County, California	1976	Tustin
OR-03331	Billat, Lorna	UC Davis Monopalm/LA-2794B, 7601 Irvine Boulevard, Irvine, Orange County, Ca 92618	2006	El Toro
OR-03347	Benner, Michael A.	Supplemental Environmental Impact Statement for the Eastern Transportation Corridor TCA EIS 2-1	1992	Black Star Canyon, El Toro, Orange, Tustin

Report No.	Authors	Title	Year	Quad
OR-03353	Schneeberger, Sandra L., Roeder, Mark, and Padon, Beth	Paleontological Resource Assessment Report of a ~3.5 Acre Site, Located at 18880 Douglas Drive, 92612 for the Carlyle Project, a Part of the Irvine Business Center (IBC) Development APN# 445-013-02	2006	Tustin
OR-03354	Schneeberger, Sandra L., Drover, Christopher, and Schulga, Corry	Phase I Archaeological Resource Survey of a ~3.5 Acre Site, Located at 18880 Douglas Drive, City of Irvine, County of Orange, California, 92612 for the Carlyle Project, a Part of the Irvine Business Center (IBC) Development APN# 445-013-02	2006	Tustin
OR-03355	Marvin, Judith	Historical Resources Evaluation Report for the Interstate 5/S and Canyon Avenue Interchange Improvement Project, City of Irvine, Orange County, California	2005	Tustin
OR-03357	Archer, Gavin H., Siren, Sarah A., Barnes, Lawrence G., and Crull, Scott	Historical, Archaeological and Paleontological Resources Identification and Evaluation for the Planning Area 39 Project Including Impacts Analysis and Mitigation Options	2005	El Toro, Tustin
OR-03358	Schmidt, Andrew and Shaver, Noelle	Historical Archaeological and Paleontological Resources Identification and Evaluation for the Planning Area 18 Project Including Impacts Analysis and Mitigation Measures	2005	El Toro, Laguna Beach, San Juan Capistrano, Tustin
OR-03364	Billat, Lorna	Honor Farm/7648A, 7601 Irvine Blvd, Irvine, CA, Orange County	2004	El Toro
OR-03369	Drover, Christopher E.	The Shady Canyon Archaeological Project, Irvine, Orange County, California	2004	Laguna Beach, Tustin
OR-03373	Arrington, Cindy and Nancy Sikes	Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project State of California: Volumes I and II	2006	El Toro, Orange, San Juan Capistrano, Tustin
OR-03380	Padon, Beth	Cultural Resource Assessment for Traveland Project, Irvine, Orange County	2007	Tustin
OR-03381	Padon, Beth	Archaeological and Paleontological Monitoring at the Kia Motors Phase 2 Design Center, Irvine, California	2007	Tustin
OR-03392	Strudwick, Ivan H.	Cultural Resource Survey of the Proposed Irvine Desalter Project, City of Irvine, Orange County, California	2004	El Toro, Tustin
OR-03434	Bonner, Wayne H. and Sarah A. Williams	Cultural Resource Records Search Results and Site Visit for Cingular, Sprint Nextel, T-Mobile and Verizon Telecommunications Facility Candidate Lambert Ranch 11905.5 Lambert Road, Irvine, Orange County, California	2006	El Toro

Report No.	Authors	Title	Year	Quad
OR-03475	Bonner, Wayne H.	Cultural Resource Records Search and Site Visit Results for T-Mobile Candidate LA-02247A (San Onofre-Santiago-M25T1), 18353 Laguna Canyon Road, Irvine, Orange County, California	2006	Tustin
OR-03476	Bonner, Wayne H.	Cultural Resource Records Search and Site Visit Results for Royal Street Communications, LLC Candidate LA2512A (Murphy & Corporate Park), 2802 Barranca Park Way, Irvine, Orange County, California	2007	Tustin
OR-03479	Coulter, David, David Knox, Katherine White, Carlos Martinez, Nicholas M. Magalousis, Thomas A. Wake, and James Sleeper	Archaeological Report # 3 Final: Irvine Family Ranch House, Located at the Irvine Ranch Headquarters Historic Park, County of Orange, California	2007	Tustin
OR-03483	Bonner, Wayne H.	Cultural Resources Records Search and Site Visit Results for T-Mobile Candidate LA-02878b (UC AG Research), 7681 Irvine Boulevard, Irvine, Orange County, California	2006	El Toro
OR-03484	Anonymous	New Tower ("NT") Submission Packet, FCC Form 620, the Groves at Jeffrey, LA-2865B	2007	Tustin
OR-03499	Brown, Joan C.	Cultural Resources Monitoring for the Irvine Plaza III Project, City of Irvine, Orange County, California	2007	Tustin
OR-03500	Demcak, Carol R. and Hugh M. Wagner	Report of Archaeological and Paleontological Monitoring of Tustin Legacy Project Area, Former Marine Corps Air Station, Tustin, California	2006	Tustin
OR-03502	Wood, Catherine M.	Archaeological Survey Report San Diego Creek (Facility F05) Upper Newport Bay to I-405 Freeway Programmatic Maintenance Project, Orange County, California	2007	Tustin
OR-03552	Susan Underbrink	Cultural Resources Monitoring for the Irvine Campus Housing Authority Planning Areas 9-3, 9-2, City of Irvine, Orange County, CA	2008	Tustin
OR-03554	Wayne H. Bonner	Cultural Resources Records Search and Site Visit Results for T-Mobile USA Candidate LA-02890C (San Leandro Park)	2008	Tustin
OR-03557	Wayne H. Bonner	Cultural Resources Records Search and Site Visit for Royal Street Communications, California LLC Candidate LA2516B- La Quinta	2008	Tustin
OR-03559	Lorna Billat	New Tower Submission Packet: Cartel Industries, LA2795C	2009	Tustin

Report No.	Authors	Title	Year	Quad
OR-03560	Joyce Tolbert	Report of Field Trips to Turtle Rock, Irvine, December 11 and 20, 1972	1972	Tustin
OR-03600	Garcia, Kyle H. and Marcy Rockman	Results of Archaeological Survey and Monitoring for Southern California Edison's Pole Replacements after Santiago Fire Along Santiago Canyon Road, Modjeska Canyon Road, and Hicks Canyon Road; Orange County, California; JO:6259-0468	2007	Black Star Canyon, El Toro
OR-03653	Bonner, Wayne H.	Cultural Resources Records Search and Site Visit Results for AT&T Wireless Candidate OC057-02 (Jamboree), 10200 Pioneer Road, Tustin, Orange County, California	2007	Orange
OR-03674	Bonner, Wayne H.	Cultural Resources Records Search and Site Visit Results for T-Mobile Candidate LA02927C (RSJ Golf Course), 1 San Joaquin, Irvine, Orange County, California	2007	Tustin
OR-03675	Bonner, Wayne H.	Cultural Resources Records Search and Site Visit Results for Royal Street Communications, LLC Candidate LA2520A (SCE Tower-Aki Nursery), 6900 Alton Parkway, Irvine, Orange County, California	2007	Tustin
OR-03677	Bonner, Wayne H.	Cultural Resources Records Search and Site Visit Results for Royal Street Communications, LLC Candidate LA2515B (Trabuco Crown), 4200 Trabuco Road, Irvine, Orange County, California	2007	Tustin
OR-03700	Fulton, Phil	Archaeological Study Report Verizon Wireless Services Breakwater Facility City of Irvine Orange County, California	2007	Tustin
OR-03702	Archer, Gavin H., David C. Hanna, and Mark R. Deering	Cultural Resources Field Assessment for the Lake Forest Drive and Bake Parkway Extensions Project in City of Irvine Planning Area 34	2007	El Toro
OR-03704	Brown, Joan C.	Cultural Resources Monitoring for the Irvine Plaza IV Project, City of Irvine, Orange County, California	2008	Tustin
OR-03705	Getchel, Barbie and John E. Atwood	Cultural Resources Inventory of the San Joaquin Freshwater March Reserve Phase II Enhancement Plan Project Area in the City of Irvine, Orange County, California	2007	El Toro
OR-03720	Bonner, Wayne H.	Cultural Resources Records Search and Site Visit Results for T-Mobile Candidate LA23636D (Trico Building), 1212 McGaw Avenue, Irvine, Orange County, California	2007	Tustin

Report No.	Authors	Title	Year	Quad
OR-03727	Padon, Beth	Archaeological and Paleontological Monitoring for the American Campus Communities Project, Phase II, University of California, Irvine	2007	Tustin
OR-03728	Strudwick, Ivan H.	Cultural Resource Record Search and Survey for a Caltrans Preliminary Environmental Assessment Report (PEAR) I-405/Irvine Center Drive Interchange Project, City of Irvine, Orange County, California	2008	El Toro, Tustin
OR-03731	Rosenthal, Jane	Archaeological and Paleontological Monitoring of Preliminary Grading and Trenching for the Lower Peters Canyon Retail Site, Tentative Parcel Map 93-204, 940122, County Permit # GA950034.	1996	Tustin
OR-03743	Carolyn Losee	Cultural Resources Investigation for T-Mobile LA02880E "Maxwell" 88 Maxwell, Irvine, Orange County, CA	2009	El Toro
OR-03751	Phil Fulton	Cultural Resource Assessment- Verizon Wireless Services, High Grove Facility, City of Irvine, Orange County, CA	2009	El Toro
OR-03758	Anonymous	Frances Packing House: A Historical and Architectural Evaluation with Analysis of Current Conditions and Building Code Constraints.	1976	Tustin
OR-03759	David C. Hanna, Jr.	Tustin Planning Area 20 Project - Cultural Resources Review	2003	Tustin
OR-03761	Phil Fulton	Cultural Resource Assessment: Verizon Wireless Services, Orchard Hills Facility, City of Irvine, Orange County, California	2009	Black Star Canyon, Orange
OR-03764	Daniel Ewers, Jay Michalsky, and Brooks Smith	Archaeological Monitoring Report: Laguna Canyon Road (State Route 133) Realignment & Widening Project, Station 112+80 to Station 175+90, Orange County, California	2008	Laguna Beach, Tustin
OR-03808	Bonner, Wayne	Cultural Resources Records Search and Site Visit Results for T-Mobile USA Candidate LA33842 (Cedar Grove Park), 11385 Pioneer Road, Tustin, Orange County, California	2009	Orange
OR-03815	Billat, Lorna	Collocation ("CO") Submission Packet FCC FORM 621	2009	Tustin
OR-03816	Drover, Christopher	A Phase I Cultural Resources Inventory for Planning Area 5B, Irvine, CA	2001	El Toro, Tustin
OR-03824	Drover, Christopher	A Cultural Resources Inventory of Planning Areas 1 & 2, Irvine, California	2000	Black Star Canyon, El Toro, Orange, Tustin
OR-03825	Drover, Christopher	A Cultural Resources Inventory of Planning Area 9B and 9C, Irvine, California	2000	El Toro, Tustin

Report No.	Authors	Title	Year	Quad
OR-03858	Wlodarski, Robert	AT&T Wireless Telecommunications Site OC0165 (SCE Glass Circle) Located at the end of Glass Circle, Irvine, California 92604	2010	Tustin
OR-03874	Wlodarski, Robert J.	AT&T Wireless Telecommunications Site LA3219 (Smoke Tree & Irvine Center) NE Quad of Barranca Parkway and Jeffrey Road, Irvine, Ca. 92612	2010	Tustin
OR-03875	Padon, Beth	Archaeological and Paleontological Monitoring for California Avenue Widening Project, UCI, Orange County, California and Archaeological and Paleontological Monitoring for Spectrum 1 (Planning Area 33), City of Irvine, California	2009	Tustin
OR-03876	Padon, Beth and J.D.Stewart	Archaeological and Paleontological Monitoring for California Avenue Widening, University of California, Irvine, California	2010	Tustin
OR-03898	Billat, Lorna	Collocation Submission Packet - Santiago Estrella No. 2, CA-ORC0514D	2010	Tustin
OR-03899	Fulton, Phil	Cultural Resource Assessment - Verizon Wireless Services Stonecliffe Facility, City of Irvine, Orange County, California	2010	Tustin
OR-03917	McKenna, Jeanette A.	Historic Resource Evaluation Report: Hangar 244 of the Former El Toro Marine Corps Air Station (MCAS) and now Located Within the Orange County Great Park, Orange County, California (Project No. B-09-SP-CA-0359).	2010	El Toro
OR-03933	Fitzgerald, Maggie	Orange County Great Park, Cultural Resources Monitoring Report	2010	El Toro
OR-03943	Wlodarski, Robert J.	Record Search and field reconnaissance for proposed AT&T Wireless Telecommunications Site OC0147 (Orchard Hills), located northeast of Portola Parkway and Culver Drive, Irvine, Orange County, California	2010	Black Star Canyon, Orange
OR-03945	Wlodarski, Robert J.	Record Search and Field Reconnaissance for Proposed AT&T Wireless Telecommunications Site OC0148 (High Grove) Located Northeast of Portola Parkway and Culver Drive, Irvine, California, 92602	2010	El Toro
OR-03946	Bedell, Joan and Ed Moore	ORA 119 (Town Center Site)	1984	Tustin
OR-03947	anonymous	Progress Report on Test-Level Investigation of CA-ORA-729	1979	Tustin
OR-03948	Sicoli, Karen and Jennifer Regen	Irvine Ranch Agricultural Headquarters Historical Society	1992	Tustin



Report No.	Authors	Title	Year	Quad
OR-03961	Wlodarski, Robert J.	Records Search and Field Reconnaissance for Proposed AT&T Wireless Telecommunications Site LA3174 (SCE Santiago Substation), Located Along Barranca Parkway, Irvine, California.	2010	Tustin
OR-03979	Chung, Jae	University of California at Irvine has Submitted an Application for Department of the Army Authorization, Under Section 404 of the Clean Water Act to Discharge Fill Materials Associated with the Expansion of the Health Science Center in Unnamed Tributary	2007	Tustin
OR-03982	Wlodarski, Robert J.	A Record Search and Field Reconnaissance for Proposed AT&T Wireless Telecommunications Site OC0164 (SCE Santiago Tower), Located at the Northeast Corner of Culver Drive and 405 Freeway, Irvine, California, 92614	2011	Tustin
OR-03989	Deering, Mark and Mason, Roger D.	Cultural Resources Documentation and Monitoring of Southern California Edison Access Roads During Maintenance by the Orange County Fire Authority, 2010 Orange County, California	2011	Black Star Canyon, El Toro, Laguna Beach, Orange, San Juan Capistrano, Tustin
OR-03999	Fulton, Phil	Cultural Resource Assessment, Verizon Wireless Services Zot Facility, City of Irvine, Orange County, California	2011	Tustin
OR-04000	Strauss, Monica, Ehringer, Candace, and Bray, Madeleine	Irvine Ranch Water District Wells 21 and 22 and Tustin Legacy Well 1 (TL-1) Projects, Phase I Cultural Resources Assessment	2010	Tustin
OR-04029	Deering, Mark and Roger Mason	Cultural Resources Monitoring of Southern California Edison Access Roads Maintained by Orange County Fire Authority, Orange County, California (JPA E6088-0031; I.O. 305869)	2010	Black Star Canyon, El Toro, Laguna Beach, Orange, San Juan Capistrano, Tustin
OR-04031	Padon, Beth	Subject: Phase I Archaeological Study Report for Alumni Center at the University of California Irvine Campus	2011	Tustin
OR-04036	Archer, Gavin, David C. Hanna, Matthew Wetherbee, and Mark R. Deering	Archaeological Data Recovery at Sites PA6-15 and -18 and CA-ORA-244, Locus G Planning Area 6, Phase 2, Neighborhood 4A Irvine, California	2007	El Toro
OR-04037	Archer, Gavin and David Hanna	Archaeological Discovery Report and In Situ Preservation Plan Site PA6-17 Planning Area 6 Phase II, Neighborhood 4A Irvine, California	2008	El Toro

Report No.	Authors	Title	Year	Quad
OR-04039	Archer, Gavin	Pre-Construction Archaeological Investigations for the Planning Area 6, Phase I Project including Archival Research, Test Excavations, Data Recovery Excavations, Tree Removal Monitoring, and Re-survey	2007	El Toro
OR-04040	Archer, Gavin	Archaeological Monitoring and Investigations During Construction Planning Area 6, Neighborhoods 1 and 2, City of Irvine	2007	El Toro
OR-04041	Archer, Gavin	Preliminary Draft Report Test Excavation and Evaluation of Archaeological Discovery PA6-11 and Discovery Treatment Plan Neighborhood 4A, Planning Area 6, City of Irvine	2007	El Toro
OR-04044	Laroque, Mark	Alton Parkway #879054 6 Mason Road, Irvine, Orange, CA	2009	El Toro
OR-04084	Fulton, Terri and Deborah McLean	Cultural Resource Assessment of 22 Natural Treatment System Facility Sites within the San Diego Creek Watershed - Natural Treatment System Project, Irvine Ranch Water District, Orange County, California	2005	El Toro, Orange, Tustin
OR-04088	Schmidt, James	Archaeological Letter Report: Myford 12 KV Deteriorated Pole Replacement Project (WO6043-4800, 0-4869), SAP TD#521413, Rattlesnake Canyon Area, Orange County, California	2011	El Toro
OR-04103	Fulton, Phil	Finding of Effect for the Route 73 Basin Sedimentation Project, Orange County, California, EA 0H4400	2009	Laguna Beach, San Juan Capistrano, Tustin
OR-04106	Bray, Madeleine	IRWD Biosolids Handling and Energy Recovery Facilities Project Draft Phase I Cultural Resources Study	2011	Tustin
OR-04107	Archer, Gavin, Hanna, David, and Deering, Mark	Cultural Resources Field Assessment for the Lake Forest Drive and Bake Parkway Extensions Project in City of Irvine Planning Area 34	2007	El Toro
OR-04122	Wlodarski, Robert J. and Diane Bonner	Cultural Resources Record Search and Archaeological Survey for the Proposed Royal Street Communications, California, LLC, Site LA2866D (Tustin Sports Park) Located at 12850 Robinson Drive, Tustin, Orange County, California, 92782	2010	Tustin
OR-04126	Pettus, Roy, Alexa Clausen, and Michael Sampson	Historic Property Survey Report/Determination of Eligibility and Finding of no adverse effect for El Morro Conversion Project, Crystal Cove State Park, Orange County, California	2004	Laguna Beach

Report No.	Authors	Title	Year	Quad
OR-04136	Weitze, Karen and Christy Dolan	Historic American Building Survey for the Marine Corps Air Station, Tustin Lighter-Than-Air Ship Hangarss (HABS No. CA-2707), Orange County, California	2000	Tustin
OR-04137	Unknown	The Tustin Hangars: Titans of History - An Historical Account of the MCAS Tustin Hangars	2008	Tustin
OR-04151	Mitchell, Laura Lee	Coyote Canyon Cave, an Inner Coastal Rockshelter Excavation of CA-ORA-236	1991	Laguna Beach
OR-04158	Stone, Michel	Historic Survey Report, Alton Avenue Overcrossing at SR-55	2003	Tustin
OR-04159	Anderson, Carson	Alton Avenue Overcrossing at State Route 55 Historical Resources Evaluation Report, Orange County California	2010	Tustin
OR-04164	Clark, Jennifer	N. Wood #879024 4860 Irvine Blvd Irvine, Orange County, CA	2011	Tustin
OR-04165	Padon, Beth	Paleontological Monitoring Gavin Herbert Eye Institute, University of California, Irvine	2012	Tustin
OR-04205	Wlodarski, Robert	Section 106 Consultation for Proposed Collocation: LA3150- Portola Parkway, 4883 Portola Parkway, Irvine	2012	El Toro
OR-04223	Flynn, Chris	Notification of Finding of No Adverse Effect with Standard Conditions for the Bridge Deck Maintenance and Sealing at 30 Locations Throughout Orange County, California	2011	El Toro, San Juan Capistrano, Tustin,
OR-04226	Padon, Beth	Archaeological and Paleontological Monitoring St Cypress Village (PA 40) Jeffery Road Street Improvements for North of I-5 to Trabuco Road, Irvine, California	2012	Tustin
OR-04234	Billat, Lorna	New Tower Submission Packet, Jamboree-Warner	2012	Tustin
OR-04265	Brown, Joan, Deering, Mark, and Sawyer, William	Archaeological Resource Monitoring During Excavation Activities for Tustin Legacy Expansion, City of Tustin, County of Orange, California	2013	Tustin
OR-04269	Wlodarski, Robert	Results for a Phase I Archaeological Study for Proposed AT&T Wireless Telecommunications LA3066 (Irvine Water District) Located at 13826 Sand Canyon Avenue, Irvine, California	2013	El Toro
OR-04296	McKenna, Jeanette	Beckman High School, Irvine, Archaeological Records Search	2013	Tustin
OR-04297	Bonner, Wayne	Cultural Resources Records Search and Site Visit Results for AT&T Mobility, LLC Candidate OCO281 (Stonecliffe) 233-1/2 Stonecliffe Aisle, Irvine, Orange County, California, CASPR No. 3551003407	2013	Tustin

Report No.	Authors	Title	Year	Quad
OR-04320	Maxon, Patrick	Cultural Resources Constraints Assessment for the Planning Area 33 Phase 3 (Lots 107/108 and 112/113) Project, City of Irvine, Orange County, California	2009	Tustin
OR-04321	Fulton, Phil	Cultural Resource Assessment Class I Inventory, Verizon Wireless Services PA 40 Facility, City of Irvine, Orange County	2013	Tustin
OR-04322	Fulton, Phil	Cultural Resource Assessment Class I Inventory, Verizon Wireless Services Grassland-Jeffery Facility City of Irvine, Orange County, California	2014	Tustin
OR-04333	O'Neil, Stephen	Archaeological Resources Excavation Results Report Alton Parkway Extension Project Orange County, California	2012	El Toro
OR-04334	O'Neil, Stephen	Cultural and Paleontological Monitoring Report for the Alton Parkway Extension Project (County Job No ETD2002), City of Irvine, Orange County, California; Project 5780	2012	El Toro
OR-04339	Underbrink, Susan and Bradford, Ileana	Cultural Resource Monitoring Report, Paseo de Verdugo Project San Juan Capistrano, Orange County, California	2014	San Juan Capistrano
OR-04362	Shinn, Juanita R.	Cultural Resources Literature Review of the Irvine Desalter Study Area	1990	Tustin
OR-04364	Brown, Joan C.	Cultural Resources Reconnaissance of the 25 Acre Mason Park Project in Orange County, California	1990	Tustin
OR-04373	Brunzell, David	Cultural Resources Assessment South Orange County Community College District Master Plan Irvine Valley College and Saddleback College Campuses Mission Viejo and Irvine, Orange County, California	2011	San Juan Capistrano, Tustin
OR-04381	Braco, Rachel	Archaeological Monitoring for the Excavation of Verizon Trenching at Southern California Edison Tower M26-T2, Laguna Canyon, Orange County, California (LSA Project No. SCE1303-CWA595)	2014	Tustin
OR-04382	Brunzell, David	Cultural Resources Assessment of the Crown Castle USA Turtlerock High Level Fiber Route, City of Irvine, Orange County, California (BCR Consulting Project No. SYN1103)	2011	Tustin
OR-04385	Sikes, Nancy	Archaeological Survey Report for the Peters Canyon Off-Street Bikeway Lighting Improvements Project, City of Irvine, Orange County, California	2014	Tustin

Report No.	Authors	Title	Year	Quad
OR-04399	Bonner, Wayne	Cultural Resources Records Search and Site Visit Results for Sprint Nextel Candidate OG03XC999 (Barranca) 2802 Barranca Parkway, Irvine, Orange County, California	2013	Tustin
OR-04402	Bonner, Diane, Wills, Carrie, and Crawford, Kathleen	Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate LA02520A (SC090 Shepard of Peace Lutheran Church) 18182 Culver Drive, Irvine, Orange County, California	2014	Tustin
OR-04402	Bonner, Wayne H. and Kathleen A. Crawford	Direct APE Historic Architectural Assessment for T-Mobile West, LLC Candidate LA02520A (SC090 Shepard of Peace Lutheran Church) 18182 Culver Drive, Irvine, Orange County, California	2014	Tustin
OR-04403	Strudwick, Ivan	Cultural Resource Monitoring Report for the Sand Canyon Avenue Undercrossing Project, City of Irvine County of Orange, California	2014	Tustin
OR-04405	Bonner, Diane and Wills, Carrie	Cultural Resources Records Search and Site Visit Results for Verizon Wireless Candidate Cherbourg, 4918 Irvine Center Drive, Irvine, Orange County, California	2014	Tustin
OR-04452	Bonner, Diane and Wills, Carrie	Cultural Resources Records Search and Site Visit Results for Verizon Wireless Candidate Limestone, Intersection of Portola Parkway and 241 Toll Road, Irvine, Orange County, California	2014	El Toro
OR-04453	Bonner, Diane and Wills, Carrie	Cultural Resources Records Search and Site Visit Results for AT&T Mobility, LLC Candidate CLV1261 (TIC PA 5B) Center Median of Future Encore Road NW of Jeffery Road, Irvine, Orange County, California EBI Project No. 61146573	2014	El Toro
OR-04454	Bonner, Diane and Wills, Carrie	Cultural Resources Records Search and Site Visit Results for Verizon Wireless Candidate PA5b, Center Median of Future Encore Road and Northwest of Jeffery Road, Irvine, Orange County, California	2014	El Toro
OR-04455	Bonner, Diane and Wills, Carrie	Cultural Resources Records Search and Site Visit Results for Verizon Wireless Candidate Navigator, Sand Canyon Avenue and Trabuco Road, Irvine, Orange County, California	2014	El Toro
OR-04477	Strudwick, Ivan	Status Assessment of Cultural Resources Within the Coyote Canyon Landfill, City of Newport Beach County of Orange, California	2014	Laguna Beach, Tustin

Report No.	Authors	Title	Year	Quad
OR-04478	Strudwick, Ivan	Cultural Resource Analysis for the Technology Drive Extension Project in th City of Irvine, Orange County, California	2013	El Toro, Tustin
OR-04515	Tang, Bai "Tom"	Evaluation of Potential Historical Resource Phineas Banning Alumni House (Building #233), University of California, Irvine, City of Irvine, Orange County	2015	Tustin
OR-04519	Freeberg, Logan	Archaeological Mitigation Monitoring Report for the Bommer Canyon Nature Walk Project, City of Irvine, County of Orange, California	2015	Laguna Beach
OR-04522	Fulton, Phil	Controlled Demolition of Archaeological Sites CA-ORA-361, CA-ORA-811, CA-ORA-1610, and CA-ORA-1615, Planning Area I, Irvine, California	2015	El Toro
OR-04542	Braco, Rachel	Results of Archaeological Mitigation Monitoring for the Hidden Canyon Project, City of Irvine, Orange County, California (LSA Project No. GLA1301)	2014	El Toro, Tustin
OR-04543	N/A	Cultural Resources Records Search and Site Visit Results for Verizon Wireless Candidate Gillette, 1851 Reynolds Avenue, Irvine, Orange County, California	2014	Tustin
OR-04543	Bonner, Wayne H. and Kathleen A. Crawford	Direct APE Historic Architectural Assessment for Verizon Wireless Candidate Gillette, 1851 Reynolds Avenue, Irvine, Orange County, California	N/A	Tustin
OR-04544	Bonner, Wayne H.	Phase I Archaeological Assessment for the Proposed Harvard Square Project	2001	Tustin
OR-04545	Fulton, Phil	Cultural Resource Assessment Class III Inventory, Verizon Wireless Services, Barranca Facility, City of Irvine, County of Orange, California	2014	Tustin
OR-04559	Fulton, Terri	Cultural Resources Assessment, West Loma Restoration Project, Orange County, California	2015	Black Star Canyon
OR-04568	Fulton, Phil	Cultural Resource Assessment Class III Inventory, Verizon Wireless Services, Settlers Park Facility, City of Irvine, County of Orange, California	2015	Tustin
OR-04574	Brunzell, David	Cultural Resources Assessment of the Crown Castle USA Southern California Metro PCS DAS Project, Orange and Los Angeles Counties, California (BCR Consulting Project No. SYN1007)	2011	El Toro, Laguna Beach, Orange, San Juan Capistrano, Tustin

**APPENDIX E. LIST OF KNOWN SITE RECORDS**

Primary P-30-	Trinomial/HRI	Resource Type	Resource Description	Date Recorded	Distance from PA	Quad	NRHP/CRHP Status Code
57	CA-ORA-000057	Multi-component Site	Foundation/structure pads, privies/dump/trash scatter, water conveyance system, lithic scatter, burials, habitation debris, "San Joaquin Gun Club"	1949, 1985, 1991, 1993	Within	Tustin	N/A
111	CA-ORA-000111/H	Multi-component Site	Remnants of Don Jose Sepulveda adobe, San Joaquin Home Ranch, Burials, lithic scatter, ceramic scatter, hearths/pits, habitation debris, shell midden.	1934, 1938, 1950, 1951, 1977	Within	Tustin	N/A
115	CA-ORA-000115	Prehistoric Site	Lithic scatter, midden-sparse shell.	1963, 1966, 1976, 1985	Within	Tustin	N/A
116	CA-ORA-000116	Prehistoric Site	"House pits, hearths, habitation debris, shell midden, lithic scatter,	1963, 1976, 1985, 2000	Within	Tustin	N/A
117	CA-ORA-000117	Prehistoric Site	Lithic scatter	1963, 1988	Within	Tustin	N/A
118	CA-ORA-000118	Prehistoric Site	Lithic scatter, habitation debris	1963, 1976	Within	Tustin	N/A
119	CA-ORA-000119	Prehistoric Site	Lithic scatter, habitation debris.	1963, 1966, 1984	Within	Tustin	N/A
120	CA-ORA-000120	Prehistoric Site	Lithic scatter, habitation debris.	1963, 1974	Within	Tustin	N/A
121	CA-ORA-000121/H	Multi-component Site	Burials, lithic scatter, hearths, habitation debris, privies/dumps/trash scatter.	1963, 1966, 1970, 1985, 1991, 1993, 1996, 1998	Within	Tustin	N/A
122	CA-ORA-000122	Prehistoric Site	Habitation Debris, shell midden	1963	Within	Tustin	N/A
123	CA-ORA-000123	Prehistoric Site	Lithic scatter, habitation debris, shell midden.	1963, 1976, 1985	Within	Tustin	N/A



Primary P-30-	Trinomial/HRI	Resource Type	Resource Description	Date Recorded	Distance from PA	Quad	NRHP/CRHP Status Code
161	CA-ORA-000161	Prehistoric Site	Bedrock milling feature, lithic scatter, habitation debris.	1966, 1998	Within	Tustin	N/A
178	CA-ORA-000178	Prehistoric Site	Lithic scatter, habitation debris.	1966, 1996	Within	Tustin	N/A
179	CA-ORA-000179	Prehistoric Site	Lithic scatter.	1966	Within	Tustin	N/A
180	CA-ORA-000180	Prehistoric Site	Lithic scatter.	1966	Within	Tustin	N/A
181	CA-ORA-000181	Prehistoric Site	Lithic scatter, bedrock milling feature, habitation debris.	1966, 1966, 1976, 1987, 1991	Within	Tustin	N/A
195	CA-ORA-000195	Prehistoric Site	Lithic scatter, bedrock milling feature, habitation debris.	1967	Within	Tustin	N/A
196	CA-ORA-000196/H	Multi-component Site	Burials, projectile points, knives, lithic scatter, privies/dumps/trash scatter, foundations/structure pads, habitation debris.	1967, 1993, 1996	Within	Tustin	N/A
197	CA-ORA-000197	Prehistoric Site	Lithic scatter, habitation debris.	1967, 1977	Within	Tustin	N/A
218	CA-ORA-000218	Prehistoric Site	Lithic scatter, habitation debris, shell midden.	1966, 1976, 1976, 1985, 2008	Within	Tustin	N/A
225	CA-ORA-000225/H	Multi-component Site	Foundations/structure pads, privies/dumps/trash scatters, wells/cisterns, water conveyance system, Other - Eucalyptus and pepper trees, lithic scatter, habitation debris.	1966, 1985, 1991, 1993, 2008	Within	Tustin	N/A
228	CA-ORA-000228	Prehistoric Site	Turtle Rock and associated village. Lithic scatter, cairns/rock features, habitation debris.	1967	Within	Tustin	N/A

<b>Primary P-30-</b>	<b>Trinomial/HRI</b>	<b>Resource Type</b>	<b>Resource Description</b>	<b>Date Recorded</b>	<b>Distance from PA</b>	<b>Quad</b>	<b>NRHP/CRHP Status Code</b>
244	CA-ORA-000244	Prehistoric Site	Lithic scatter, hearths/pits, trails/linear earthworks, habitation debris.	1965, 1977, 1979, 2001, 2008	Within	El Toro	N/A
269	CA-ORA-000269	Prehistoric Site	Petroglyphs, hearths/pits, cave shelter, habitation debris-shell midden.	1969, 1997	Within	Laguna Beach	N/A
270	CA-ORA-000270	Prehistoric Site	Lithic scatter, petroglyphs, pictographs, cave shelter, habitation debris, disc bead.	1969, 1985, 1988, 1991, 1997	Within	Laguna Beach	N/A
273	CA-ORA-000273	Prehistoric Site	Cave shelter, habitation debris.	1969, 1997	Within	Laguna Beach	N/A
341	CA-ORA-000341	Prehistoric Site	Lithic scatter, habitation debris.	1972, 1983, 1984, 2010	Within	Tustin	N/A
342	CA-ORA-000342	Prehistoric Site	Lithic scatter.	1972	Within	Tustin	N/A
343	CA-ORA-000343	Prehistoric Site	Lithic scatter, rock shelter complex, and habitation debris.	1972, 1985	Within	Tustin	N/A
344	CA-ORA-000344	Prehistoric Site	Lithic scatter, hearths/pits, habitation debris.	1972, 1994	Within	Tustin	N/A
349	CA-ORA-000349	Prehistoric Site	Lithic scatter, habitation debris.	1972, 2000	Within	Tustin	N/A
350	CA-ORA-000350	Prehistoric Site	Lithic scatter, rock shelter, habitation debris.	1972	Within	Tustin	N/A
361	CA-ORA-000361	Prehistoric Site	Fire affected rocks, lithic scatter/trails/linear earthworks.	1972, 2015	Within	El Toro	N/A
373	CA-ORA-000373	Prehistoric Site	Burials, lithic scatter, cairns/rock features, habitation debris.	1972, 1977, 1979, 1984	Within	Tustin	N/A
376	CA-ORA-000376	Prehistoric Site	Part of Turtle Rock Village. Lithic scatter and habitation debris.	(Date Unknown) , 1972	Within	Tustin	N/A
377	CA-ORA-000377	Prehistoric Site	Part of Turtle Rock Village. Lithic scatter and habitation debris.	(Date Unknown) , 1972	Within	Tustin	N/A

Primary P-30-	Trinomial/HRI	Resource Type	Resource Description	Date Recorded	Distance from PA	Quad	NRHP/CRHP Status Code
378	CA-ORA-000378	Prehistoric Site	Part of Turtle Rock Village. Lithic scatter, hearth/pits, habitation debris.	1972, 1979, 1991, 1992	Within	Tustin	N/A
379	CA-ORA-000379	Prehistoric Site	Lithic scatter and rock shelter complex.	1972	Within	Tustin	N/A
382	CA-ORA-000382	Prehistoric Site	Lithic scatter, habitation debris.	1972, 1994, 1996	Within	Tustin	N/A
383	CA-ORA-000383	Prehistoric Site	Lithic scatter, rock shelter/cave, habitation debris.			Tustin	N/A
384	CA-ORA-000384	Prehistoric Site	Lithic scatter and habitation debris.	1972	Within	Tustin	N/A
386	CA-ORA-000386	Prehistoric Site	Lithic scatter, habitation debris.	1973	Within	Tustin	N/A
387	CA-ORA-000387	Prehistoric Site	Lithic scatter and pestle.	1973, 1994	Within	Tustin	N/A
391	CA-ORA-000391	Prehistoric Site	Lithic scatter.	1973, 1984	Within	Tustin	N/A
478	CA-ORA-000478	Prehistoric Site	Lithic scatter.	1974, 1990	Within	El Toro	N/A
494	CA-ORA-000494	Prehistoric Site	Lithic scatter, ceramic scatter, cairns/rock features, Hearths/pits, rock shelter/cave, habitation debris.	1974	Within	Tustin	N/A
495	CA-ORA-000495	Prehistoric Site	Lithic scatter and habitation debris.	1974, 1978, 1998	Within	Tustin	N/A
496	CA-ORA-000496	Prehistoric Site	Lithic scatter and habitation debris.	1974, 1978	Within	Tustin	N/A
499	CA-ORA-000499	Prehistoric Site	Lithic scatter and habitation debris.	1974, 1998, 2001	Within	Tustin	N/A
508	CA-ORA-000508	Prehistoric Site	Lithic scatter and habitation debris.	1975, 1979	Within	Tustin	N/A
513	CA-ORA-000513	Prehistoric Site	Lithic scatter and habitation debris.	1976	Within	Tustin	N/A
543	CA-ORA-000543	Prehistoric Site	Lithic scatter.	1976, 1991, 1994	Within	Tustin	N/A
545	CA-ORA-000545	Prehistoric Site	Lithic scatter, hearth/pits, and habitation debris.	1976, 1982, 2001, 2007	Within	El Toro	N/A
552	CA-ORA-000552	Prehistoric Site	Lithic scatter and habitation debris.	1976	Within	Tustin	N/A

<b>Primary P-30-</b>	<b>Trinomial/HRI</b>	<b>Resource Type</b>	<b>Resource Description</b>	<b>Date Recorded</b>	<b>Distance from PA</b>	<b>Quad</b>	<b>NRHP/CRHP Status Code</b>
553	CA-ORA-000553	Prehistoric Site	A mano and habitation debris.	1976	Within	Tustin	N/A
554	CA-ORA-000554	Prehistoric Site	Lithic scatter.	1976	Within	Tustin	N/A
575	CA-ORA-000575	Prehistoric Site	Lithic scatter and habitation debris.	1975, 1981	Within	Tustin	N/A
602	CA-ORA-000602	Prehistoric Site	Lithic scatter.	1976, 2002	Within	El Toro	N/A
618	CA-ORA-000618	Prehistoric Site	Lithic scatter and habitation debris.	1977, 2008	Within	Laguna Beach	N/A
649	CA-ORA-000649	Prehistoric Site	Lithic scatter and habitation debris.	1977, 1982, 1993, 1995, 1996, 2001.	Within	El Toro	N/A
650	CA-ORA-000650	Prehistoric Site	Lithic scatter, habitation debris.	1977, 2001	Within	El Toro	N/A
719	CA-ORA-000719	Prehistoric Site	Lithic scatter	1978	Within	El Toro	N/A
729	CA-ORA-000729	Prehistoric Site	Lithic scatter	1978, 1979	Within	Tustin	N/A
731	CA-ORA-000731	Prehistoric Site	Lithic scatter.	1978, 1994	Within	Laguna Beach	N/A
732	CA-ORA-000732	Prehistoric Site	Rock shelter, lithic scatter, and habitation debris.	1978, 1982, 1994	Within	Laguna Beach	N/A
734	CA-ORA-000734	Prehistoric Site	Pictographs, rock shelter, and habitation debris.	1978, 1982, 1985	Within	Laguna Beach	N/A
735	CA-ORA-000735	Prehistoric Site	Pictographs, lithic scatter, hearths/pits, rock shelter, habitation debris.	1978, 1982, 1985	Within	Laguna Beach	N/A
736	CA-ORA-000736	Prehistoric Site	Lithic scatter, hearth/pits, rock shelter, habitation debris.	1978, 1982, 1985, 1991	Within	Laguna Beach	N/A
755	CA-ORA-000755	Prehistoric Site	Lithic scatter.	1978, 1996	Within	El Toro	N/A
756	CA-ORA-000756	Prehistoric Site	Lithic scatter.	1978, 1996	Within	El Toro	N/A
757	CA-ORA-000757	Prehistoric Site	Lithic scatter.	1978	Within	El Toro	N/A

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758	CA-ORA-000758	Prehistoric Site	Lithic scatter.	1978, 1981, 1996	Within	El Toro	N/A
759	CA-ORA-000759	Prehistoric Site	Lithic scatter.	1978, 1996	Within	El Toro	N/A
760	CA-ORA-000760	Prehistoric Site	Lithic scatter.	1978, 1996	Within	El Toro	N/A
761	CA-ORA-000761	Prehistoric Site	Lithic scatter and habitation debris.	1978, 1979, 1984, 2001	Within	El Toro	N/A
762	CA-ORA-000762	Prehistoric Site	Lithic scatter, hearths/ pits, habitation debris.	1978, 1979, 1982, 1984, 2001	Within	El Toro	N/A
767	CA-ORA-000767	Prehistoric Site	Lithic scatter	1978, 1998	Within	Tustin	N/A
769	CA-ORA-000769	Prehistoric Site	Lithic scatter.	1978, 1998	Within	El Toro	N/A
798	CA-ORA-000798	Prehistoric Site	Bedrock milling feature and habitation debris.	1979, 1982	Within	Laguna Beach	N/A
799	CA-ORA-000799	Prehistoric Site	Bedrock milling feature.	1979, 1982	Within	Laguna Beach	N/A
800	CA-ORA-000800	Prehistoric Site	Bedrock milling feature.	1979, 1982	Within	Laguna Beach	N/A
801	CA-ORA-000801	Prehistoric Site	Bedrock milling feature.	1979, 1982	Within	Laguna Beach	N/A
803	CA-ORA-000803	Prehistoric Site	Lithic scatter.	1979, 1994	Within	Laguna Beach	N/A
804	CA-ORA-000804	Prehistoric Site	Lithic scatter.	1979, 1984	Within	Laguna Beach	N/A
805	CA-ORA-000805	Prehistoric Site	Lithic scatter	1979	Within	Laguna Beach	N/A
806	CA-ORA-000806	Prehistoric Site	Lithic scatter and habitation debris.	1979, 1982, 1994	Within	Tustin	N/A
807	CA-ORA-000807	Prehistoric Site	Lithic scatter, rock shelter, and habitation debris.	1979, 1994	Within	Tustin	N/A
808	CA-ORA-000808	Prehistoric Site	Rock shelter, lithic scatter, and habitation debris.	1979, 1994	Within	Tustin	N/A

<b>Primary P-30-</b>	<b>Trinomial/HRI</b>	<b>Resource Type</b>	<b>Resource Description</b>	<b>Date Recorded</b>	<b>Distance from PA</b>	<b>Quad</b>	<b>NRHP/CRHP Status Code</b>
809	CA-ORA-000809	Prehistoric Site	Rock shelter, lithic scatter, habitation debris.	1979, 1994	Within	Tustin	N/A
810	CA-ORA-000810	Prehistoric Site	Lithic scatter, hearths/pits.	1979, 1994	Within	Tustin	N/A
811	CA-ORA-000811	Prehistoric Site	Rock shelter, lithic scatter, hearth pits, habitation debris.	1979, 2015	Within	El Toro	N/A
815	CA-ORA-000815	Prehistoric Site	Rock shelter, lithic scatter, hearths/pits, habitation debris.	1979, 1984	Within	Tustin	N/A
822	CA-ORA-000822	Prehistoric Site	Lithic scatter, quarry, habitation debris.	1979	Within	Tustin	N/A
904	CA-ORA-000904	Prehistoric Site	Lithic scatter and habitation debris.	1980, 1998	Within	Tustin	N/A
944	CA-ORA-000944	Prehistoric Site	Habitation debris.	1980, 1980	Within	Laguna Beach	N/A
1029	CA-ORA-001029	Prehistoric Site	Lithic scatter, cairns/rock feature, rock shelter, habitation debris, and disk bead.	1982, 1985, 1991	Within	Laguna Beach	N/A
1041	CA-ORA-001041	Prehistoric Site	Lithic scatter and quarry	1983, 1999, 2008	Within	Tustin	N/A
1069	CA-ORA-001069	Prehistoric Site	Lithic scatter and habitation debris.	1984, 1998	Within	Tustin	N/A
1070	CA-ORA-001070	Prehistoric Site	Lithic scatter and habitation debris.	1984, 1988, 2001	Within	El Toro	N/A
1077	CA-ORA-001077	Prehistoric Site	Petroglyphs and cave.	1984	Within	Laguna Beach	N/A
1080	CA-ORA-001080	Prehistoric Site	Rock shelter and habitation debris.	1985, 1997	Within	Laguna Beach	N/A
1082	CA-ORA-001082	Prehistoric Site	Lithic scatter, ceramic scatter, rock shelter, habitation debris, shell bead.	1985, 1991, 1997	Within	Laguna Beach	N/A
1083	CA-ORA-001083	Prehistoric Site	Lithic scatter, rockshelter, and habitation debris.	1985, 1991, 1997	Within	Laguna Beach	N/A
1093	CA-ORA-001093	Prehistoric Site	Rock shelter and habitation debris-shell midden.	1985, 1997	Within	Laguna Beach	N/A
1094	CA-ORA-001094	Prehistoric Site	Lithic scatter, rock shelter, petroglyph, habitation debris-shell midden.	1985, 1997	Within	Laguna Beach	N/A

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1110	CA-ORA-001110	Prehistoric Site	Lithic scatter.	1986, 2004, 2005	Within	El Toro	N/A
1114	CA-ORA-001114	Prehistoric Site	Lithic scatter and habitation debris.	1987, 1994	Within	El Toro	N/A
1119	CA-ORA-001119	Prehistoric Site	Lithic scatter and habitation debris.	1987, 1991	Within	El Toro	N/A
1194	CA-ORA-001194/H	Multi-component Site	Lithic scatter, habitation debris and reservoirs.	1988	Within	El Toro	N/A
1202	CA-ORA-001202H	Multi-component Site	Ranch/farm, ancillary buildings, three ranch dwellings, a barn, educational building.	1997	Within	Tustin	N/A
1209	CA-ORA-001209	Prehistoric Site	Lithic scatter.	1989, 2008	Within	Laguna Beach	N/A
1225	CA-ORA-001225	Prehistoric Site	Lithic scatter.	1990	Within	Black Star Canyon	N/A
1238	CA-ORA-001238/H	Multi-component Site	Privies/dumps/trash scatter, lithic scatter, habitation debris.	1990, 1998	Within	Tustin	N/A
1239	CA-ORA-001239	Prehistoric Site	Lithic scatter and quarry.	1990	Within	El Toro	N/A
1248	CA-ORA-001248	Prehistoric Site	Part of Turtle Rock Village. Lithic scatter, habitation debris, shell beads.	1990	Within	Tustin	N/A
1274	CA-ORA-001274	Prehistoric Site	Hearth pit habitation debris.	1990	Within	Tustin	N/A
1295	CA-ORA-001295	Prehistoric Site	Lithic scatter, heart, habitation debris.	1990	Within	Tustin	N/A
1297	CA-ORA-001297	Prehistoric Site	Lithic scatter, cairns/rock features, and habitation debris.	1991, 2001	Within	El Toro	N/A
1298	CA-ORA-001298	Prehistoric Site	Lithic scatter, cairns/rock features, and habitation debris.	1991, 1991	Within	El Toro	N/A
1304	CA-ORA-001304	Prehistoric Site	Lithic scatter.	1991, 1994	Within	Tustin	N/A
1311	CA-ORA-001311	Prehistoric Site	Lithic scatter and habitation debris.	1991, 2001	Within	El Toro	N/A
1347	CA-ORA-001347	Prehistoric Site	Lithic scatter.	1993	Within	Tustin	N/A

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1348	CA-ORA-001348	Prehistoric Site	Lithic scatter.	1993	Within	Tustin	N/A
1355	CA-ORA-001355	Prehistoric Site	Lithic scatter.	1993	Within	Tustin	N/A
1356	CA-ORA-001356	Prehistoric Site	Lithic scatter.	1988, 1996	Within	El Toro	N/A
1358	CA-ORA-001358	Prehistoric Site	Lithic scatter and habitation debris.	1988, 1996	Within	Tustin	N/A
1370	CA-ORA-001370	Prehistoric Site	Lithic scatter and habitation debris.	1994	Within	Laguna Beach	N/A
1371	CA-ORA-001371/H	Multi-component Site	Privies/dumps/trash scatters, Machinery, standing structures, lithic scatter, ancillary building.	1994, 1995	Within	El Toro	N/A
1420	CA-ORA-001420	Prehistoric Site	Lithic scatter, rock shelter/cave; habitation debris.	1994	Within	Tustin	N/A
1421	CA-ORA-001421	Prehistoric Site	Lithic scatter and Habitation debris.	1994	Within	Tustin	N/A
1422	CA-ORA-001422	Prehistoric Site	Rock shelter, lithic Scatter, habitation debris.	1994	Within	Tustin	N/A
1423	CA-ORA-001423	Prehistoric Site	Rock shelter, hearths/ pits, and habitation debris.	1994	Within	Tustin	N/A
1424	CA-ORA-001424	Prehistoric Site	Habitation debris.	1995, 1998	Within	Tustin	N/A
1425	CA-ORA-001425	Prehistoric Site	Lithic scatter and habitation debris.	1994	Within	Tustin	N/A
1426	CA-ORA-001426	Prehistoric Site	Rock shelter/ cave and habitation debris.	1994	Within	Tustin	N/A
1427	CA-ORA-001427	Prehistoric Site	Rock shelter, lithic scatter, habitation debris.	1994	Within	Tustin	N/A
1431	CA-ORA-001431	Prehistoric Site	Lithic scatter.	1995, 2008	Within	Laguna Beach	N/A
1432	CA-ORA-001432	Prehistoric Site	Lithic scatter and habitation debris.	1995, 2008	Within	Laguna Beach	N/A
1440	CA-ORA-001440	Prehistoric Site	Lithic scatter and habitation debris.	1995	Within	El Toro	N/A
1444	CA-ORA-001444	Prehistoric Site	Lithic scatter.	1995	Within	El Toro	N/A
1445	CA-ORA-001445	Prehistoric Site	Lithic scatter, quarry.	1995	Within	El Toro	N/A



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1453	CA-ORA-001453	Prehistoric Site	Lithic scatter and quarry.	1996	Within	El Toro	N/A
1457	CA-ORA-001457/H	Multi-component Site	Privies/dumps/trash scatter, Lithic scatter, habitation debris.	1995	Within	Orange	N/A
1458	CA-ORA-001458	Prehistoric Site	Lithic scatter	1995	Within	El Toro	N/A
1459	CA-ORA-001459	Prehistoric Site	Lithic scatter	1996	Within	El Toro	N/A
1462	CA-ORA-001462	Prehistoric Site	Habitation debris.	1996	Within	El Toro	N/A
1465	CA-ORA-001465	Prehistoric Site	Lithic scatter, hearths/pits, habitation debris.	1997	Within	El Toro	N/A
1475	CA-ORA-001475	Prehistoric Site	Lithic scatter	1996	Within	El Toro	N/A
1480	CA-ORA-001480	Prehistoric Site	Lithic scatter, hearths/pits, habitation debris, brown awl tip.	1997	Within	El Toro	N/A
1485	CA-ORA-001485	Prehistoric Site	Rock shelter and habitation debris.	1997	Within	Laguna Beach	N/A
1487	CA-ORA-001487H	Historic Resource	Privies/dumps/trash scatters.	1997	Within	Tustin	N/A
1510	CA-ORA-001510	Prehistoric Site	Lithic scatter, cairns/rock feature, hearth/pits, and habitation debris.	1999	Within	Tustin	N/A
1525	CA-ORA-001525	Prehistoric Site	Lithic scatter, habitation debris.	1998	Within	Tustin	N/A
1526	CA-ORA-001526	Prehistoric Site	Quarry and habitation debris.	1998	Within	Tustin	N/A
1527	CA-ORA-001527	Prehistoric Site	Lithic scatter	1998	Within	Tustin	N/A
1528	CA-ORA-001528	Prehistoric Site	Lithic scatter	1998	Within	Tustin	N/A
1529	CA-ORA-001529	Prehistoric Site	Lithic scatter and habitation debris	1997	Within	El Toro	N/A
1530	CA-ORA-001530	Prehistoric Site	Lithic scatter, hearths/pits, and habitation debris.	1998	Within	El Toro	N/A
1547	CA-ORA-001547	Prehistoric Site	Lithic scatter.	1998	Within	San Juan Capistrano	N/A

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1576	CA-ORA-001576	Prehistoric Site	Lithic scatter and habitation debris.	2000	Within	Tustin	N/A
1580	CA-ORA-001580	Prehistoric Site	Lithic scatter and habitation debris.	2000, 2001	Within	Tustin	N/A
1582	CA-ORA-001582	Prehistoric Site	Lithic scatter and habitation debris.	2001	Within	Tustin	N/A
1583	CA-ORA-001583	Prehistoric Site	Lithic scatter and habitation debris.	2001	Within	Tustin	N/A
1584	CA-ORA-001584	Prehistoric Site	Lithic scatter and habitation debris.	2001	Within	Tustin	N/A
1585	CA-ORA-001585	Prehistoric Site	Lithic scatter, hearth/pits, and habitation debris.	2001	Within	Tustin	N/A
1586	CA-ORA-001586	Prehistoric Site	Lithic scatter, hearth/pits, and habitation debris.	2001	Within	Tustin	N/A
1587	CA-ORA-001587	Prehistoric Site	Lithic scatter, burials, hearth/pits, and habitation debris.	2001	Within	Tustin	N/A
1588	CA-ORA-001588	Prehistoric Site	Lithic scatter, quarry, habitation debris.	2001	Within	El Toro	N/A
1589	CA-ORA-001589	Prehistoric Site	Lithic scatter and quarry.	2001, 2007, 2008	Within	El Toro	N/A
1590	CA-ORA-001590	Prehistoric Site	Quarry	2001	Within	El Toro	N/A
1591	CA-ORA-001591	Prehistoric Site	Lithic scatter and habitation debris.	2001	Within	El Toro	N/A
1592	CA-ORA-001592	Prehistoric Site	Lithic scatter and habitation debris.	2001, 2004	Within	El Toro	N/A
1593	CA-ORA-001593	Prehistoric Site	Lithic scatter.	1982, 2001, 2004, 2008	Within	El Toro	N/A
1594	CA-ORA-001594	Prehistoric Site	Lithic scatter and habitation debris.	2001	Within	El Toro	N/A
1595	CA-ORA-001595	Prehistoric Site	Lithic scatter and quarry.	2001, 2008	Within	El Toro	N/A
1596	CA-ORA-001596	Prehistoric Site	Lithic scatter and quarry.	2001	Within	El Toro	N/A
1609	CA-ORA-001609	Prehistoric Site	Lithic scatter and habitation debris.	2002	Within	Tustin	N/A
1611	CA-ORA-001611	Prehistoric Site	Lithic scatter and habitation debris.	2002	Within	El Toro	N/A
1615	CA-ORA-001615	Prehistoric Site	Lithic scatter and habitation debris.	2002, 2015	Within	El Toro	N/A

Primary P-30-	Trinomial/HRI	Resource Type	Resource Description	Date Recorded	Distance from PA	Quad	NRHP/CRHP Status Code
1616	CA-ORA-001616	Prehistoric Site	Lithic scatter.	2002	Within	Tustin	N/A
1634	CA-ORA-001634H	Historic Resource	"Lion Country Safari"; 1-3 story commercial buildings, animal pens.	2004	Within	El Toro, Tustin	N/A
1635	CA-ORA-001635H	Historic Resource	"PA-39 East Farmhouse Site"; privies/dumps/trash scatters, water conveyance system, walls/fences, standing structures.	2004	Within	El Toro	N/A
1651	CA-ORA-001651	Prehistoric Site	Lithic scatter	2006	Within	El Toro	N/A
1656	CA-ORA-001656	Prehistoric Site	Lithic scatter, rock shelter/cave, habitation debris.	2000	Within	Tustin	N/A
1657		Historic Resource	Engineering structure.	2006	Within	Tustin	N/A
1658	CA-ORA-001658H	Historic Resource	Roads/trails/railroad grades.	2006, 2016	Within	El Toro	N/A
1659	CA-ORA-001659H	Historic Resource	Standpipe.	2006	Within	El Toro	N/A
1660	CA-ORA-001660	Prehistoric Site	Lithic scatter.	2006	Within	El Toro	N/A
1661	CA-ORA-001661	Prehistoric Site	Lithic scatter.	2006	Within	El Toro	N/A
1662	CA-ORA-001662H	Historic Resource	Privies/dumps/trash scatters	2006	Within	El Toro	N/A
1673	CA-ORA-001673	Prehistoric Site	Lithic scatter, hearths/pits, habitation debris.	2007	Within	El Toro	N/A
1674	CA-ORA-001674	Prehistoric Site	Lithic scatter, architectural feature-floor, hearth/pits, and habitation debris.	2007	Within	El Toro	N/A
1675	CA-ORA-001675	Prehistoric Site	Hearth/pits, habitation debris.	2007	Within	El Toro	N/A
1676	CA-ORA-001676	Prehistoric Site	Lithic scatter, hearth/pits, habitation.	2007	Within	El Toro	N/A

Primary P-30-	Trinomial/HRI	Resource Type	Resource Description	Date Recorded	Distance from PA	Quad	NRHP/CRHP Status Code
1677	CA-ORA-001677	Prehistoric Site	Lithic scatter, architectural feature, hearth/pits, habitation debris.	2007	Within	El Toro	N/A
1678	CA-ORA-001678	Prehistoric Site	Lithic scatter, hearths/pits, and habitation debris.	2007	Within	El Toro	N/A
1679	CA-ORA-001679	Prehistoric Site	Hearths/pits	2007	Within	El Toro	N/A
1680	CA-ORA-001680	Prehistoric Site	Lithic scatter and habitation debris.	2007	Within	El Toro	N/A
1681	CA-ORA-001681H	Historic Resource	Foundations/structure pads.	1981	Within	Tustin	N/A
1685	CA-ORA-001685	Prehistoric Site	Lithic scatter.	2004, 2008	Within	El Toro	N/A
1702	CA-ORA-001702	Prehistoric Site	Lithic scatter and hearth/pits.	2008	Within	El Toro	N/A
1703	CA-ORA-001703	Prehistoric Site	Hearth/pits.	2008	Within	El Toro	N/A
1704	CA-ORA-001704	Prehistoric Site	Lithic scatter, hearth/pits, and habitation debris.	2008	Within	El Toro	N/A
1705	CA-ORA-001705	Prehistoric Site	Lithic scatter, hearth/pits, habitation debris.	2007	Within	El Toro	N/A
1706	CA-ORA-001706	Prehistoric Site	Lithic scatter and hearth/pits.	2007	Within	El Toro	N/A
1707	CA-ORA-001707	Prehistoric Site	Lithic scatter and hearth pits.	2008	Within	El Toro	N/A
1720	CA-ORA-001720	Prehistoric Site	Lithic scatter.	2011	Within	Tustin	N/A
1731	CA-ORA-001731	Prehistoric Site	Lithic scatter and habitation debris.	2013	Within	Tustin	N/A
1734	CA-ORA-001734	Prehistoric Site	Lithic scatter.	2013	Within	Tustin	N/A
1754		Historic Resource	"Bommer Canyon Cattle Camp" Farm/ranch.	2015	Within	Laguna Beach	N/A
1755		Historic Resource	Historic refuse scatter.	2015	Within	El Toro	N/A
1763	CA-ORA-001763	Prehistoric Site	Lithic scatter and habitation debris.	2016	Within	El Toro	N/A

Primary P-30-	Trinomial/HRI	Resource Type	Resource Description	Date Recorded	Distance from PA	Quad	NRHP/CRHP Status Code
1765	CA-ORA-001765	Prehistoric Site	Lithic scatter, hearths/pits, habitation debris, and groundstone.	2016	Within	Black Star Canyon	N/A
1766	CA-ORA-001766	Prehistoric Site	Hearths/pits and groundstone.	2016	Within	Black Star Canyon	N/A
100020	CA-0-IF-20	Prehistoric Site	Lithic scatter and habitation debris.	1994	Within	Tustin	N/A
100021	CA-0-IF-21	Prehistoric Site	Lithic scatter.	1991	Within	Tustin	N/A
100124		Prehistoric Site	Lithic scatter.	2010	Within	El Toro	N/A
100143		Prehistoric Site	Lithic scatter.	2006	Within	El Toro	N/A
100144		Prehistoric Site	Lithic scatter.	2007	Within	El Toro	N/A
100145		Prehistoric Site	Lithic scatter.	2007	Within	El Toro	N/A
100146		Unknown Isolate	Isolate, Unknown Age.	2007	Within	El Toro	N/A
100147		Prehistoric Isolate	Metate scatter.	2009	Within	El Toro	N/A
100148		Prehistoric Isolate	Metate	2009	Within	El Toro	N/A
100149		Prehistoric Isolate	Groundstone	2009	Within	El Toro	N/A
100150		Prehistoric Isolate	Retouched flake.	1997	Within	Tustin	N/A
100162		Prehistoric Isolate	Mano	1997	Within	Tustin	N/A
100163		Historic Resource	Privies/dumps/trash scatter-ceramic fragment.	1997	Within	Tustin	N/A
100164		Historic Resource	Privies/dumps/trash scatters-ceramic fragment.	1997	Within	Tustin	N/A
100165		Historic Resource	Privies/dumps/trash scatters.	1997	Within	Tustin	N/A
100166		Historic Resource	Privies/dumps/trash scatters-faunal remains.	1997	Within	Tustin	N/A
100167		Prehistoric Isolate	Mano	1997	Within	Tustin	N/A

<b>Primary P-30-</b>	<b>Trinomial/HRI</b>	<b>Resource Type</b>	<b>Resource Description</b>	<b>Date Recorded</b>	<b>Distance from PA</b>	<b>Quad</b>	<b>NRHP/CRHP Status Code</b>
100230		Prehistoric Isolate	Basalt core.	2016	Within	Orange	N/A
100231		Prehistoric Isolate	Core reduction.	2016	Within	Black Star Canyon	N/A
100232		Prehistoric Isolate	Lithic scatter.	2016	Within	Black Star Canyon	N/A
100268		Prehistoric Isolate	Flake scraper.	N.D.	Within	El Toro	N/A
100269		Prehistoric Isolate	"Quartzite amorphous core.	N.D.	Within	El Toro	N/A
100270		Prehistoric Site	Lithic scatter.	N.D.	Within	El Toro	N/A
100271		Prehistoric Site	Lithic scatter.	N.D.	Within	El Toro	N/A
100272		Prehistoric Site	Lithic scatter.	N.D.	Within	El Toro	N/A
100273		Prehistoric Site	Lithic scatter.	N.D.	Within	El Toro	N/A
100274		Prehistoric Isolate	Chert core	N.D.	Within	El Toro	N/A
100275		Prehistoric Isolate	Flake scraper	N.D.	Within	El Toro	N/A
100278		Prehistoric Isolate	Hammerstone	1980	Within	El Toro	N/A
100297		Prehistoric Isolate	Mano.	1984	Within	El Toro	N/A
100298		Prehistoric Isolate	Metate fragment.	1984	Within	El Toro	N/A
100316		Prehistoric Isolate	Groundstone pestle.	1998	Within	El Toro	N/A
100351		Historic Isolate	Six buried sewer pipes.	2004	Within	Tustin	N/A
100352		Historic Isolate	Purex Bottle.	2004, 2007	Within	El Toro	N/A
100353		Prehistoric Isolate	Habitation debris-shells.	2004	Within	El Toro	N/A
100354		Prehistoric Isolate	Mano	2004	Within	El Toro	N/A
100355		Prehistoric Isolate	Metate.	2004	Within	El Toro	N/A

<b>Primary P-30-</b>	<b>Trinomial/HRI</b>	<b>Resource Type</b>	<b>Resource Description</b>	<b>Date Recorded</b>	<b>Distance from PA</b>	<b>Quad</b>	<b>NRHP/CRHP Status Code</b>
100356		Prehistoric Isolate	Chalcedony Core and Chert Flakes	2004	Within	El Toro	N/A
100357		Prehistoric Isolate	Abalone Tool	2004	Within	El Toro	N/A
100358		Historic Isolate	Clay Ball	2004	Within	El Toro	N/A
100371		Prehistoric Site	Habitation debris.	2006	Within	El Toro	N/A
100372		Prehistoric Isolate	Clam shell	2006	Within	El Toro	N/A
100373		Prehistoric Site	Lithic scatter.	206	Within	El Toro	N/A
100374		Prehistoric Isolate	Quartzite flake	2006	Within	El Toro	N/A
100375		Prehistoric Site	Lithic scatter.	2006	Within	El Toro	N/A
100385		Prehistoric Isolate	Grinding stone	2004	Within	El Toro	N/A
100386		Prehistoric Isolate	Grinding stone	2004	Within	El Toro	N/A
100387		Prehistoric Isolate	Bifacial mano	2004	Within	El Toro	N/A
100388		Prehistoric Isolate	Mano fragment.	2004	Within	El Toro	N/A
100389		Prehistoric Site	Lithic scatter.	2004, 2007	Within	El Toro	N/A
100390		Prehistoric Site	Lithic scatter.	2003	Within	Tustin	N/A
100391		Prehistoric Isolate	Mano.	2004	Within	El Toro	N/A
100392		Prehistoric Isolate	Chert core tool.	2007	Within	El Toro	N/A
100393		Prehistoric Isolate	Rhyolite chipping tool.	2007	Within	El Toro	N/A
100394		Prehistoric Isolate	Flake.	2007	Within	El Toro	N/A
100395		Prehistoric Isolate	Chert core.	2007	Within	El Toro	N/A
100396		Prehistoric Site	Lithic scatter.	2007	Within	El Toro	N/A

<b>Primary P-30-</b>	<b>Trinomial/HRI</b>	<b>Resource Type</b>	<b>Resource Description</b>	<b>Date Recorded</b>	<b>Distance from PA</b>	<b>Quad</b>	<b>NRHP/CRHP Status Code</b>
100397		Prehistoric Isolate	Chert core.	2007	Within	El Toro	N/A
100398		Prehistoric Isolate	Weight stone.	2005	Within	El Toro	N/A
100399		Prehistoric Isolate	Chert core.	2005	Within	El Toro	N/A
100400		Prehistoric Site	Lithic scatter	2006	Within	El Toro	N/A
100401		Prehistoric Isolate	Mano.	2006	Within	El Toro	N/A
100406		Prehistoric Isolate	Pestle.	2007	Within	Tustin	N/A
100407		Prehistoric Isolate	Metate fragments and shell.	2007	Within	Tustin	N/A
100408		Prehistoric Isolate	Habitation debris, shell fragments	2005	Within	El Toro	N/A
100409		Prehistoric Isolate	Netherstone	2005	Within	El Toro	N/A
100410		Prehistoric Isolate	Chert tested cobble	2005	Within	El Toro	N/A
100411		Prehistoric Isolate	Chert core.	2005	Within	El Toro	N/A
100412		Prehistoric Isolate	Rhyolite core frag.	2005	Within	El Toro	N/A
100413		Prehistoric Isolate	Bifacial core.	2005	Within	El Toro	N/A
100414		Prehistoric Isolate	Chert flake.	2005	Within	El Toro	N/A
100415		Prehistoric Isolate	Basalt core.	2005	Within	El Toro	N/A
100416		Prehistoric Isolate	Flake.	2005	Within	El Toro	N/A
100417		Prehistoric Isolate	Flake and core/tested cobble.	2005	Within	El Toro	N/A
100418		Prehistoric Isolate	Chert core.	2005	Within	El Toro	N/A
100419		Prehistoric Isolate	Habitation debris-shell.	2005	Within	El Toro	N/A
100420		Prehistoric Isolate	Hammerstone.	2005	Within	El Toro	N/A



<b>Primary P-30-</b>	<b>Trinomial/HRI</b>	<b>Resource Type</b>	<b>Resource Description</b>	<b>Date Recorded</b>	<b>Distance from PA</b>	<b>Quad</b>	<b>NRHP/CRHP Status Code</b>
100421		Prehistoric Isolate	Flake.	2005	Within	El Toro	N/A
100422		Prehistoric Isolate	Crushed shell.	2005	Within	El Toro	N/A
100423		Prehistoric Isolate	Chert.	2005	Within	El Toro	N/A
100424		Prehistoric Isolate	Mano	2005, 2008	Within	El Toro	N/A
100425		Prehistoric Isolate	Mano	2005	Within	El Toro	N/A
100426		Prehistoric Isolate	Habitation debris-shell	2005	Within	El Toro	N/A
100427		Prehistoric Isolate	Chert.	2005	Within	El Toro	N/A
100428		Prehistoric Isolate	Mano	2005	Within	El Toro	N/A
100429		Prehistoric Site	Lithic scatter.	2005	Within	El Toro	N/A
100430		Prehistoric Isolate	Core fragment	2005	Within	El Toro	N/A
100431		Multi-component Isolate	Flake tool and bone fragments.	2005	Within	El Toro	N/A
100432		Prehistoric Isolate	Lithic scatter, bone fragments, shell.	2005	Within	El Toro	N/A
100433		Prehistoric Isolate	Mano	2005	Within	El Toro	N/A
100434		Prehistoric Isolate	Metate.	2005, 2008	Within	El Toro	N/A
100435		Prehistoric Isolate	Microblade core.	2005	Within	El Toro	N/A
100436		Prehistoric Isolate	Chert core.	2005	Within	El Toro	N/A
100437		Prehistoric Isolate	Core.	2005	Within	El Toro	N/A
100450		Prehistoric Isolate	Pestle.	1990	Within	El Toro	N/A
100451		Prehistoric Isolate	Lithic scatter.	1986	Within	El Toro	N/A
100453		Prehistoric Isolate	Flake.	1994	Within	El Toro	N/A
100454		Prehistoric Isolate	Millingstone.	1986	Within	El Toro	N/A

<b>Primary P-30-</b>	<b>Trinomial/HRI</b>	<b>Resource Type</b>	<b>Resource Description</b>	<b>Date Recorded</b>	<b>Distance from PA</b>	<b>Quad</b>	<b>NRHP/CRHP Status Code</b>
100455		Prehistoric Site	Lithic scatter.	1986	Within	El Toro	N/A
100456		Prehistoric Isolate	Flake.	1986	Within	El Toro	N/A
100457		Prehistoric Isolate	Mano fragment.	1986	Within	El Toro	N/A
100465		Prehistoric Isolate	Mano fragment.	1984	Within	El Toro	N/A
100466		Prehistoric Isolate	Metate fragment.	1984	Within	El Toro	N/A
100468		Prehistoric Isolate	Pestle fragment.	1988	Within	Tustin	N/A
100469		Prehistoric Isolate	Groundstone fragment.	1990	Within	Tustin	N/A
100477		Prehistoric Isolate	Lithic scatter.	2009	Within	El Toro	N/A
100480		Prehistoric Isolate	Mano fragment	2011	Within	Tustin	N/A
100481		Prehistoric Isolate	Mano fragment.	2011	Within	Tustin	N/A
100482		Prehistoric Isolate	Metate fragment.	2011	Within	Tustin	N/A
100483		Prehistoric Isolate	Metate fragment.	2011	Within	Tustin	N/A
100484		Prehistoric Isolate	Mano fragment.	2011	Within	Tustin	N/A
100493		Prehistoric Isolate	Flake.	1982	Within	El Toro	N/A
100496		Prehistoric Isolate	Mano fragment.	1982	Within	El Toro, Tustin	N/A
100498		Prehistoric Site	"Other".	2015	Within	El Toro	N/A
157788	37153	Historic Resource	1-3 story commercial building, Utilitarian style, "Irvine Blacksmith Shop": c. 1915-1916.	1985	Within	Tustin	7K
161710	41097	Historic Resource	Farm/ranch, Adobe building/structure, "Rancho San Joaquin Headquarters": 1868.	1977	Within	Tustin	7L
161824	66351	Historic Resource	Trans Housing: ?		Within	Tustin	6Y

Primary P-30-	Trinomial/HRI	Resource Type	Resource Description	Date Recorded	Distance from PA	Quad	NRHP/CRHP Status Code
161828	66414	Historic Resource	Trans Housing: ?		Within	Tustin	6Y
161858		Historic Resource	Single family property, ancillary building, landscape architecture, farm/ranch, "Irvine Agricultural Headquarters Complex": c. 1890s.	1982	Within	Tustin	N/A
161866	70070	Historic Resource	Canal/irrigation ditch, "Bee Canyon Wash Canal / Ditch": c. 1945.	1990	Within	El Toro	6Y
161867		Historic Resource	Quonset, "South Coast Gun Club": c. 1945.	1990	Within	El Toro	N/A
161867	70071	Historic Resource	South Coast Gun Club: 1945.		Irvine	El Toro	6Y
161868	70072	Historic Resource	Ancillary building, wood frame, "Irvine Ranch Shed": c. pre 1945.	1990	Within	El Toro	6Y
161869	70073	Historic Resource	Trees, "Eucalyptus Tree Windbreaks": c. 1888-1900.	1990	Within	El Toro	6Y
161870	70074	Historic Resource	Single family property, Venacular style, "East Irvine Post Office, Irvine General Store": 1904.	1990	Within	Tustin	6Y
161871	70075	Historic Resource	Hotel, 1-3 story commercial building, Craftsman style, "Irvine Hotel": 1913.	1990	Within	El Toro	6Y
161871	70075	Historic Resource	Irvine Hotel: 1913		Within	Tustin	6Y
161872	70077	Historic Resource	Ancillary building, 1-3 story commercial building, Vernacular style, "Agricultural Office for Sea Tree Nurseries": 1930.	1991	Within	Tustin	6Y
161872	70077	Historic Resource	Agricultural Shed: 1930.		Within	Tustin	6Y

Primary P-30-	Trinomial/HRI	Resource Type	Resource Description	Date Recorded	Distance from PA	Quad	NRHP/CRHP Status Code
161873	70078	Historic Resource	Single family residence, Vernacular style, "Worker's Cottage": 1914.	1991, 2006	Within	Tustin	6Y
161874	70079	Historic Resource	Single family property, Vernacular style, "Worker's Cottage": 1900.	1991, 2006	Within	Tustin	6Y
161875	70080	Historic Resource	1-3 story commercial building/motel, Art Deco, "Irvine Garage": 1923.	1991	Within	Tustin	6Y
161877	70082	Historic Resource	Val Verde Sportsmen's Club: 1924.		Within	El Toro	6Y
161878	70311	Prehistoric Site	Christ College Site		Within	Tustin	1S
161889	72754	Historic Resource	1-3 story commercial building, "Irvine Bean & Growers Assn Bldg": 1895 and 1947.	1984, 1991	Within	Tustin	7L
161894	73120	Historic Resource	Single family property, hotel/motel, 1-3 story commercial building, industrial buildings, "Old Town Irvine": 1895.	1991	Within	Tustin	7L
162164	85030	Historic Resource	Buffalo Ranch/ Urnabus Square: 1962.		Irvine	Tustin	2S2
162270	90011	Historic Resource	Monument, "Barton Mound": unknown.	1935, 1980	Within	Tustin	7L
162289	90898	Historic Resource	Adobe, Mexican style, "Foundation of Rancho San Joaquin Adobe": c. 1838-1876.	1976, 1983, 1984	Within	Tustin	7L
162290	90900	Historic Resource	Single family property, educational building, farm/ranch, Frame building, "Irvine Historical Society Museum": 1868.	1978, 1983	Within	Tustin	7L

Primary P-30-	Trinomial/HRI	Resource Type	Resource Description	Date Recorded	Distance from PA	Quad	NRHP/CRHP Status Code
162325	94367	Historic Resource	Single family property, Vernacular style, "Spencer House": 1915.	1982	Within	Tustin	6Y
162326	94368	Historic Resource	The Echberria Home: 1925.		Irvine	Tustin	6Y
176545	117187/117197	Historic Resource	Military property, "Presidential Support Area Tower and Hangar": 1945 and 1942.	1974	Within	El Toro	N/A
176636		Historic Resource	Lake/river/reservoir, "Lambert Reservoir": c. 1930.	2001	Within	El Toro	N/A
176637		Historic Site	Historic refuse scatter	2001	Within	El Toro	N/A
176638		Historic Site	Historic refuse scatter	2001 2004	Within	El Toro	N/A
176639		Historic Resource	Farm/ranch and residential debris: pre 1949.	2001	Within	El Toro	N/A
176640		Historic Resource	Single family property: c. 1930s.	2001	Within	El Toro	N/A
176641		Historic Resource	Industrial building, farm/ranch, agricultural building, "Irvine Valencia Growers-Packing House": 1927.	2001	Within	Tustin	N/A
176748		Historic Resource	Canal/aqueduct, "The Highline Canal": c.1933.	2003	Within	El Toro, Orange, Tustin	6Z
176777		Historic Resource	Single family property, Vernacular ranch style, "Lambert Ranch": 1915.	2004	Within	El Toro	6Z
176796		Historic Resource	Military property, Modern style, "Married Housing, MCAS, El Toro": 1947.	1997	Within	El Toro	"6"
176797		Historic Resource	Military property, Modern style, "Officers' Housing, MCAS, El Toro": 1964.	1997	Within	El Toro	"6"

<b>Primary P-30-</b>	<b>Trinomial/HRI</b>	<b>Resource Type</b>	<b>Resource Description</b>	<b>Date Recorded</b>	<b>Distance from PA</b>	<b>Quad</b>	<b>NRHP/CRHP Status Code</b>
176798		Historic Resource	Military property, single family properties, Modern, "Capehart Married Housing, MCAS, El Toro": 1973.	1997	Within	El Toro	"6"
176799		Historic Resource	Military property, single family properties, Ranch style, "Wherry Village, MCAS, El Toro": 1954.	1997	Within	El Toro	"6"
176808		Historic Resource	1-3 story commercial building, "Frances Paking House": 1916.	1977, 2006	Within	Tustin	S1
176838		Historic Resource	Religious building, Spanish Eclectic, "Irvine Community Church": 1952.	2005	Within	Tustin	6Z
176945		Historic Resource	1-3 story commercial building, Craftsman style, "Irvine General Store": 1911.	1990	Within	Tustin	N/A
177038	117199	Historic Resource	Military property, "El Toro MCAS": 1943.	2010	Within	El Toro	N/A
177521	N/A	Historic Resource	1-3 story commercial building, Modern Style, "Quality Packaging": c. 1968.	2014	Within	Tustin	N/A
177532	N/A	Historic Resource	Religious building, Modern, "Light of Christ Lutheran Church": c. 1968.	2014	Within	Tustin	N/A
177617	N/A	Historic Resource	Community center/social hall, Ranch style, c. 1985-1986.	2015	Within	Tustin	6Z
179839		Historic Resource	Dam, "Laguna Canyon Dam & Reservoir": 1938.	2003	Within	Tustin	N/A

<b>Primary P-30-</b>	<b>Trinomial/HRI</b>	<b>Resource Type</b>	<b>Resource Description</b>	<b>Date Recorded</b>	<b>Distance from PA</b>	<b>Quad</b>	<b>NRHP/CRHP Status Code</b>
179855		Historic Resource	Railroad tracks, "Burlington Northern & Santa Fe R. R. (BNSF) tracks": 1887.	2002	Within	Tustin	CRHP eligible
	170111	Historic Resource	Tustin USAR Center : 1963.		Irvine	Tustin	6Y

## APPENDIX E

### Greenhouse Gas Emissions Forecasts Report for the City of Irvine Draft Climate Action and Adaptation Plan



# Memo



1230 Columbia St, Suite 440  
San Diego, CA 92101  
619.219.8000

**Date:** August 8, 2023

**To:** City of Irvine – CAAP Project Team

**From:** Poonam Boparai, Fred Hochberg, Hannah Kornfeld, and Andrew Martin (Ascent)

**Subject:** Greenhouse Gas Emissions Forecasts Report for the City of Irvine Climate Action and Adaptation Plan

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## INTRODUCTION

The City of Irvine (City) is developing a Climate Action and Adaptation Plan (CAAP) to reduce greenhouse gas (GHG) emissions and prepare the city for the impacts of climate change. This technical memorandum provides the results of these forecasts, and describes the methods, assumptions, emissions factors, and data sources used to prepare them. The GHG emissions forecasts provide a foundation for the forthcoming steps of the City’s climate action planning process, including establishing City-specific targets for reducing emissions levels, calculating additional reductions in emissions levels needed to meet the City’s targets (also referred to as the emissions “gap”), and formulating and quantifying measures the City can take to meet its targets and close the gap.

## ORGANIZATION OF THIS MEMORANDUM

This memorandum consists of two parts:

- ▶ **Section 1: Summary of Inventory Results** presents an overview of the City’s 2019 GHG emissions inventories for community-wide activities and municipal operations.
- ▶ **Section 2: Greenhouse Gas Emissions Forecasts** summarizes the forecasted GHG emissions under “business-as-usual” (BAU) and legislative-adjusted BAU scenarios for years 2030, 2035, 2040, and 2045. The first scenario, called the BAU scenario, does not account for GHG emissions reductions resulting from laws and regulations adopted by local, regional, State, or federal agencies; it illustrates how much emissions would increase due to population and economic growth if no actions to reduce emissions were taken. The second scenario, a legislative-adjusted BAU scenario, shows emissions reductions from laws and regulations enacted by regional, State, and federal agencies; it does not reflect City actions to reduce GHG emissions. Further reductions in GHG emissions from City actions will be evaluated as a next step in the process of preparing the CAAP.

# 1 SUMMARY OF INVENTORY RESULTS

## 1.1 2019 COMMUNITY-WIDE INVENTORY

According to the *Greenhouse Gas Emissions Inventory Report for the City of Irvine Climate Action and Adaptation Plan* (2019 Inventory Report), the community generated approximately 2,247,593 metric tons of carbon dioxide equivalent (MTCO<sub>2</sub>e) in 2019. Figure 1 and Table 1 present 2019 community-wide emissions by sector.

The largest emissions-generating sectors include on-road transportation and nonresidential and residential building energy. The 2019 emissions level serves as the baseline to forecast emissions and set reduction targets in the CAAP. GHG emissions from stationary sources regulated by State and federal agencies (e.g., sources covered by the Cap-and-Trade program) and outside the City's jurisdiction and influence (e.g., UC Irvine, County-operated landfill) are discussed in the 2019 Inventory Report but not reflected in the community-wide emissions total for 2019.

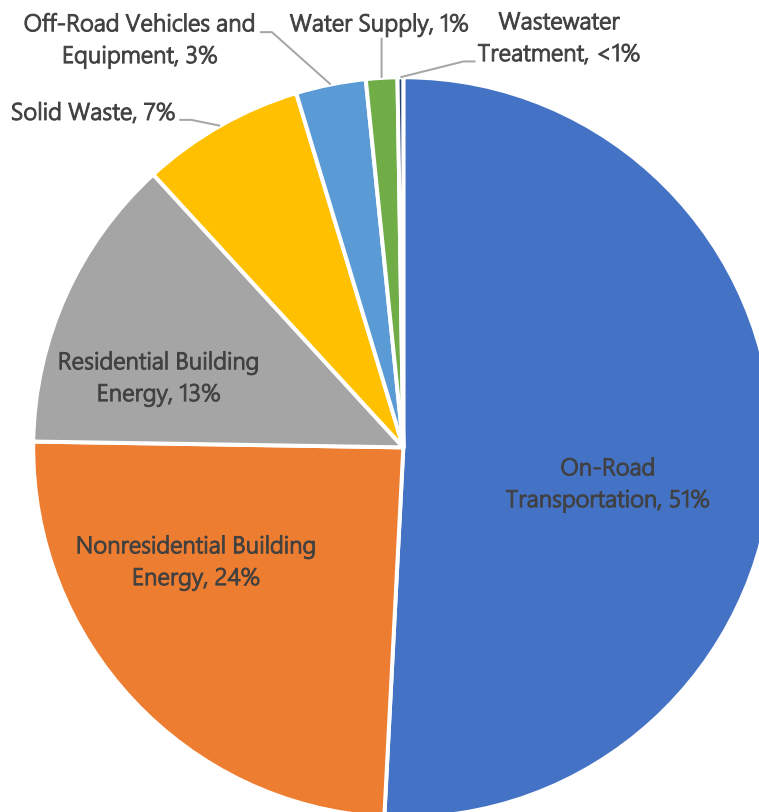


Figure 1. 2019 Community-wide GHG Emissions Inventory in the City of Irvine

Note: Totals are rounded to the nearest percent.

**Table 1. 2019 Community-wide GHG Emissions Inventory in the City of Irvine**

Sector	GHG Emissions (MTCO <sub>2</sub> e)	Percent of Total
On-Road Transportation	1,140,206	51
Nonresidential Building Energy	550,138	24
Residential Building Energy	291,405	13
Solid Waste	160,626	7
Off-Road Vehicles and Equipment	68,756	3
Water Supply	30,798	1
Wastewater Treatment	5,665	<1
<b>Total</b>	<b>2,247,593</b>	<b>100</b>

Notes: Totals may not sum exactly due to independent rounding to the nearest percent. GHG = greenhouse gases; MTCO<sub>2</sub>e = metric tons of carbon dioxide equivalent; NA = not applicable.

Source: Ascent Environmental 2023.

## 1.2 2019 MUNICIPAL OPERATIONS INVENTORY RESULTS

Based on the modeling conducted, the City's municipal operations generated approximately 18,566 MTCO<sub>2</sub>e in 2019. The employee commute and buildings and facilities sectors generated approximately 81 percent of total emissions. The 2019 inventory serves as the municipal operations GHG emissions baseline for the CAAP to forecast emissions and set emissions reductions targets. Table 2 and Figure 2 present the results of the City's 2019 municipal operations GHG emissions inventory by sector, and a description of each emissions sector, including key sources of emissions, is provided in further detail in *Greenhouse Gas Emissions Inventory Report for the City of Irvine Climate Action and Adaptation Plan*.

**Table 2. 2019 City of Irvine Municipal Operations GHG Emissions Inventory**

Sector	GHG Emissions (MTCO <sub>2</sub> e)	Percent of Total
Buildings and Facilities	12,003	65
Employee Commute	3,032	16
Wastewater Treatment	1,144	6
Vehicle Fleet	1,127	6
Streetlights and Traffic Signals	1,097	6
Solid Waste	159	1
Water Supply	4	<1
<b>Total</b>	<b>18,566</b>	<b>100</b>

Notes: Totals may not sum exactly due to independent rounding. GHG = greenhouse gases; MTCO<sub>2</sub>e = metric tons of carbon dioxide equivalent.

Source: Ascent Environmental 2023.

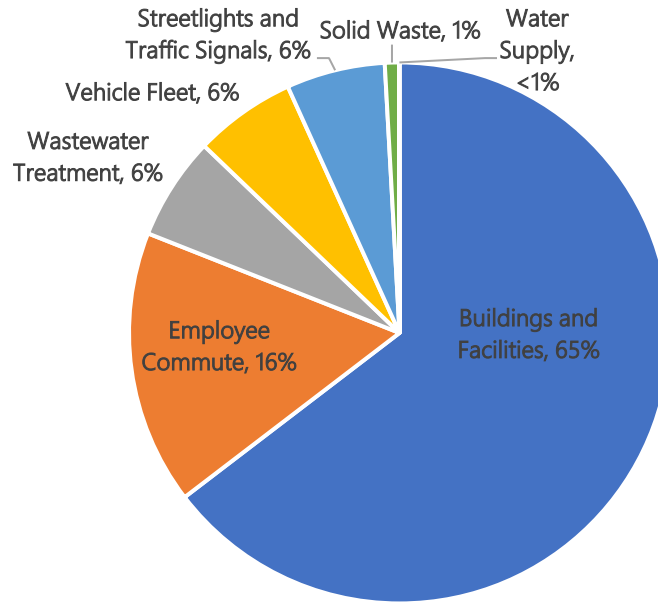


Figure 2. 2019 City of Irvine Municipal Operations GHG Emissions Inventory

## 2 GREENHOUSE GAS EMISSIONS FORECASTS

### 2.1 COMMUNITY FORECAST RESULTS

The BAU GHG emissions forecasts provide an assessment of how emissions generated by community activities will change over time without further local, State, or federal action. In addition to accounting for the city's growth under a BAU scenario, an adjusted BAU forecast was prepared, which includes adopted legislative and regulatory actions at the State and federal levels that would affect emissions without any local action (referred to hereafter as 'legislative-adjusted BAU'). These include regulatory requirements to increase vehicle fuel efficiency and increase renewable energy sources in grid electricity portfolios. It is important to note that the legislative-adjusted BAU emissions forecasts only include emissions reductions associated with implementation of adopted federal and State legislation and regulations and do not include goals established by executive orders or targets established by federal or State agencies. These forecasts provide the City with the information needed to focus efforts on emissions sectors and sources that have the greatest opportunities for GHG emissions reductions.

The GHG emissions forecasts for 2030, 2035, 2040, and 2045 are aligned with the reduction targets for statewide emissions levels established in State law, including the 2030 target set forth in Senate Bill (SB) 32 and the 2045 target set forth in Assembly Bill (AB) 1279:

- ▶ SB 32 (2016)
  - reduce statewide GHG emissions to 40% below 1990 levels by 2030.
- ▶ AB 1279 (2022):
  - achieve net zero GHG emissions statewide as soon as possible, but no later than 2045, and maintain net negative emissions thereafter; and
  - ensure that by 2045, statewide anthropogenic greenhouse gas emissions are reduced to at least 85% below the 1990 levels.

Both the BAU and legislative-adjusted BAU emissions forecasts were based on population and employment from the City's land use database and the California State University, Fullerton, Center for Demographic Research Orange County Projections. Population and employment are expected to increase by 21 and 28 percent, respectively, from 2019 to 2045. These growth factors were used to forecast emissions for most sectors. Additional information regarding the growth factors used for each sector is included in the following sections. Annual vehicle miles traveled (VMT) projections were developed using the origin-destination method using data from the Irvine Transportation Analysis Model (ITAM) Traffic Model 2021. Annual VMT by 2045 is projected to increase by 3.2 percent from 2019. VMT projections were used to scale emissions from the on-road transportation sector. Table 3 shows growth in population, employment, and annual VMT from 2019 to 2045.

**Table 3. City of Irvine Community Demographic and Vehicle Miles Traveled Forecasts**

Forecast Factor	2019	2030	2035	2040	2045
Population	291,124	317,246	329,119	340,993	352,866
Employment	250,954	280,541	293,989	307,438	320,886
Annual VMT	2,910,428,375	2,950,103,309	2,968,137,370	2,986,171,431	3,004,205,493

Notes: VMT = vehicle miles traveled.

Source: City of Irvine 2021; California State University, Fullerton 2018.

Table 4 shows baseline emissions in 2019 and BAU emissions forecasts for 2030, 2035, 2040, and 2045. Results for 2035 and 2040 were derived from the results for 2030 and 2045 using linear interpolation.

**Table 4. City of Irvine Community GHG Emissions Inventory and BAU Forecasts (MTCO<sub>2e</sub>)**

Sector	2019	2030	2035	2040	2045
On-Road Transportation	1,140,206	1,155,749	1,162,814	1,169,879	1,176,944
Nonresidential Building Energy	550,138	549,886	576,246	602,607	628,967
Residential Building Energy	291,405	298,338	309,504	320,670	331,836
Solid Waste	160,626	175,038	181,590	188,141	194,692
Off-Road Vehicles and Equipment	68,756	76,077	82,144	88,210	94,276
Water Supply	30,798	43,202	44,819	46,435	48,052
Wastewater Treatment	5,665	6,159	6,395	6,631	6,866
<b>Total</b>	<b>2,247,593</b>	<b>2,304,450</b>	<b>2,363,511</b>	<b>2,422,573</b>	<b>2,481,634</b>
Percent Change from 2019 Levels	—	3%	5%	8%	10%

Notes: Total may not sum exactly due to independent rounding. BAU = business-as-usual; GHG = greenhouse gas; MTCO<sub>2e</sub> = metric tons of carbon dioxide equivalent.

Source: Ascent Environmental 2023.

Legislative-adjusted BAU emissions forecasts were prepared using the same demographic and VMT data that were used for the BAU forecasts, while accounting for regional, State, and federal laws and regulations that would affect local emissions. These forecasts provide the City with an understanding of future community emissions to inform the identification of emissions reduction measures developed to meet GHG targets. A summary of the legislative reductions applied is provided in Table 5.

**Table 5. Legislative Reductions Summary**

Source	Legislative Reduction	Description	Sectors Applied
Regional	Orange County Power Authority (OCPA)	In the forecast years (i.e. all future years after 2019), approximately 62 percent of City of Irvine customers will take service on OCPA’s Renewable Choice plan (100 percent renewable), 15 percent on the Smart Choice Plan (69 percent renewable), and 1 percent on the Basic Choice plan (38 percent renewable). In total, this represents 77 percent of City of Irvine customers being served by OCPA, with the remaining 23 percent served by Southern California Edison. (Kramer 2023 and City of Irvine 2023: 2). Totals may not sum exactly due to independent rounding.	Building Energy
State	California’s Building Energy Efficiency Standards (2022 Title 24, Part 6)	Effective January 1, 2023, requires new residential and nonresidential buildings in California to comply with energy efficiency standards established by CEC. The 2022 standards establish energy performance requirements that encourage energy efficient approaches to building decarbonization by emphasizing electric heat pumps for space heating and water heating and extending the benefits of photovoltaic and battery storage systems and other demand flexible technology to work in combinations with heat pumps.	Building Energy
State	IRP (Integrated Resource Planning)	California Public Utilities Commission proceeding requiring California energy utilities to submit resource plans that reduce their carbon emissions below their share of 38 million metric tons (MMT) of total statewide electric sector emissions by 2030 and 30 MMT by 2035 (CPUC 2022: 8). <sup>1</sup>	Building Energy, Transportation
State	SB 100	Requires that all retail electricity sold in California must come from renewable or zero-carbon resources by 2045.	Building Energy, Transportation
State	SB 1020 (Clean Energy, Jobs, and Affordability Act of 2022)	Requires that eligible renewable energy resources and zero-carbon resources supply 90% of all retail sales of electricity to California end-use customers by December 31, 2035, 95% of all retail sales of electricity to California end-use customers by December 31, 2040, 100% of all retail sales of electricity to California end-use customers by December 31, 2045, and 100% of electricity procured to serve all state agencies by December 31, 2035.	Building Energy
State	Advanced Clean Car Standards I and II	Requires all new passenger cars, trucks and SUVs sold in California to meet increasingly stringent requirements regarding zero emissions technologies and emissions standards.	On-Road Vehicles
State	Truck and Bus Regulation	Requires diesel trucks and buses that operate in California to be upgraded to reduce GHG emissions.	On-Road Vehicles
Federal	Fuel Efficiency Standards for Medium- and Heavy-Duty Vehicles	Establishes fuel efficiency standards for medium- and heavy-duty engines and vehicles.	On-Road Vehicles
Federal	EPA Off-Road Compression-Ignition Engine Standards	Establishes standards for phasing of EPA diesel engine tiers for off-road compression-ignition equipment.	Off-Road Vehicles and Equipment

Notes: CAFE = Corporate Average Fuel Economy; CEC = California Energy Commission; EPA = U.S. Environmental Protection Agency; GHG = greenhouse gas; OCPA = Orange County Power Authority; SB = Senate Bill.

Source: Ascent Environmental in 2023.

<sup>1</sup> IRP also requires that utilities submit a second, lower-carbon resource plan to meet statewide carbon goals. This second plan uses targets of 30 and 25 MMT in 2030 and 2035, respectively. However, this analysis uses the 38 MMT in 2030 and 30 MMT in 2035 plan, as stated in Table 5, as a more conservative estimate of possible electric sector emissions reductions.

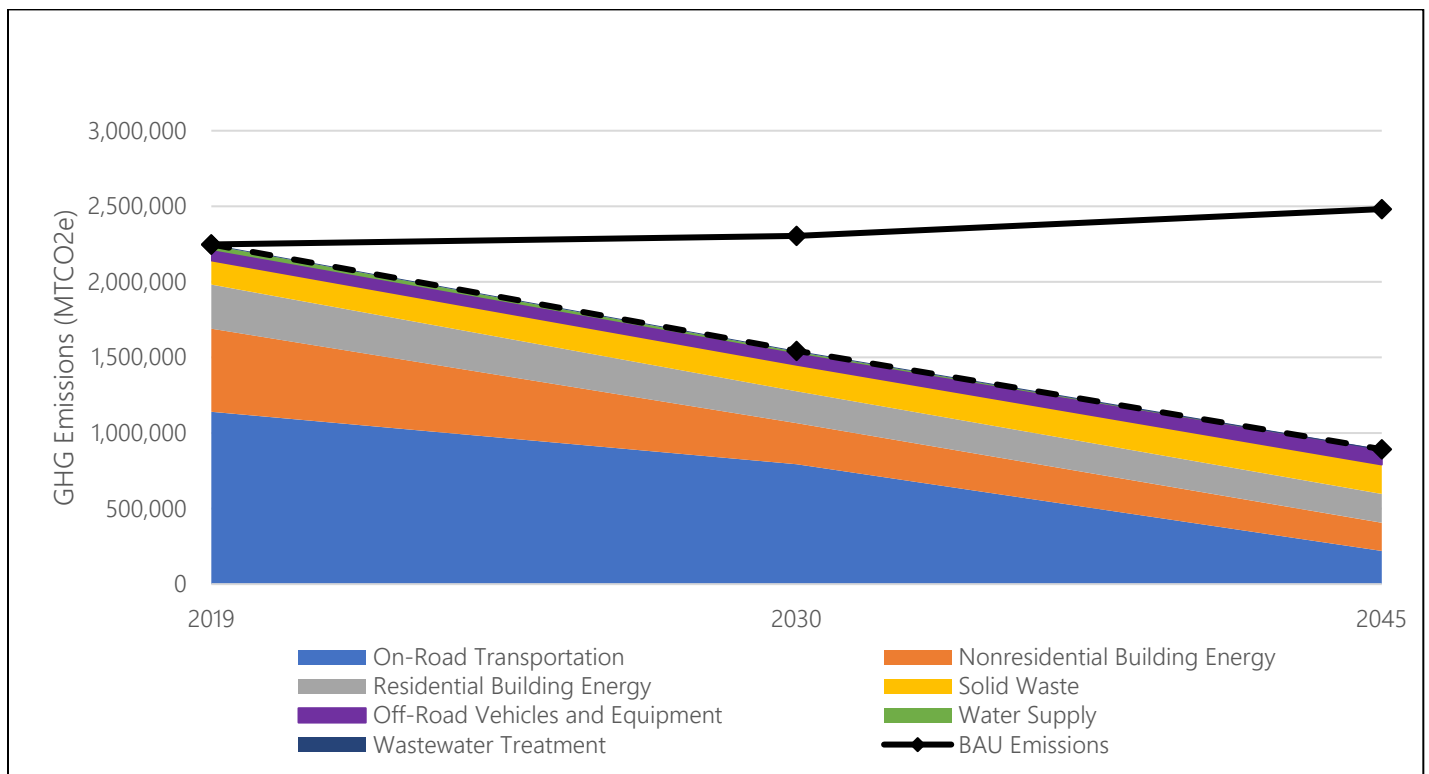
The city’s legislative-adjusted BAU emissions would decrease by approximately 60 percent between 2019 and 2045, as shown below in Table 6 and Figure 3. Results for 2035 and 2040 were derived from the results for 2030 and 2045 using linear interpolation. Figure 3 also shows the emissions trend that would occur without anticipated legislative reductions, accounting only for population, employment, and VMT changes (i.e., BAU emissions). Without the legislative reductions, emissions would be approximately 178 percent higher in 2045 compared to 2045 emissions levels in the legislative-adjusted BAU forecast. Emissions forecasts for each sector are discussed in detail in the following sections.

**Table 6. City of Irvine Community GHG Emissions Inventory and Legislative-Adjusted BAU Forecasts (MTCO<sub>2</sub>e)**

Sector	2019	2030	2035	2040	2045
On-Road Transportation	1,140,206	793,628	602,306	410,984	219,662
Nonresidential Building Energy	550,138	271,904	243,504	215,105	186,705
Residential Building Energy	291,405	210,707	203,991	197,276	190,561
Solid Waste	160,626	175,038	181,590	188,141	194,692
Off-Road Vehicles and Equipment	68,756	76,077	82,144	88,210	94,276
Water Supply	30,798	9,973	6,649	3,324	0
Wastewater Treatment	5,665	6,173	6,399	6,625	6,851
<b>Total</b>	<b>2,247,593</b>	<b>1,543,501</b>	<b>1,326,583</b>	<b>1,109,665</b>	<b>892,747</b>
Percent Change from 2019 Levels	—	-31%	-41%	-51%	-60%

Notes: Total may not sum exactly due to independent rounding. BAU = business-as-usual; GHG = greenhouse gas; MTCO<sub>2</sub>e = metric tons of carbon dioxide equivalent.

Source: Ascent Environmental 2023.



**Figure 3 City of Irvine Community GHG Emissions Inventory and Forecasts**

## 2.1.1 Building Energy

### BUILDING ENERGY ASSUMPTIONS

Building energy emissions in the city result directly from onsite combustion of natural gas and indirectly from electricity consumption. The combustion of fossil fuels (i.e., diesel, liquid propane gas [LPG], and natural gas) in backup generators also contributes to the city’s building energy emissions. Southern California Edison (SCE) is the electricity provider and Southern California Gas Company (SoCalGas) is the natural gas provider in the city. Orange County Power Authority (OCPA) is a community choice aggregation agency established to source clean and renewable electricity in Orange County including the City of Irvine.

#### Electricity Emissions Factors

Emissions factors for electricity vary depending on the utility (SCE or OCPA), the carbon content of the different portfolios that each utility offers its customers, and year. To calculate City’s overall electric emissions factor for a given year, a weighted average of OCPA emissions and SCE emissions was taken, accounting for participation rates and portfolio offerings across those two utilities shown in Table 5 of this memorandum. This weighted average emissions factor was then applied to all electric usage. Table 7 below shows how this calculation was performed.

**Table 7: Calculation of Weighted Emissions Electric Emissions Factor**

Year	Participation rates by utility and power portfolio					MT CO <sub>2</sub> e / MWh by utility and power portfolio				
	SCE	OCPA Basic	OCPA Smart	OCPA 100%	Total	SCE	OCPA Basic	OCPA Smart	OCPA 100%	Weighted Average
2019	100%	0%	0%	0%	100%	0.208	NA	NA	NA	0.208
2030	23%	1%	15%	62%	100%	0.141	0.244	0.094	0	0.048
2045	23%	1%	15%	62%	100%	0	0	0	0	0

Notes: Total may not sum exactly due to independent rounding. MTCO<sub>2</sub>e = metric tons of carbon dioxide equivalent. MWh = megawatt-hour. NA = Not Applicable.

Source: Ascent Environmental 2023.

SCE’s emissions factor for 2019 was derived from its Power Content Label, which shows 16.1 percent natural gas and 32.6 percent from unspecified sources of power (unspecified power is electricity that has been purchased through open market transactions and is not traceable to a specific generation source: SCE 2019). In total, this implies that SCE’s portfolio is 48.7 percent carbon-emitting power.<sup>2</sup> This 48.7 percent was then multiplied by California Air Resources Board (CARB) emissions factor for Mandatory Reporting of Greenhouse Gases (MRR) of 0.428 MT CO<sub>2</sub>e/MWh, which reflects the emissions from unspecified power, and additionally is similar to the emission factor from an average single-cycle natural gas power plant (CARB 2018: 16).

Emissions factors for 2030 were derived from SCE and OCPA’s IRP electricity resource plans as described in Table 5. In the case of SCE, its 2030 IRP plan shows 67 percent GHG-free power (SCE 2022). This corresponds to 33 percent emitting power from natural gas or unspecified power and thus 0.141 MT CO<sub>2</sub>e/MWh based on the CARB emissions factor of 0.428 MT CO<sub>2</sub>e/MWh shown above.

<sup>2</sup> This memorandum uses “carbon-emitting power” as a shorthand to refer to the sum of power generated by natural gas-fired generators and unspecified power.



In the case of OCPA, a separate emission factor for each portfolio (Basic, Smart, and 100%) was calculated. A percentage of carbon-free power for each portfolio was estimated by taking OCPA’s overall ratio of carbon-free energy to renewable energy in 2030 in its IRP plan (113 percent, per OCPA 2022) and multiplying that ratio by each portfolio’s percentages of renewable content. This percentage of carbon-free power was then subtracted from 100 percent to yield a percentage of carbon-emitting power. Finally, this percent of carbon-emitting power was multiplied by 0.428 MT CO<sub>2</sub>e/MWh to yield an emissions factor. Table 8 below shows the results of this calculation.

**Table 8: Derivation of 2030 OCPA emissions factors**

	Basic	Smart	100% Renewable
Percent Renewable	38%	69%	100%
Percent Carbon-Free	43%	78%	100%
Percent Carbon-Emitting Power	57%	22%	0%
Emissions Factor (MT CO <sub>2</sub> e / MWh)	0.244	0.094	0

Source: Ascent Environmental 2023.

### Natural Gas Emissions Factors

Natural gas emissions are based on emissions factors obtained from The Climate Registry’s (TCR’s) 2020 Default Emission Factors, which are estimated to be 11.7 pounds of carbon dioxide equivalent per therm (lb CO<sub>2</sub>e/therm) for stationary combustion in buildings and 11.6 lb CO<sub>2</sub>e/therm for electricity generation in backup generators (TCR 2020). Emissions factors associated with natural gas combustion are not anticipated to change over time, as there are no legislative actions that would reduce the carbon intensity of natural gas.

### Diesel Emissions Factors

Emissions from diesel fuel used to power backup generators are based on emissions factors from TCR, which are estimated to be 22.6 pounds of carbon dioxide equivalent per gallon (lb CO<sub>2</sub>e/gal). Emissions factors associated with diesel combustion are not anticipated to change over time, as there are no legislative actions that would reduce the carbon intensity of diesel.

### Gasoline Emissions Factors

Emissions from gasoline fuel used to power backup generators are based on emissions factors also from TCR, which are estimated to be 19.3 lb CO<sub>2</sub>e/gal. Emissions factors associated with gasoline combustion are not anticipated to change over time, as there are no legislative actions that would reduce the carbon intensity of gasoline.

### Energy Efficiency and Fuel Source

Future energy use was adjusted to reflect increased emissions-intensity stringency under California’s Building Energy Efficiency Standards (California Code of Regulations Title 24 Part 6, hereafter referred to as “Title 24”). Title 24 standards apply to new residential and nonresidential construction. The 2019 Title 24 standards apply to projects constructed after January 1, 2020, and the 2022 Title 24 standards will apply after January 1, 2023. To estimate adjusted future energy consumption resulting from Title 24 requirements in new construction, electricity- and natural gas-specific adjustment factors were calculated using the difference in the average energy use in residential and nonresidential buildings between those built to 2019 Title 24 standards and those built to 2022 Title 24 standards. Adjustment factors were calculated using data available from the California Energy Commission (CEC) that were developed for the 2022 Title 24 standards. In addition to accounting for Title 24 requirements by land use type (i.e., residential and nonresidential), CEC also developed estimates for energy usage rates by climate zone, and the city’s climate zone (Zone 8) was used for the residential buildings analysis. Climate zone-specific data for nonresidential buildings were unavailable; therefore, nonresidential adjustment factors relied on statewide averages.

The adjustment factors (specific to both building type and energy type) were applied to the BAU growth in energy use to estimate the energy consumption and associated GHG emissions of future development with legislative adjustments. It is important to note that although average electricity use in new residential buildings is anticipated to rise (due to an increase in electrical demand associated with electric appliances installed instead of natural gas appliances), emissions from new residential buildings are expected to be lower than they would be under 2019 Title 24 as a result of overall lower building emissions intensities (due to lower emissions factors associated with electricity compared to natural gas).

## BUILDING ENERGY RESULTS

Emissions from future electricity, natural gas, and backup generator (i.e., diesel, natural gas, and gasoline) use were estimated by multiplying anticipated energy use by forecasted emissions factors. Future energy use was forecasted in two parts. First, energy use was scaled by population and employment growth factors detailed above. Second, energy emissions factors were adjusted as described in the previous section. Natural gas, diesel, and gasoline emissions factors were not adjusted, as the emissions intensity of these energy sources is anticipated to stay constant. The assumptions for future electricity emissions factors are described below. Table 9 summarizes the scaling factors and legislative reductions used to forecast building use by energy type.

**Table 9. Building Energy Emissions Forecast Methods by Energy Type**

Energy Type	Forecast Methods	
	Scale Factor	Applied Legislative Reductions
Electricity	Scaled by population growth for residential building energy; scaled by employment growth for nonresidential building energy.	Emissions factors derived from SCA and OCPA IRP plans. Accounts for Title 24 energy efficiency gains in new construction based on the best available data for average building energy efficiency.
Natural Gas		Accounts for Title 24 energy efficiency gains in new construction based on the best available data for average building energy efficiency.
Backup Generators	Scaled by employment growth.	None.

Notes: OCPA = Orange County Power Authority; RPS = Renewables Portfolio Standard; SCE = Southern California Edison.

Source: Ascent Environmental 2023.

## RESIDENTIAL BUILDING ENERGY

Between 2019 and 2045, emissions from residential building energy would decrease by approximately 35 percent from 291,405 to 190,561 MTCO<sub>2e</sub> with legislative adjustments, despite overall population growth of approximately 25 percent over the same time. Table 10 shows the 2019 inventory and legislative-adjusted BAU forecasted emissions from the residential building energy sector by energy type for 2030, 2035, 2040, and 2045. Results for 2035 and 2040 were derived from the results for 2030 and 2045 using linear interpolation.

**Table 10. Residential Building Energy GHG Emissions Inventory and Legislative-Adjusted BAU Emissions Forecasts (Annual MTCO<sub>2e</sub>)**

Energy Type	2019	2030	2035	2040	2045
Electricity	116,584	29,451	19,634	9,817	0
Natural Gas	174,820	181,255	184,357	187,459	190,561
<b>Total</b>	<b>291,405</b>	<b>210,707</b>	<b>203,991</b>	<b>197,276</b>	<b>190,561</b>

Notes: Totals may not sum exactly due to independent rounding. BAU = business-as-usual; GHG = greenhouse gas; MTCO<sub>2e</sub> = metric tons of carbon dioxide equivalent.

Source: Ascent Environmental 2023.

## NONRESIDENTIAL BUILDING ENERGY

Between 2019 and 2045, emissions from nonresidential building energy would decrease by approximately 66 percent from 550,139 to 187,371 MTCO<sub>2e</sub> with legislative adjustments, despite overall employment growth of approximately 33 percent over the same time. Increased natural gas and backup generator emissions would be offset by reduced emissions from electricity in 2045. Table 11 shows the 2019 inventory and legislative-adjusted BAU forecasted emissions for the nonresidential building energy sector by energy type for 2030, 2035, 2040, and 2045. Results for 2035 and 2040 were derived from the results for 2030 and 2045 using linear interpolation.

**Table 11. Nonresidential Building Energy GHG Emissions Inventory and Legislative-Adjusted BAU Forecasts (Annual MTCO<sub>2e</sub>)**

Energy Type	2019	2030	2035	2040	2045
Electricity	385,130	98,767	65,845	32,922	0
Natural Gas	160,501	170,317	174,705	179,092	183,480
Backup Generators	4,507	3,401	3,564	3,728	3,891
<b>Total</b>	<b>550,139</b>	<b>272,486</b>	<b>244,114</b>	<b>215,743</b>	<b>187,371</b>

Notes: Totals may not sum exactly due to independent rounding. BAU = business-as-usual; GHG = greenhouse gas; MTCO<sub>2e</sub> = metric tons of carbon dioxide equivalent.

Source: Ascent Environmental 2023.

## 2.1.2 Transportation

### ON-ROAD TRANSPORTATION

Between 2019 and 2045, GHG emissions from on-road vehicles would decrease by approximately 81 percent from 1,140,206 to 219,662 MTCO<sub>2e</sub>, accounting for an increase in VMT of approximately 4 percent, and future vehicle emissions factors modeled in California Air Resources Board's (CARB's) Emissions FACTor (EMFAC2021) model. VMT projections were developed using the origin-destination method and data from the ITAM model. With respect to the legislative adjustments included in this forecast, State and federal laws and regulations incorporated in the on-road transportation sector include the Pavley Clean Car Standards Advanced Clean Car I and II (ACC I and II) Standards, and fuel efficiency standards for medium- and heavy-duty vehicles. Pavley Clean Car Standards and fuel efficiency standards are included in EMFAC2021's emissions factor estimates and forecasts. Vehicle fleet assumptions were adjusted to account for the effect of Advanced Clean Car II (ACC II) Standards, including assumed new sales of battery electric vehicles and plug-in hybrids (CARB 2022: 5). The Low Carbon Fuel Standard was excluded in EMFAC2021 forecasts because the emissions benefits originate from upstream fuel production and do not directly reduce vehicle tailpipe emissions that affect the city's GHG emissions forecasts. Table 12 summarizes the scaling factors and legislative reductions used to forecast on-road transportation emissions.

**Table 12. On-Road Transportation Emissions Forecast Methods**

Source	Forecast Methods	
	Scale Factor	Applied Legislative Reductions
On-Road Transportation	Scaled by VMT estimates provided by Iteris.	EMFAC2021 forecasts vehicle fleet distributions by vehicle type and the emissions factors anticipated for each vehicle category based on both vehicle emissions testing and approved legislative reductions. EMFAC2021's forecasts incorporate the effects of federal standards and fuel efficiency standards for medium- and heavy-duty vehicles, as well as truck and bus regulations. Vehicle fleet assumptions were adjusted to account for the effect of Advanced Clean Car II (ACC II) Standards, including assumed new sales of battery electric vehicles and plug-in hybrids

Notes: ACC II= Advanced Clean Cars CAFE = Corporate Average Fuel Economy; EMFAC2021 = California Air Resources Board's Emission Factor 2021 model.

Source: Ascent Environmental 2022.

Table 13 shows the 2019 inventory and legislative-adjusted BAU forecasted emissions from on-road transportation for 2030, 2035, 2040, and 2045.

**Table 13. On-Road Transportation GHG Emissions Inventory and Legislative-Adjusted BAU Forecasts (Annual MTCO<sub>2e</sub>)**

Source	2019	2030	2035	2040	2045
On-Road Transportation	1,140,206	793,628	602,306	410,984	219,662

Notes: BAU = business-as-usual; GHG = greenhouse gas; MTCO<sub>2e</sub> = metric tons of carbon dioxide equivalent.

Source: Ascent Environmental 2023.

## OFF-ROAD VEHICLES AND EQUIPMENT

Between 2019 and 2045, emissions associated with off-road vehicles and equipment used in the city would increase by 37 percent from 68,756 to 94,276 MTCO<sub>2e</sub>, with legislative adjustments applied and overall growth in various demographics. Emissions were obtained primarily from CARB's latest off-road emissions model, OFFROAD2021, as well as from CARB's OFFROAD2007 model. With respect to the legislative adjustments in the off-road vehicle sector, OFFROAD2021 was used, which incorporates regulatory actions such as reformulated fuels and more stringent emissions standards. However, some off-road vehicle and equipment sources that are included in the OFFROAD2007 model are excluded from OFFROAD2021. For these sectors, emissions were obtained from OFFROAD2007. In addition, OFFROAD2021 provides CO<sub>2</sub> emissions but does not provide emissions from CH<sub>4</sub> and N<sub>2</sub>O. Ratios of CH<sub>4</sub> and N<sub>2</sub>O to CO<sub>2</sub> reported in OFFROAD2007 were calculated and applied to CO<sub>2</sub> data from OFFROAD2021 to calculate CH<sub>4</sub> and N<sub>2</sub>O emissions, as recommended by CARB.

Orange County-level emissions from off-road vehicles and equipment were scaled using changes in city-specific demographic factors. Table 12 summarizes the scaling factors and legislative reductions used to forecast off-road vehicle and equipment emissions.

**Table 12. Off-Road Vehicles and Equipment Forecast Methods by Source**

Source	Forecast Methods	
	Scale Factor	Applied Legislative Reductions
Construction and Mining	Service Population	OFFROAD2021 emissions factor considerations include EPA off-road compression-ignition engine standards implementation schedule.
Entertainment Equipment	Employment	
Industrial Equipment	Employment	
Lawn and Garden Equipment	Population	
Light Commercial Equipment	Employment	
Portable Equipment	Employment	
Recreational Equipment	Population	
Transport Refrigeration Units	Service Population	

Notes: EPA = U.S. Environmental Protection Agency; OFFROAD2021 = California Air Resources Board's OFFROAD2021 model.

Source: Ascent Environmental 2022.

Table 13 shows the 2019 inventory and legislative-adjusted BAU forecasted emissions from the off-road vehicles and equipment sector for 2030, 2035, 2040, and 2045.

**Table 13. Off-Road Vehicles and Equipment GHG Emissions Inventory and Legislative-Adjusted BAU Forecasts (Annual MTCO<sub>2e</sub>)**

Source	2019	2030	2035	2040	2045
Construction and Mining	19,536	21,614	23,051	24,668	26,519
Entertainment Equipment	267	295	317	341	368
Industrial Equipment	25,201	27,892	29,972	32,233	34,753
Lawn and Garden Equipment	708	776	822	874	935
Light Commercial Equipment	5,330	5,899	6,339	6,817	7,350
Portable Equipment	14,647	16,212	17,421	18,734	20,199
Recreational Equipment	267	293	310	329	352
Transport Refrigeration Units	2,799	3,097	3,303	3,534	3,800
<b>Total</b>	<b>68,756</b>	<b>76,077</b>	<b>81,534</b>	<b>87,531</b>	<b>94,276</b>

Notes: Totals may not sum exactly due to independent rounding. BAU = business-as-usual; GHG = greenhouse gas; MTCO<sub>2e</sub> = metric tons of carbon dioxide equivalent.

Source: Ascent Environmental 2023.

### 2.1.3 Solid Waste

Between 2019 and 2045, solid waste emissions generated from community activities in the city would increase by approximately 21 percent from 160,626 to 194,692 MTCO<sub>2e</sub>, accounting for overall population growth of approximately 25 percent over the same time. Solid waste sector emissions include CH<sub>4</sub> emissions from the decay of waste generated annually, which were scaled by population growth within the city between 2019 and 2045. No additional legislative reductions could be applied to this sector, so legislative-adjusted BAU emissions are equivalent to BAU emissions. Table 14 shows the 2019 inventory and legislative-adjusted BAU forecasted emissions from the solid waste sector for 2030, 2035, 2040, and 2045.

**Table 14. Solid Waste GHG Emissions Inventory and Legislative-Adjusted BAU Forecasts (Annual MTCO<sub>2</sub>e)**

Source	2019	2030	2035	2040	2045
Community-Generated Solid Waste	160,626	175,038	181,590	188,141	194,692

Notes: BAU = business-as-usual; GHG = greenhouse gas; MTCO<sub>2</sub>e = metric tons of carbon dioxide equivalent.

Source: Ascent Environmental 2023.

## 2.1.4 Water Supply

Between 2019 and 2045, water supply emissions generated from community activities in the city would be reduced to zero due to 100 percent RPS by 2045. It was assumed that certain proportions of water used within the city was extracted, conveyed, treated, and distributed within and outside the city boundary. For the water supply from local sources within the city, the electricity usage associated with extracting, conveying, treating, and distributing water is captured in the building energy sector because these activities take place within the city. Therefore, the electricity usage and emissions associated with extracting, conveying, treating, and distributing water from outside the city boundary was applied to the water sector. Electricity usage associated with water consumption is subject to RPS targets, pursuant to SB 100 requirements. Table 15 summarizes the scaling factor and legislative reduction used to forecast water supply emissions.

**Table 15. Water Supply Forecast Methods and Legislative Reductions by Source**

Source	Forecast Methods	
	Scale Factor	Applied Legislative Reductions
Water Consumption	Scaled by population growth.	Assumes electricity use for extraction, conveyance, distribution, and treatment follows the 2045 carbon-free electricity requirements.

Source: Ascent Environmental in 2022.

Table 16 shows the 2019 inventory and legislative-adjusted BAU forecasted emissions from the water supply sector for 2030, 2035, 2040, and 2045. Weighted average electric emissions factors shown in Table 7 were used to derive these figures. Results for 2035 and 2040 were derived from the results for 2030 and 2045 using linear interpolation.

**Table 16. Water Supply GHG Emissions Inventory and Legislative-Adjusted BAU Forecasts (Annual MTCO<sub>2</sub>e)**

Source	2019	2030	2035	2040	2045
Water Supply	30,798	9,973	6,649	3,324	0

Notes: BAU = business-as-usual; MTCO<sub>2</sub>e/year = metric tons of carbon dioxide equivalent per year.

Source: Ascent Environmental in 2023.

## 2.1.5 Wastewater Treatment

Between 2019 and 2045, community wastewater treatment emissions would increase by 21 percent from 5,665 to 6,851 MTCO<sub>2</sub>e. This change reflects an increase in wastewater generation resulting from population growth within the city of approximately 21 percent over the same time. Wastewater treatment-related emissions are generated from centralized wastewater treatment plants (WWTPs) providers for the city. Table 17 shows the 2019 inventory and legislative-adjusted BAU forecasted emissions from wastewater treatment sources for 2030, 2035, 2040, and 2045.

**Table 17. Wastewater Treatment GHG Emissions Inventory and Legislative-Adjusted BAU Forecasts (Annual MTCO<sub>2e</sub>)**

Source	2019	2030	2035	2040	2045
Centralized WWTPs	5,665	6,173	6,399	6,625	6,851

Notes: BAU = business-as-usual; GHG = greenhouse gas; MTCO<sub>2e</sub> = metric tons of carbon dioxide equivalent; WWTP = wastewater treatment plant.

Source: Ascent Environmental 2023.

## 2.2 MUNICIPAL OPERATIONS FORECAST RESULTS

Estimated municipal operations BAU emissions forecasts were based on predicted growth in City employment between 2019 and 2045. Municipal employment is expected to increase by 21 percent between 2019 and 2045. Change in municipal employment was the sole factor used to forecast BAU emissions for 2030, 2035, 2040, and 2045 for all sectors in the municipal operations inventory. Table 18 shows 2019 municipal employment and anticipated change in municipal employment for the forecast years.

**Table 18. City of Irvine Municipal Operations Demographic Forecasts**

Forecast Factor	2019	2030	2035	2040	2045
City Employment	1,586	1,728	1,793	1,858	1,922

Source: Ascent Environmental 2023.

Table 19 shows 2019 baseline emissions and BAU emissions forecasts for 2030, 2035, 2040, and 2045.

**Table 19. City of Irvine Municipal Operations GHG Emissions Inventory and BAU Forecasts (Annual MTCO<sub>2e</sub>)**

Sector	2019	2030	2035	2040	2045
Buildings and Facilities	12,003	13,080	13,570	14,059	14,549
Employee Commute	3,032	3,304	3,427	3,551	3,674
Wastewater Treatment	1,144	1,246	1,386	1,340	1,386
Vehicle Fleet	1,127	1,228	1,274	1,320	1,366
Streetlights and Traffic Signals	1,097	1,195	1,240	1,285	1,329
Solid Waste	159	174	180	187	193
Water Supply	4	5	5	5	5
<b>Total</b>	<b>18,566</b>	<b>20,232</b>	<b>21,083</b>	<b>21,747</b>	<b>22,504</b>
<i>Percent Change from 2019 Levels</i>	—	9%	14%	17%	21%

Notes: Total may not sum exactly due to independent rounding. BAU = business-as-usual; GHG = greenhouse gas; MTCO<sub>2e</sub> = metric tons of carbon dioxide equivalent.

Source: Ascent Environmental 2023.

Legislative-adjusted BAU emissions forecasts provide an assessment of how the City's municipal operations emissions would change over time without further action from the City. The legislative-adjusted BAU forecast accounts for laws and regulations at the regional, State, and federal levels that would affect emissions, such as regulatory requirements to increase vehicle fuel efficiency and building energy efficiency. These forecasts provide the City with the information needed to focus efforts on certain municipal operations emissions sectors and sources that have the most GHG reduction opportunities. Annual municipal employment change was the sole scaling factor applied to all sectors. A summary of legislative reductions applied is provided in Table 5. Municipal operations legislative-adjusted BAU emissions would decrease by approximately 76 percent between 2019 and 2045, as shown in Table 20 and Figure 4.

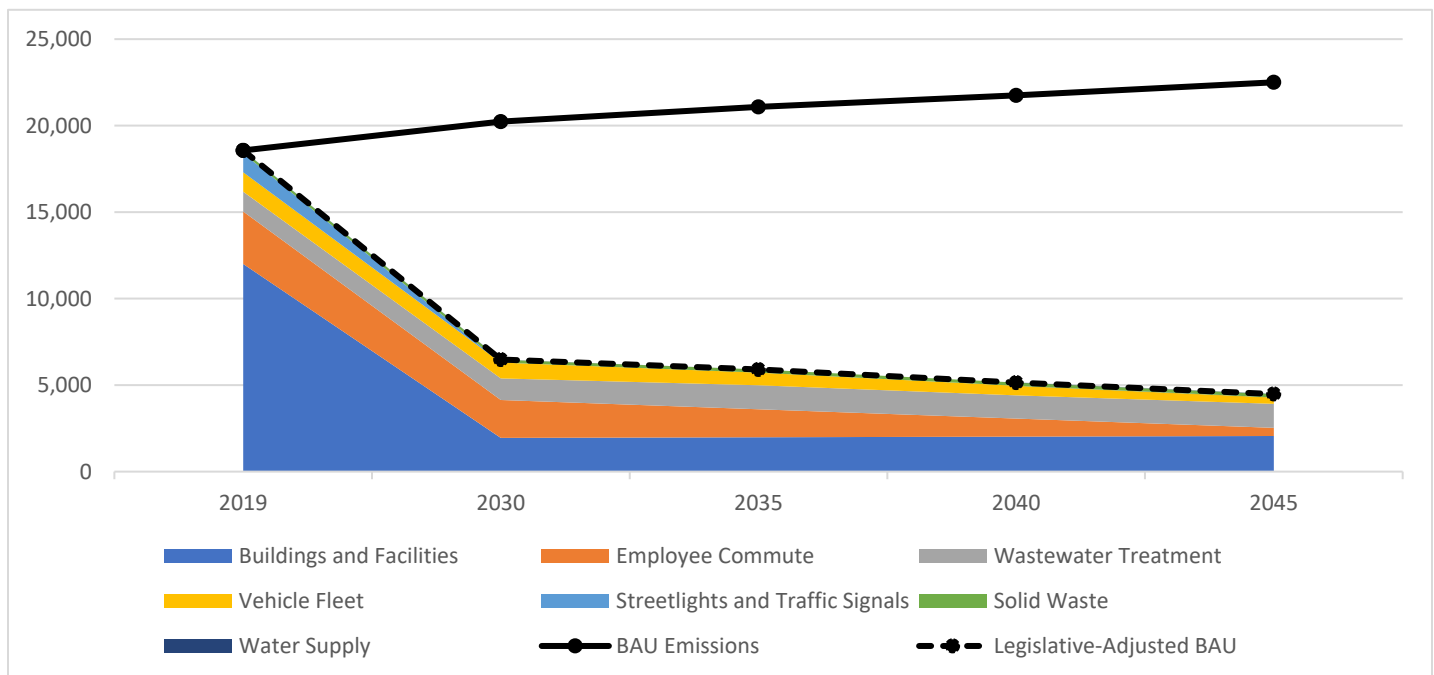
**Table 20. City of Irvine Municipal Operations GHG Emissions Inventory and Legislative-Adjusted BAU Forecasts (Annual MTCO<sub>2e</sub>)**

Sector	2019	2030	2035	2040	2045
Buildings and Facilities	12,003	1,950	1,987	2,023	2,060
Employee Commute	3,032	2,192	1,618	1,045	471
Wastewater Treatment	1,144	1,246	1,386	1,340	1,386
Vehicle Fleet	1,127	912	732	552	372
Streetlights and Traffic Signals	1,097	0	0	0	0
Solid Waste	159	174	180	187	193
Water Supply	4	2	2	1	0
<b>Total</b>	<b>18,566</b>	<b>6,477</b>	<b>5,905</b>	<b>5,147</b>	<b>4,482</b>
<i>Percent Change from 2019 Levels</i>		<b>-65%</b>	<b>-68%</b>	<b>-72%</b>	<b>-76%</b>

Notes: Total may not sum exactly due to independent rounding. BAU = business-as-usual; GHG = greenhouse gas; MTCO<sub>2e</sub> = metric tons of carbon dioxide equivalent.

Source: Ascent Environmental 2023.

Figure 4 also shows the emissions trend that would occur without anticipated legislative reductions, accounting only for changes in municipal employment (i.e., BAU emissions). Without the legislative reductions, emissions would be approximately 237 percent higher in 2045 compared to the legislative-adjusted BAU forecast. Emissions forecasts for each sector are discussed in detail in the following sections.



**Figure 4** City of Irvine Municipal Operations GHG Emissions Inventory and Forecasts



## 2.2.1 Buildings and Facilities Energy

Emissions from future electricity, natural gas, and backup generator use in City buildings and facilities were estimated by multiplying anticipated energy use by forecasted emissions factors. Future energy use was forecasted in two parts, as described in Section 2.1.1. Table 21 summarizes the legislative reductions used to forecast buildings and facilities emissions by energy type.

**Table 21. Buildings and Facilities Energy Emissions Forecast Legislative Reductions by Energy Type**

Energy Type	Applied Legislative Reductions
Electricity	OCPA’s carbon-free option was applied to OCPA’s electricity emissions factors. Accounts for 2022 Building Energy Efficiency Standards Title 24 energy efficiency gains in new construction based on the best available data for average building energy efficiency.
Natural Gas	Accounts for 2022 Building Energy Efficiency Standards Title 24 energy efficiency gains in new construction based on the best available data for average building energy efficiency.
Backup Generators	None.

Notes: OCPA = Orange County Power Authority.

Source: Ascent Environmental 2022.

Between 2019 and 2045, emissions from electricity, natural gas, and backup generators from municipal buildings and facilities would decrease by approximately 83 percent from 12,003 to 2,060 MTCO<sub>2</sub>e, accounting for legislative adjustments and municipal employment changes. This change reflects increases in emissions from natural gas and backup generators combined with the City’s automatic enrollment in OCPA’s carbon-free option. Table 22 shows the 2019 inventory and legislative-adjusted BAU forecasted emissions for the municipal operations buildings and facilities energy sector by energy type for 2030, 2035, 2040, and 2045.

**Table 22. Buildings and Facilities Energy GHG Emissions Inventory and Legislative-Adjusted BAU Forecasts (Annual MTCO<sub>2</sub>e)**

Energy Type	2019	2030	2035	2040	2045
Electricity	10,138	0	0	0	0
Natural Gas	1,862	1,947	1,983	2,020	2,056
Backup Generators	3	3	3	3	4
<b>Total</b>	<b>12,003</b>	<b>1,950</b>	<b>1,987</b>	<b>2,023</b>	<b>2,060</b>

Notes: Totals may not sum exactly due to independent rounding. BAU = business-as-usual; GHG = greenhouse gas; MTCO<sub>2</sub>e = metric tons of carbon dioxide equivalent.

Source: Ascent Environmental 2023.

## ELECTRICITY EMISSIONS FACTORS

As a result of the electricity emissions factors to be decreased to zero by 2030, GHG emissions from electricity consumption in the buildings and facilities sector would also be zero through 2045 without additional City action. Electricity emissions factors and changes through 2045 are described in Section 2.1.1.

## NATURAL GAS EMISSIONS FACTORS

Natural gas emissions are based on data from TCR, as described in Section 2.1.1. Emissions factors associated with natural gas combustion are not anticipated to change over time, as there are no legislative actions that would reduce the energy intensity of natural gas.

## DIESEL EMISSIONS FACTORS

Emissions from diesel fuel used to power backup generators are based on emissions factors from TCR, as described in Section 2.1.1. Emissions factors associated with diesel combustion are not anticipated to change over time, as there are no legislative actions that would reduce the energy intensity of diesel.

### 2.2.2 Streetlights and Traffic Signals

Between 2019 and 2045, emissions from streetlights and traffic signals would be reduced to zero, accounting for legislative adjustments and employment reductions. This reflects lower electricity emissions factors related the City's automatic enrollment of municipal accounts in OCPA's carbon-free option. Table 23 summarizes the legislative reductions used to forecast streetlight and traffic signal emissions.

**Table 23. Streetlights and Facilities Emissions Forecast Legislative Reductions**

Source	Applied Legislative Reductions
Electricity	OCPA's carbon-free option was applied to OCPA's electricity emissions factors.

Notes: OCPA = Orange County Power Authority.

Source: Ascent Environmental 2022.

Table 24 shows the 2019 inventory and legislative-adjusted BAU forecasted emissions for the streetlights and traffic signals sector for 2030, 2035, 2040, and 2045.

**Table 24. Streetlights and Traffic Signals GHG Emissions Inventory and Legislative-Adjusted BAU Forecasts (Annual MTCO<sub>2e</sub>)**

Source	2019	2030	2035	2040	2045
Streetlights and Traffic Signals	1,097	0	0	0	0

Notes: BAU = business-as-usual; GHG = greenhouse gas; MTCO<sub>2e</sub> = metric tons of carbon dioxide equivalent.

Source: Ascent Environmental 2023.

### 2.2.3 Employee Commute

Between 2019 and 2045, GHG emissions from employee commutes would decrease by approximately 85 percent from 3,032 to 471 MTCO<sub>2e</sub>, accounting for future vehicle emissions factors modeled in CARB's EMFAC2021 model and municipal employment change. It was assumed that employees that commute to work all use light-duty vehicles. With respect to the legislative adjustments included in this forecast, State and federal laws and regulations incorporated in the employee commute sector include the Pavley Clean Car Standards and ACC II Standards. Pavley Clean Car Standards are already included in EMFAC2021's emissions factor estimates and forecasts. Additional calculations were performed to incorporate the effects of ACCII.

It should be noted that the Low Carbon Fuel Standard was excluded in EMFAC2021 forecasts because most of the emissions benefits originate from upstream fuel production and do not directly reduce emissions in the City's municipal operations GHG emissions forecasts. Table 25 summarizes the legislative reductions used to forecast employee commute emissions.

**Table 25. Employee Commute Forecast Legislative Reductions**

Source	Applied Legislative Reductions
Employee Commute	EMFAC2021 forecasts vehicle fleet distributions by vehicle type and the emissions factors anticipated for each vehicle category based on both vehicle emissions testing and approved legislative reductions. EMFAC2021's forecasts incorporate the effects of the CAFE standards. Separate calculations were performed to incorporate the effects of ACC II.

Notes: ACC II= Advanced Clelars II; CAFE = Corporate Average Fuel Economy; EMFAC2021 = California Air Resources Board's Emission FACTor 2021 model.

Source: Ascent Environmental 2022.

Table 26 shows the 2019 inventory and legislative-adjusted BAU forecasted emissions from municipal employee commutes for 2030, 2035, 2040, and 2045. Values for 2035 and 2040 were derived using linear interpolation.

**Table 26. Employee Commute GHG Emissions Inventory and Legislative-Adjusted BAU Forecasts (Annual MTCO<sub>2e</sub>)**

Source	2019	2030	2035	2040	2045
Employee Commute	3,032	2,192	1,618	1,045	471

Notes: BAU = business-as-usual; GHG = greenhouse gas; MTCO<sub>2e</sub> = metric tons of carbon dioxide equivalent.

Source: Ascent Environmental 2023.

## 2.2.4 Vehicle Fleet

Between 2019 and 2045, emissions associated with the City's municipal vehicle fleet would decrease by approximately 67 percent from 1,127 to 372 MTCO<sub>2e</sub>, accounting for legislative adjustments and municipal employment change. Vehicle fleet fuel consumption data (i.e., gallons of gasoline and diesel fuel) for 2019 were provided by the City for all City-owned vehicles and equipment. Because additional vehicle fleet data were unavailable, total emissions for gasoline and diesel fuel were estimated using emissions factors obtained from TCR. With respect to the legislative adjustments in the vehicle fleet sector, improvements in fuel efficiency reported by CARB's EMFAC2021 model, as described in Section 2.1.2, were applied to BAU emissions forecasts. Effects of ACCII standards were incorporated using calculations performed separately. Table 27 summarizes the legislative reductions used to forecast vehicle fleet emissions.

**Table 27. Vehicle Fleet Forecast Legislative Reductions**

Source	Applied Legislative Reductions
Vehicle Fleet	EMFAC2021 forecasts vehicle fleet distributions by vehicle type and the emissions factors anticipated for each vehicle category based on both vehicle emissions testing and approved legislative reductions. EMFAC2021's forecasts incorporate the effects of the CAFE standards. Additional calculations were performed to incorporate the effects of ACCII.

Notes: ACC II= Advanced Clean Cars II; CAFE = Corporate Average Fuel Economy; EMFAC2021 = California Air Resources Board's Emission FACTor 2021 model.

Source: Ascent Environmental 2022.

Table 28 shows the 2019 inventory and legislative-adjusted BAU forecasted emissions from the vehicle fleet sector by fuel source for 2030, 2035, 2040, and 2045. Values for 2035 and 2040 were derived using linear interpolation.

**Table 28. Vehicle Fleet GHG Emissions Inventory and Legislative-Adjusted BAU Forecasts (Annual MTCO<sub>2</sub>e)**

Source	2019	2030	2035	2040	2045
Gasoline	954	772	620	467	315
CNG	173	140	112	85	57
<b>Total</b>	<b>1,127</b>	<b>912</b>	<b>732</b>	<b>552</b>	<b>372</b>

Notes: Totals may not sum exactly due to independent rounding. BAU = business-as-usual; CNG = compressed natural gas; GHG = greenhouse gas; MTCO<sub>2</sub>e = metric tons of carbon dioxide equivalent.

Source: Ascent Environmental 2023.

## 2.2.5 Solid Waste

Between 2019 and 2045, municipal operations solid waste emissions would increase by approximately 11 percent from 159 to 193 MTCO<sub>2</sub>e, accounting for municipal employment change. No additional legislative reductions could be applied to this sector, so legislative-adjusted BAU emissions are equivalent to BAU emissions. Table 29 shows the 2019 inventory and legislative-adjusted BAU forecasted emissions from the municipal operations solid waste sector for 2030, 2035, 2040, and 2045.

**Table 29. Solid Waste GHG Emissions Inventory and Legislative-Adjusted BAU Forecasts (Annual MTCO<sub>2</sub>e)**

Source	2019	2030	2035	2040	2045
Solid Waste	159	174	180	187	193

Notes: BAU = business-as-usual; GHG = greenhouse gas; MTCO<sub>2</sub>e = metric tons of carbon dioxide equivalent.

Source: Ascent Environmental 2023.

## 2.2.6 Water Supply

Between 2019 and 2045, emissions from water supplied for municipal operations would be reduced to zero due to 100 percent RPS by 2045. For the water supply from local sources within the city, the electricity usage associated with extracting, conveying, treating, and distributing water is captured in the buildings and facilities energy sector because these activities take place within the city. Therefore, the electricity usage and emissions associated with extracting, conveying, treating, and distributing water from outside the city boundary was applied to the municipal water sector. Table 30 summarizes the legislative reductions used to forecast water supply emissions.

**Table 30. Water Supply Forecast Legislative Reductions**

Source	Applied Legislative Reductions
Water Consumption	RPS achieved to date and scheduled targets (i.e., 33 percent renewable by 2020, 60 percent renewable by 2030, 100 percent renewable by 2045) applied to SCE's, and State electricity emissions factors.

Notes: RPS = Renewables Portfolio Standard; SCE = Southern California Edison.

Source: Ascent Environmental 2022.

Table 31 shows the 2019 inventory and legislative-adjusted BAU forecasted emissions from municipal operations water supply for 2030, 2035, 2040, and 2045.

**Table 31. Water Supply GHG Emissions Inventory and Legislative-Adjusted BAU Forecasts (Annual MTCO<sub>2</sub>e)**

Activity	2019	2030	2035	2040	2045
Water Supply Emissions	4	2	2	1	0

Notes: BAU = business-as-usual; GHG = greenhouse gas; MTCO<sub>2</sub>e = metric tons of carbon dioxide equivalent.

Source: Ascent Environmental 2023.

## 2.2.7 Wastewater Treatment

Between 2019 and 2045, wastewater treatment emissions from municipal operations would increase by approximately 20 percent from 1,144 to 1,386 MTCO<sub>2e</sub>, accounting for legislative reductions and municipal employment change. This reflects both an increase in wastewater generation and lower electricity emissions factors related to the 2030 and 2045 RPS targets for SCE, pursuant to SB 100, due to treatment processes located outside of the OCPA service area. Although electricity intensity factors are reduced through 2045, increases in process and fugitive emissions resulting from wastewater collection and treatment would offset decreased electricity emissions. Table 32 summarizes the legislative reductions used to forecast emissions from municipal operations wastewater treatment.

**Table 32. Wastewater Treatment Forecast Legislative Reductions**

Source	Applied Legislative Reductions
Wastewater Treatment	RPS achieved to date and scheduled targets (i.e., 33 percent renewable by 2020, 60 percent renewable by 2030, 100 percent renewable by 2045) applied to SCE's electricity emissions factors.

Notes: RPS = Renewables Portfolio Standard; SCE = Southern California Edison.

Source: Ascent Environmental 2022.

Table 33 shows the 2019 inventory and legislative-adjusted BAU forecasted emissions from wastewater treatment for 2030, 2035, 2040, and 2045.

**Table 33. Wastewater Treatment GHG Emissions Inventory and Legislative-Adjusted BAU Forecasts (Annual MTCO<sub>2e</sub>)**

Activity	2019	2030	2035	2040	2045
Wastewater Treatment	1,144	1,246	1,386	1,340	1,386

Notes: BAU = business-as-usual; GHG = greenhouse gas; MTCO<sub>2e</sub> = metric tons of carbon dioxide equivalent.

Source: Ascent Environmental 2023.

## 2.3 DISCUSSION

The community and municipal legislative-adjusted BAU emissions would decrease by approximately 38 percent and 64 percent between 2019 and 2045, respectively. This is a result of reductions that would be achieved from several legislative actions including:

- ▶ a greater renewable mix in SCE's and State electricity supply (60 percent by 2030 and 100 percent by 2045);
- ▶ carbon-free electricity supplied by OCPA;
- ▶ improved building energy efficiency through compliance with Title 24 standards;
- ▶ reductions in on-road vehicle emissions factors from State vehicle standards as forecasted in EMFAC2021 and ACC II standards; and
- ▶ reductions in off-road vehicle and equipment emissions factors forecasted in OFFROAD2021.

Going forward, new legislative actions that would affect emissions may be adopted by State and federal agencies; however, because information regarding these regulatory changes is currently unavailable or not final, emissions reductions from future potential legislative actions are not quantified in this memorandum. Where new State regulations or programs are imminent and reasonably foreseeable, they can be incorporated as complementary actions to locally based GHG reduction measures.

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## APPENDIX F-1

### Greenhouse Gas Emissions for Hypothetical Project #1

# Irvine GPU - Sample Residential Project Detailed Report

## Table of Contents

1. Basic Project Information
  - 1.1. Basic Project Information
  - 1.2. Land Use Types
  - 1.3. User-Selected Emission Reduction Measures by Emissions Sector
2. Emissions Summary
  - 2.1. Construction Emissions Compared Against Thresholds
  - 2.2. Construction Emissions by Year, Unmitigated
  - 2.4. Operations Emissions Compared Against Thresholds
  - 2.5. Operations Emissions by Sector, Unmitigated
3. Construction Emissions Details
  - 3.1. Demolition (2026) - Unmitigated
  - 3.3. Site Preparation (2026) - Unmitigated
  - 3.5. Grading (2026) - Unmitigated
  - 3.7. Building Construction (2026) - Unmitigated



3.9. Building Construction (2027) - Unmitigated

3.11. Paving (2027) - Unmitigated

3.13. Architectural Coating (2027) - Unmitigated

#### 4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

4.3. Area Emissions by Source

4.3.1. Unmitigated

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

#### 4.7. Offroad Emissions By Equipment Type

##### 4.7.1. Unmitigated

#### 4.8. Stationary Emissions By Equipment Type

##### 4.8.1. Unmitigated

#### 4.9. User Defined Emissions By Equipment Type

##### 4.9.1. Unmitigated

#### 4.10. Soil Carbon Accumulation By Vegetation Type

##### 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

##### 4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

##### 4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

### 5. Activity Data

#### 5.1. Construction Schedule

#### 5.2. Off-Road Equipment

##### 5.2.1. Unmitigated

#### 5.3. Construction Vehicles

##### 5.3.1. Unmitigated

#### 5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

# 1. Basic Project Information

## 1.1. Basic Project Information

Data Field	Value
Project Name	Irvine GPU - Sample Residential Project
Construction Start Date	1/1/2026
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	19.6
Location	Irvine, CA, USA
County	Orange
City	Irvine
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5924
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.21

## 1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
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Apartments Mid Rise	440	Dwelling Unit	11.6	422,400	100,000	—	1,311	—
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### 1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

## 2. Emissions Summary

### 2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.49	132	12.3	30.4	0.03	0.39	4.54	4.93	0.36	1.08	1.44	—	7,998	7,998	0.22	0.38	18.1	8,134
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.80	3.20	29.2	29.6	0.06	1.24	19.9	21.1	1.14	10.2	11.3	—	7,799	7,799	0.27	0.38	0.47	7,918
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.91	7.85	11.0	19.8	0.03	0.38	3.77	4.16	0.35	1.17	1.52	—	5,184	5,184	0.16	0.21	4.32	5,256
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.35	1.43	2.01	3.62	< 0.005	0.07	0.69	0.76	0.06	0.21	0.28	—	858	858	0.03	0.04	0.72	870

### 2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	2.49	2.17	12.3	30.4	0.03	0.39	4.54	4.93	0.36	1.08	1.44	—	7,998	7,998	0.22	0.38	18.1	8,134
2027	2.40	132	11.8	29.3	0.03	0.35	4.54	4.89	0.32	1.08	1.40	—	7,901	7,901	0.21	0.37	16.3	8,032
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	3.80	3.20	29.2	29.6	0.06	1.24	19.9	21.1	1.14	10.2	11.3	—	7,799	7,799	0.27	0.38	0.47	7,918
2027	2.40	1.96	11.9	27.1	0.03	0.35	4.54	4.89	0.32	1.08	1.40	—	7,706	7,706	0.22	0.37	0.42	7,821
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.91	1.65	11.0	19.8	0.03	0.38	3.77	4.16	0.35	1.17	1.52	—	5,184	5,184	0.16	0.21	4.32	5,256
2027	0.74	7.85	3.80	8.55	0.01	0.11	1.31	1.43	0.11	0.31	0.42	—	2,314	2,314	0.07	0.11	2.05	2,349
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.35	0.30	2.01	3.62	< 0.005	0.07	0.69	0.76	0.06	0.21	0.28	—	858	858	0.03	0.04	0.72	870
2027	0.13	1.43	0.69	1.56	< 0.005	0.02	0.24	0.26	0.02	0.06	0.08	—	383	383	0.01	0.02	0.34	389

## 2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	10.2	19.1	6.19	80.2	0.15	0.20	13.6	13.8	0.19	3.45	3.64	207	17,719	17,926	21.7	0.66	48.1	18,714
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	7.78	16.8	6.36	51.8	0.14	0.18	13.6	13.8	0.18	3.45	3.63	207	17,101	17,308	21.8	0.69	4.19	18,061



Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	8.94	17.9	6.31	67.4	0.14	0.19	12.8	13.0	0.18	3.24	3.42	207	16,602	16,809	21.7	0.66	21.5	17,570
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.63	3.27	1.15	12.3	0.03	0.03	2.33	2.36	0.03	0.59	0.62	34.3	2,749	2,783	3.59	0.11	3.56	2,909

## 2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	7.69	7.06	4.72	54.7	0.14	0.08	13.6	13.7	0.08	3.45	3.53	—	14,442	14,442	0.66	0.56	45.1	14,670
Area	2.31	12.0	0.24	25.0	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	66.7	66.7	< 0.005	< 0.005	—	67.0
Energy	0.14	0.07	1.23	0.53	0.01	0.10	—	0.10	0.10	—	0.10	—	3,096	3,096	0.28	0.02	—	3,109
Water	—	—	—	—	—	—	—	—	—	—	—	31.6	115	146	3.26	0.08	—	251
Waste	—	—	—	—	—	—	—	—	—	—	—	175	0.00	175	17.5	0.00	—	613
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.03	3.03
Total	10.2	19.1	6.19	80.2	0.15	0.20	13.6	13.8	0.19	3.45	3.64	207	17,719	17,926	21.7	0.66	48.1	18,714
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	7.64	7.00	5.12	51.3	0.14	0.08	13.6	13.7	0.08	3.45	3.53	—	13,890	13,890	0.69	0.59	1.17	14,084
Area	0.00	9.76	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	0.14	0.07	1.23	0.53	0.01	0.10	—	0.10	0.10	—	0.10	—	3,096	3,096	0.28	0.02	—	3,109
Water	—	—	—	—	—	—	—	—	—	—	—	31.6	115	146	3.26	0.08	—	251
Waste	—	—	—	—	—	—	—	—	—	—	—	175	0.00	175	17.5	0.00	—	613
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.03	3.03

Total	7.78	16.8	6.36	51.8	0.14	0.18	13.6	13.8	0.18	3.45	3.63	207	17,101	17,308	21.8	0.69	4.19	18,061
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	7.21	6.61	4.91	49.8	0.13	0.08	12.8	12.8	0.07	3.24	3.32	—	13,346	13,346	0.65	0.56	18.5	13,548
Area	1.58	11.3	0.16	17.1	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	45.7	45.7	< 0.005	< 0.005	—	45.9
Energy	0.14	0.07	1.23	0.53	0.01	0.10	—	0.10	0.10	—	0.10	—	3,096	3,096	0.28	0.02	—	3,109
Water	—	—	—	—	—	—	—	—	—	—	—	31.6	115	146	3.26	0.08	—	251
Waste	—	—	—	—	—	—	—	—	—	—	—	175	0.00	175	17.5	0.00	—	613
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.03	3.03
Total	8.94	17.9	6.31	67.4	0.14	0.19	12.8	13.0	0.18	3.24	3.42	207	16,602	16,809	21.7	0.66	21.5	17,570
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.32	1.21	0.90	9.09	0.02	0.01	2.33	2.35	0.01	0.59	0.61	—	2,210	2,210	0.11	0.09	3.06	2,243
Area	0.29	2.06	0.03	3.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	7.57	7.57	< 0.005	< 0.005	—	7.60
Energy	0.03	0.01	0.23	0.10	< 0.005	0.02	—	0.02	0.02	—	0.02	—	513	513	0.05	< 0.005	—	515
Water	—	—	—	—	—	—	—	—	—	—	—	5.24	19.0	24.2	0.54	0.01	—	41.6
Waste	—	—	—	—	—	—	—	—	—	—	—	29.0	0.00	29.0	2.90	0.00	—	102
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.50	0.50
Total	1.63	3.27	1.15	12.3	0.03	0.03	2.33	2.36	0.03	0.59	0.62	34.3	2,749	2,783	3.59	0.11	3.56	2,909

### 3. Construction Emissions Details

#### 3.1. Demolition (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.72	2.29	20.7	19.0	0.03	0.84	—	0.84	0.78	—	0.78	—	3,427	3,427	0.14	0.03	—	3,438
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	1.13	1.04	< 0.005	0.05	—	0.05	0.04	—	0.04	—	188	188	0.01	< 0.005	—	188
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.21	0.19	< 0.005	0.01	—	0.01	0.01	—	0.01	—	31.1	31.1	< 0.005	< 0.005	—	31.2
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.05	0.68	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	186	186	< 0.005	0.01	0.02	188
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.3	10.3	< 0.005	< 0.005	0.02	10.5	
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.71	1.71	< 0.005	< 0.005	< 0.005	1.73	
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	

### 3.3. Site Preparation (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.74	3.14	29.2	28.8	0.05	1.24	—	1.24	1.14	—	1.14	—	5,298	5,298	0.21	0.04	—	5,316
Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.10	0.09	0.80	0.79	< 0.005	0.03	—	0.03	0.03	—	0.03	—	145	145	0.01	< 0.005	—	146
Dust From Material Movement	—	—	—	—	—	—	0.54	0.54	—	0.28	0.28	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.15	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	24.0	24.0	< 0.005	< 0.005	—	24.1
Dust From Material Movement	—	—	—	—	—	—	0.10	0.10	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.06	0.80	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	217	217	< 0.005	0.01	0.02	219
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.02	6.02	< 0.005	< 0.005	0.01	6.10
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.00	1.00	< 0.005	< 0.005	< 0.005	1.01
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

### 3.5. Grading (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.62	3.04	27.2	27.6	0.06	1.12	—	1.12	1.03	—	1.03	—	6,599	6,599	0.27	0.05	—	6,621
Dust From Material Movement:	—	—	—	—	—	—	9.20	9.20	—	3.65	3.65	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30	0.25	2.24	2.27	0.01	0.09	—	0.09	0.08	—	0.08	—	542	542	0.02	< 0.005	—	544
Dust From Material Movement:	—	—	—	—	—	—	0.76	0.76	—	0.30	0.30	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.05	0.05	0.41	0.41	< 0.005	0.02	—	0.02	0.02	—	0.02	—	89.8	89.8	< 0.005	< 0.005	—	90.1
Dust From Material Movement	—	—	—	—	—	—	0.14	0.14	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.07	0.91	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	248	248	< 0.005	0.01	0.02	251
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	20.7	20.7	< 0.005	< 0.005	0.03	20.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.42	3.42	< 0.005	< 0.005	0.01	3.46
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

### 3.7. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.70	0.58	5.36	7.05	0.01	0.21	—	0.21	0.19	—	0.19	—	1,304	1,304	0.05	0.01	—	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.98	1.29	< 0.005	0.04	—	0.04	0.03	—	0.03	—	216	216	0.01	< 0.005	—	217
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.10	1.07	0.96	16.7	0.00	0.00	4.14	4.14	0.00	0.97	0.97	—	4,125	4,125	0.05	0.15	14.3	4,186
Vendor	0.12	0.03	1.50	0.75	0.01	0.01	0.40	0.41	0.01	0.11	0.12	—	1,475	1,475	0.07	0.21	3.81	1,543
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00



Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.09	1.07	1.11	14.4	0.00	0.00	4.14	4.14	0.00	0.97	0.97	—	3,926	3,926	0.06	0.15	0.37	3,973
Vendor	0.11	0.03	1.56	0.77	0.01	0.01	0.40	0.41	0.01	0.11	0.12	—	1,476	1,476	0.07	0.21	0.10	1,540
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.59	0.58	0.60	8.14	0.00	0.00	2.22	2.22	0.00	0.52	0.52	—	2,165	2,165	0.03	0.08	3.37	2,194
Vendor	0.06	0.02	0.86	0.41	0.01	0.01	0.22	0.22	0.01	0.06	0.07	—	803	803	0.04	0.11	0.90	838
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.11	0.11	1.49	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	358	358	0.01	0.01	0.56	363
Vendor	0.01	< 0.005	0.16	0.08	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	133	133	0.01	0.02	0.15	139
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

### 3.9. Building Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.29	2.63	3.62	0.01	0.09	—	0.09	0.09	—	0.09	—	671	671	0.03	0.01	—	673
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.48	0.66	< 0.005	0.02	—	0.02	0.02	—	0.02	—	111	111	< 0.005	< 0.005	—	111
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.05	0.90	0.95	15.7	0.00	0.00	4.14	4.14	0.00	0.97	0.97	—	4,056	4,056	0.04	0.15	12.9	4,114
Vendor	0.11	0.03	1.44	0.72	0.01	0.01	0.40	0.41	0.01	0.11	0.12	—	1,448	1,448	0.07	0.20	3.46	1,512
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.05	0.90	0.97	13.5	0.00	0.00	4.14	4.14	0.00	0.97	0.97	—	3,860	3,860	0.05	0.15	0.33	3,906
Vendor	0.11	0.03	1.50	0.73	0.01	0.01	0.40	0.41	0.01	0.11	0.12	—	1,449	1,449	0.07	0.20	0.09	1,510
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.29	0.25	0.31	3.93	0.00	0.00	1.14	1.14	0.00	0.27	0.27	—	1,095	1,095	0.01	0.04	1.56	1,109
Vendor	0.03	0.01	0.42	0.20	< 0.005	< 0.005	0.11	0.11	< 0.005	0.03	0.03	—	405	405	0.02	0.06	0.42	423

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.06	0.72	0.00	0.00	0.21	0.21	0.00	0.05	0.05	—	181	181	< 0.005	0.01	0.26	184
Vendor	0.01	< 0.005	0.08	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	67.1	67.1	< 0.005	0.01	0.07	70.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

### 3.11. Paving (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.88	0.74	6.94	9.95	0.01	0.30	—	0.30	0.27	—	0.27	—	1,511	1,511	0.06	0.01	—	1,516
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.38	0.55	< 0.005	0.02	—	0.02	0.02	—	0.02	—	82.8	82.8	< 0.005	< 0.005	—	83.1
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.7	13.7	< 0.005	< 0.005	—	13.8

Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.04	0.74	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	192	192	< 0.005	0.01	0.61	195
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.2	10.2	< 0.005	< 0.005	0.01	10.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.68	1.68	< 0.005	< 0.005	< 0.005	1.70
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

### 3.13. Architectural Coating (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	132	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.32	7.32	< 0.005	< 0.005	—	7.34
Architectural Coatings	—	7.24	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.21	1.21	< 0.005	< 0.005	—	1.22
Architectural Coatings	—	1.32	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.18	0.19	3.13	0.00	0.00	0.83	0.83	0.00	0.19	0.19	—	811	811	0.01	0.03	2.57	823
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.15	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	42.9	42.9	< 0.005	< 0.005	0.06	43.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.10	7.10	< 0.005	< 0.005	0.01	7.19
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

## 4. Operations Emissions Details

### 4.1. Mobile Emissions by Land Use

#### 4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	7.69	7.06	4.72	54.7	0.14	0.08	13.6	13.7	0.08	3.45	3.53	—	14,442	14,442	0.66	0.56	45.1	14,670
Total	7.69	7.06	4.72	54.7	0.14	0.08	13.6	13.7	0.08	3.45	3.53	—	14,442	14,442	0.66	0.56	45.1	14,670
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Apartme Mid Rise	7.64	7.00	5.12	51.3	0.14	0.08	13.6	13.7	0.08	3.45	3.53	—	13,890	13,890	0.69	0.59	1.17	14,084
Total	7.64	7.00	5.12	51.3	0.14	0.08	13.6	13.7	0.08	3.45	3.53	—	13,890	13,890	0.69	0.59	1.17	14,084
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartme nts Mid Rise	1.32	1.21	0.90	9.09	0.02	0.01	2.33	2.35	0.01	0.59	0.61	—	2,210	2,210	0.11	0.09	3.06	2,243
Total	1.32	1.21	0.90	9.09	0.02	0.01	2.33	2.35	0.01	0.59	0.61	—	2,210	2,210	0.11	0.09	3.06	2,243

## 4.2. Energy

### 4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartme nts Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	1,530	1,530	0.15	0.02	—	1,539
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,530	1,530	0.15	0.02	—	1,539
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartme nts Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	1,530	1,530	0.15	0.02	—	1,539
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,530	1,530	0.15	0.02	—	1,539
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartme nts Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	253	253	0.02	< 0.005	—	255

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	253	253	0.02	< 0.005	—	255
-------	---	---	---	---	---	---	---	---	---	---	---	---	---	-----	-----	------	---------	---	-----

### 4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.14	0.07	1.23	0.53	0.01	0.10	—	0.10	0.10	—	0.10	—	1,566	1,566	0.14	< 0.005	—	1,571
Total	0.14	0.07	1.23	0.53	0.01	0.10	—	0.10	0.10	—	0.10	—	1,566	1,566	0.14	< 0.005	—	1,571
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.14	0.07	1.23	0.53	0.01	0.10	—	0.10	0.10	—	0.10	—	1,566	1,566	0.14	< 0.005	—	1,571
Total	0.14	0.07	1.23	0.53	0.01	0.10	—	0.10	0.10	—	0.10	—	1,566	1,566	0.14	< 0.005	—	1,571
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	0.03	0.01	0.23	0.10	< 0.005	0.02	—	0.02	0.02	—	0.02	—	259	259	0.02	< 0.005	—	260
Total	0.03	0.01	0.23	0.10	< 0.005	0.02	—	0.02	0.02	—	0.02	—	259	259	0.02	< 0.005	—	260

### 4.3. Area Emissions by Source

#### 4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
--------	-----	-----	-----	----	-----	-------	-------	-------	--------	--------	--------	------	-------	------	-----	-----	---	------



Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	9.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	2.31	2.19	0.24	25.0	< 0.005	0.01	—	0.01	0.01	—	0.01	—	66.7	66.7	< 0.005	< 0.005	—	67.0
Total	2.31	12.0	0.24	25.0	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	66.7	66.7	< 0.005	< 0.005	—	67.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	9.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.00	9.76	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	1.65	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape	0.29	0.27	0.03	3.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.57	7.57	< 0.005	< 0.005	—	7.60
Total	0.29	2.06	0.03	3.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	7.57	7.57	< 0.005	< 0.005	—	7.60

#### 4.4. Water Emissions by Land Use

##### 4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	31.6	115	146	3.26	0.08	—	251
Total	—	—	—	—	—	—	—	—	—	—	—	31.6	115	146	3.26	0.08	—	251
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	31.6	115	146	3.26	0.08	—	251
Total	—	—	—	—	—	—	—	—	—	—	—	31.6	115	146	3.26	0.08	—	251
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	5.24	19.0	24.2	0.54	0.01	—	41.6
Total	—	—	—	—	—	—	—	—	—	—	—	5.24	19.0	24.2	0.54	0.01	—	41.6

#### 4.5. Waste Emissions by Land Use

### 4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	175	0.00	175	17.5	0.00	—	613
Total	—	—	—	—	—	—	—	—	—	—	—	175	0.00	175	17.5	0.00	—	613
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	175	0.00	175	17.5	0.00	—	613
Total	—	—	—	—	—	—	—	—	—	—	—	175	0.00	175	17.5	0.00	—	613
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	29.0	0.00	29.0	2.90	0.00	—	102
Total	—	—	—	—	—	—	—	—	—	—	—	29.0	0.00	29.0	2.90	0.00	—	102

### 4.6. Refrigerant Emissions by Land Use

#### 4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
----------	-----	-----	-----	----	-----	-------	-------	-------	--------	--------	--------	------	-------	------	-----	-----	---	------

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.03	3.03
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.03	3.03
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.03	3.03
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.03	3.03
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.50	0.50
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.50	0.50

### 4.7. Offroad Emissions By Equipment Type

#### 4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

### 4.8. Stationary Emissions By Equipment Type

#### 4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

### 4.9. User Defined Emissions By Equipment Type

#### 4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

#### 4.10. Soil Carbon Accumulation By Vegetation Type

##### 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

## 5. Activity Data

### 5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	1/1/2026	1/29/2026	5.00	20.0	—
Site Preparation	Site Preparation	1/30/2026	2/13/2026	5.00	10.0	—



Grading	Grading	2/14/2026	3/28/2026	5.00	30.0	—
Building Construction	Building Construction	3/29/2026	5/23/2027	5.00	300	—
Paving	Paving	5/24/2027	6/21/2027	5.00	20.0	—
Architectural Coating	Architectural Coating	6/22/2027	7/20/2027	5.00	20.0	—

## 5.2. Off-Road Equipment

### 5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42

Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

## 5.3. Construction Vehicles

### 5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	18.5	LDA,LDT1,LDT2
Demolition	Vendor	—	10.2	HHDT,MHDT
Demolition	Hauling	0.00	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10.2	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	—	10.2	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	317	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	47.0	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT

Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	63.4	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

## 5.4. Vehicles

### 5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

## 5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	855,360	285,120	0.00	0.00	—

## 5.6. Dust Mitigation

### 5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	—	—
Site Preparation	—	—	15.0	0.00	—

Grading	—	—	90.0	0.00	—
Paving	0.00	0.00	0.00	0.00	—

### 5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

### 5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Apartments Mid Rise	—	0%

### 5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	532	0.03	< 0.005
2027	0.00	532	0.03	< 0.005

### 5.9. Operational Mobile Sources

#### 5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VM/Weekday	VM/Saturday	VM/Sunday	VM/Year
Apartments Mid Rise	2,394	2,160	1,800	830,531	19,225	17,352	14,454	6,670,557

### 5.10. Operational Area Sources

#### 5.10.1. Hearths

##### 5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Apartments Mid Rise	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	400
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

### 5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
855360	285,120	0.00	0.00	—

### 5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

## 5.11. Operational Energy Consumption

### 5.11.1. Unmitigated

#### Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
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Apartments Mid Rise	1,612,967	346	0.0330	0.0040	4,887,011
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## 5.12. Operational Water and Wastewater Consumption

### 5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Mid Rise	16,511,286	1,584,046

## 5.13. Operational Waste Generation

### 5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Mid Rise	325	—

## 5.14. Operational Refrigeration and Air Conditioning Equipment

### 5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Apartments Mid Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Mid Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

## 5.15. Operational Off-Road Equipment

### 5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
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## 5.16. Stationary Sources

### 5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
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### 5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)
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## 5.17. User Defined

Equipment Type	Fuel Type
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## 5.18. Vegetation

### 5.18.1. Land Use Change

#### 5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
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### 5.18.1. Biomass Cover Type

#### 5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
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### 5.18.2. Sequestration

#### 5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
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## 6. Climate Risk Detailed Report

### 6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	9.54	annual days of extreme heat
Extreme Precipitation	3.60	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about  $\frac{3}{4}$  an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

### 6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A



Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

### 6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

### 6.4. Climate Risk Reduction Measures

## 7. Health and Equity Details

### 7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	59.7
AQ-PM	63.2
AQ-DPM	81.4
Drinking Water	47.3
Lead Risk Housing	18.3
Pesticides	45.9
Toxic Releases	84.3
Traffic	53.5
Effect Indicators	—
CleanUp Sites	17.1
Groundwater	10.6
Haz Waste Facilities/Generators	94.3
Impaired Water Bodies	83.0
Solid Waste	24.8
Sensitive Population	—
Asthma	8.91
Cardio-vascular	23.2
Low Birth Weights	28.8
Socioeconomic Factor Indicators	—
Education	12.0
Housing	51.8
Linguistic	40.4
Poverty	54.1
Unemployment	35.0

## 7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	59.84858206
Employed	83.80597973
Median HI	61.09328885
Education	—
Bachelor's or higher	89.87552932
High school enrollment	100
Preschool enrollment	95.7141024
Transportation	—
Auto Access	32.25972026
Active commuting	49.49313486
Social	—
2-parent households	54.35647376
Voting	24.03438984
Neighborhood	—
Alcohol availability	37.16155524
Park access	81.35506224
Retail density	86.30822533
Supermarket access	86.78301039
Tree canopy	16.0272039
Housing	—
Homeownership	7.481072758
Housing habitability	58.06493007
Low-inc homeowner severe housing cost burden	85.62812781

Low-inc renter severe housing cost burden	80.00769922
Uncrowded housing	49.60862312
Health Outcomes	—
Insured adults	78.89131272
Arthritis	95.7
Asthma ER Admissions	91.4
High Blood Pressure	94.4
Cancer (excluding skin)	74.5
Asthma	72.9
Coronary Heart Disease	96.0
Chronic Obstructive Pulmonary Disease	93.7
Diagnosed Diabetes	95.3
Life Expectancy at Birth	83.1
Cognitively Disabled	62.4
Physically Disabled	45.1
Heart Attack ER Admissions	80.6
Mental Health Not Good	78.4
Chronic Kidney Disease	95.6
Obesity	95.5
Pedestrian Injuries	53.5
Physical Health Not Good	93.2
Stroke	95.7
Health Risk Behaviors	—
Binge Drinking	29.5
Current Smoker	81.1
No Leisure Time for Physical Activity	80.7
Climate Change Exposures	—

Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	67.0
Elderly	84.2
English Speaking	30.4
Foreign-born	89.5
Outdoor Workers	68.8
Climate Change Adaptive Capacity	—
Impervious Surface Cover	58.1
Traffic Density	22.1
Traffic Access	23.0
Other Indices	—
Hardship	24.0
Other Decision Support	—
2016 Voting	46.9

### 7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	37.0
Healthy Places Index Score for Project Location (b)	75.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

### 7.4. Health & Equity Measures

No Health & Equity Measures selected.

## 7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

## 7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

## 8. User Changes to Default Data

Screen	Justification
Operations: Hearths	No woodstoves or fireplaces

## APPENDIX F-2

### Greenhouse Gas Emissions for Hypothetical Project #2

# 15937 - Irvine GPU (Operation) Detailed Report

## Table of Contents

- 1. Basic Project Information
  - 1.1. Basic Project Information
  - 1.2. Land Use Types
  - 1.3. User-Selected Emission Reduction Measures by Emissions Sector
- 2. Emissions Summary
  - 2.4. Operations Emissions Compared Against Thresholds
  - 2.5. Operations Emissions by Sector, Unmitigated
- 4. Operations Emissions Details
  - 4.1. Mobile Emissions by Land Use
    - 4.1.1. Unmitigated
  - 4.2. Energy
    - 4.2.1. Electricity Emissions By Land Use - Unmitigated
    - 4.2.3. Natural Gas Emissions By Land Use - Unmitigated
  - 4.3. Area Emissions by Source



4.3.1. Unmitigated

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

## 5. Activity Data

### 5.9. Operational Mobile Sources

#### 5.9.1. Unmitigated

### 5.10. Operational Area Sources

#### 5.10.1. Hearths

##### 5.10.1.1. Unmitigated

#### 5.10.2. Architectural Coatings

#### 5.10.3. Landscape Equipment

### 5.11. Operational Energy Consumption

#### 5.11.1. Unmitigated

### 5.12. Operational Water and Wastewater Consumption

#### 5.12.1. Unmitigated

### 5.13. Operational Waste Generation

#### 5.13.1. Unmitigated

### 5.14. Operational Refrigeration and Air Conditioning Equipment

#### 5.14.1. Unmitigated

### 5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

## 7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

## 8. User Changes to Default Data

# 1. Basic Project Information

## 1.1. Basic Project Information

Data Field	Value
Project Name	15937 - Irvine GPU (Operation)
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	19.6
Location	33.688397, -117.841364
County	Orange
City	Irvine
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	6804
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.21

## 1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Apartments High Rise	1,500	Dwelling Unit	15.0	1,005,000	0.00	—	4,470	—

### 1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

## 2. Emissions Summary

### 2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	31.9	52.2	21.4	282	0.56	0.69	51.3	52.0	0.66	13.0	13.7	706	68,241	68,946	74.0	2.32	177	71,664
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	23.9	44.6	22.0	182	0.54	0.65	51.3	52.0	0.63	13.0	13.6	706	65,930	66,636	74.1	2.40	11.6	69,216
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	28.1	48.7	22.0	237	0.52	0.66	48.5	49.2	0.64	12.3	13.0	706	64,426	65,131	74.0	2.33	77.5	67,752
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.13	8.88	4.02	43.2	0.10	0.12	8.85	8.98	0.12	2.25	2.36	117	10,666	10,783	12.3	0.38	12.8	11,217

### 2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mobile	23.5	21.3	16.4	195	0.53	0.31	51.3	51.6	0.29	13.0	13.3	—	54,101	54,101	2.20	1.98	170	54,915
Area	7.89	30.7	0.81	85.2	< 0.005	0.04	—	0.04	0.03	—	0.03	0.00	228	228	0.01	< 0.005	—	228
Energy	0.49	0.25	4.21	1.79	0.03	0.34	—	0.34	0.34	—	0.34	—	13,354	13,354	0.97	0.07	—	13,399
Water	—	—	—	—	—	—	—	—	—	—	—	108	558	666	11.1	0.27	—	1,023
Waste	—	—	—	—	—	—	—	—	—	—	—	598	0.00	598	59.7	0.00	—	2,091
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.20	7.20
Total	31.9	52.2	21.4	282	0.56	0.69	51.3	52.0	0.66	13.0	13.7	706	68,241	68,946	74.0	2.32	177	71,664
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	23.4	21.1	17.8	180	0.51	0.31	51.3	51.6	0.29	13.0	13.3	—	52,018	52,018	2.28	2.07	4.41	52,695
Area	0.00	23.2	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	0.49	0.25	4.21	1.79	0.03	0.34	—	0.34	0.34	—	0.34	—	13,354	13,354	0.97	0.07	—	13,399
Water	—	—	—	—	—	—	—	—	—	—	—	108	558	666	11.1	0.27	—	1,023
Waste	—	—	—	—	—	—	—	—	—	—	—	598	0.00	598	59.7	0.00	—	2,091
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.20	7.20
Total	23.9	44.6	22.0	182	0.54	0.65	51.3	52.0	0.63	13.0	13.6	706	65,930	66,636	74.1	2.40	11.6	69,216
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	22.2	20.1	17.3	177	0.49	0.29	48.5	48.8	0.27	12.3	12.6	—	50,358	50,358	2.17	1.99	70.3	51,074
Area	5.40	28.3	0.56	58.3	< 0.005	0.03	—	0.03	0.02	—	0.02	0.00	156	156	0.01	< 0.005	—	156
Energy	0.49	0.25	4.21	1.79	0.03	0.34	—	0.34	0.34	—	0.34	—	13,354	13,354	0.97	0.07	—	13,399
Water	—	—	—	—	—	—	—	—	—	—	—	108	558	666	11.1	0.27	—	1,023
Waste	—	—	—	—	—	—	—	—	—	—	—	598	0.00	598	59.7	0.00	—	2,091
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.20	7.20
Total	28.1	48.7	22.0	237	0.52	0.66	48.5	49.2	0.64	12.3	13.0	706	64,426	65,131	74.0	2.33	77.5	67,752
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	4.06	3.66	3.15	32.3	0.09	0.05	8.85	8.91	0.05	2.25	2.30	—	8,337	8,337	0.36	0.33	11.6	8,456
Area	0.99	5.17	0.10	10.6	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	0.00	25.8	25.8	< 0.005	< 0.005	—	25.9

Energy	0.09	0.04	0.77	0.33	< 0.005	0.06	—	0.06	0.06	—	0.06	—	2,211	2,211	0.16	0.01	—	2,218
Water	—	—	—	—	—	—	—	—	—	—	—	17.9	92.5	110	1.84	0.04	—	169
Waste	—	—	—	—	—	—	—	—	—	—	—	99.0	0.00	99.0	9.89	0.00	—	346
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.19	1.19
Total	5.13	8.88	4.02	43.2	0.10	0.12	8.85	8.98	0.12	2.25	2.36	117	10,666	10,783	12.3	0.38	12.8	11,217

## 4. Operations Emissions Details

### 4.1. Mobile Emissions by Land Use

#### 4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	23.5	21.3	16.4	195	0.53	0.31	51.3	51.6	0.29	13.0	13.3	—	54,101	54,101	2.20	1.98	170	54,915
Total	23.5	21.3	16.4	195	0.53	0.31	51.3	51.6	0.29	13.0	13.3	—	54,101	54,101	2.20	1.98	170	54,915
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	23.4	21.1	17.8	180	0.51	0.31	51.3	51.6	0.29	13.0	13.3	—	52,018	52,018	2.28	2.07	4.41	52,695
Total	23.4	21.1	17.8	180	0.51	0.31	51.3	51.6	0.29	13.0	13.3	—	52,018	52,018	2.28	2.07	4.41	52,695
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	4.06	3.66	3.15	32.3	0.09	0.05	8.85	8.91	0.05	2.25	2.30	—	8,337	8,337	0.36	0.33	11.6	8,456



Total	4.06	3.66	3.15	32.3	0.09	0.05	8.85	8.91	0.05	2.25	2.30	—	8,337	8,337	0.36	0.33	11.6	8,456
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### 4.2. Energy

#### 4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	8,014	8,014	0.50	0.06	—	8,045
Total	—	—	—	—	—	—	—	—	—	—	—	—	8,014	8,014	0.50	0.06	—	8,045
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	8,014	8,014	0.50	0.06	—	8,045
Total	—	—	—	—	—	—	—	—	—	—	—	—	8,014	8,014	0.50	0.06	—	8,045
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	1,327	1,327	0.08	0.01	—	1,332
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,327	1,327	0.08	0.01	—	1,332

#### 4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
----------	-----	-----	-----	----	-----	-------	-------	-------	--------	--------	--------	------	-------	------	-----	-----	---	------

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	0.49	0.25	4.21	1.79	0.03	0.34	—	0.34	0.34	—	0.34	—	5,339	5,339	0.47	0.01	—	5,354
Total	0.49	0.25	4.21	1.79	0.03	0.34	—	0.34	0.34	—	0.34	—	5,339	5,339	0.47	0.01	—	5,354
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	0.49	0.25	4.21	1.79	0.03	0.34	—	0.34	0.34	—	0.34	—	5,339	5,339	0.47	0.01	—	5,354
Total	0.49	0.25	4.21	1.79	0.03	0.34	—	0.34	0.34	—	0.34	—	5,339	5,339	0.47	0.01	—	5,354
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	0.09	0.04	0.77	0.33	< 0.005	0.06	—	0.06	0.06	—	0.06	—	884	884	0.08	< 0.005	—	886
Total	0.09	0.04	0.77	0.33	< 0.005	0.06	—	0.06	0.06	—	0.06	—	884	884	0.08	< 0.005	—	886

### 4.3. Area Emissions by Source

#### 4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	21.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural	—	1.72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	7.89	7.47	0.81	85.2	< 0.005	0.04	—	0.04	0.03	—	0.03	—	228	228	0.01	< 0.005	—	228
Total	7.89	30.7	0.81	85.2	< 0.005	0.04	—	0.04	0.03	—	0.03	0.00	228	228	0.01	< 0.005	—	228
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	21.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.00	23.2	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	3.93	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.31	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.99	0.93	0.10	10.6	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	25.8	25.8	< 0.005	< 0.005	—	25.9
Total	0.99	5.17	0.10	10.6	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	0.00	25.8	25.8	< 0.005	< 0.005	—	25.9

#### 4.4. Water Emissions by Land Use

### 4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	108	558	666	11.1	0.27	—	1,023
Total	—	—	—	—	—	—	—	—	—	—	—	108	558	666	11.1	0.27	—	1,023
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	108	558	666	11.1	0.27	—	1,023
Total	—	—	—	—	—	—	—	—	—	—	—	108	558	666	11.1	0.27	—	1,023
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	17.9	92.5	110	1.84	0.04	—	169
Total	—	—	—	—	—	—	—	—	—	—	—	17.9	92.5	110	1.84	0.04	—	169

### 4.5. Waste Emissions by Land Use

#### 4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
----------	-----	-----	-----	----	-----	-------	-------	-------	--------	--------	--------	------	-------	------	-----	-----	---	------

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	598	0.00	598	59.7	0.00	—	2,091
Total	—	—	—	—	—	—	—	—	—	—	—	598	0.00	598	59.7	0.00	—	2,091
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	598	0.00	598	59.7	0.00	—	2,091
Total	—	—	—	—	—	—	—	—	—	—	—	598	0.00	598	59.7	0.00	—	2,091
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	99.0	0.00	99.0	9.89	0.00	—	346
Total	—	—	—	—	—	—	—	—	—	—	—	99.0	0.00	99.0	9.89	0.00	—	346

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.20	7.20
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.20	7.20

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.20	7.20
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.20	7.20
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments High Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.19	1.19
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.19	1.19

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e	
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

### 4.8. Stationary Emissions By Equipment Type

#### 4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

### 4.9. User Defined Emissions By Equipment Type

#### 4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

#### 4.10. Soil Carbon Accumulation By Vegetation Type

##### 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

##### 4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—



Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Removed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Subtotal	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Annual	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Avoided	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Subtotal	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Sequestered	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Subtotal	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Removed	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Subtotal	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
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## 5. Activity Data

### 5.9. Operational Mobile Sources

#### 5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Apartments High Rise	6,675	6,795	5,385	2,375,368	71,225	72,506	57,460	25,346,237

### 5.10. Operational Area Sources

#### 5.10.1. Hearths

##### 5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Apartments High Rise	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	1500
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
2035125	678,375	0.00	0.00	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
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Apartments High Rise	5,498,751	532	0.0330	0.0040	16,660,264
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### 5.12. Operational Water and Wastewater Consumption

#### 5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments High Rise	56,288,475	0.00

### 5.13. Operational Waste Generation

#### 5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments High Rise	1,109	—

### 5.14. Operational Refrigeration and Air Conditioning Equipment

#### 5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Apartments High Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments High Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

### 5.15. Operational Off-Road Equipment

#### 5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
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## 5.16. Stationary Sources

### 5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
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### 5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)
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## 5.17. User Defined

Equipment Type	Fuel Type
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## 5.18. Vegetation

### 5.18.1. Land Use Change

#### 5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
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### 5.18.1. Biomass Cover Type

#### 5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
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### 5.18.2. Sequestration

#### 5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
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## 6. Climate Risk Detailed Report

### 6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	9.03	annual days of extreme heat
Extreme Precipitation	3.50	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	1.31	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about  $\frac{3}{4}$  an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

### 6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A

Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

### 6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

### 6.4. Climate Risk Reduction Measures

## 7. Health and Equity Details

### 7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	58.2
AQ-PM	68.7
AQ-DPM	84.2
Drinking Water	53.2
Lead Risk Housing	28.7
Pesticides	11.8
Toxic Releases	91.4
Traffic	88.9
Effect Indicators	—
CleanUp Sites	97.3
Groundwater	99.0
Haz Waste Facilities/Generators	98.4
Impaired Water Bodies	83.0
Solid Waste	97.7
Sensitive Population	—
Asthma	17.0
Cardio-vascular	20.8
Low Birth Weights	54.8
Socioeconomic Factor Indicators	—
Education	49.2
Housing	39.2
Linguistic	59.4
Poverty	55.5
Unemployment	5.57



## 7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	47.45284229
Employed	76.27357885
Median HI	69.01065058
Education	—
Bachelor's or higher	70.42217375
High school enrollment	100
Preschool enrollment	16.21968433
Transportation	—
Auto Access	57.21801617
Active commuting	69.0619787
Social	—
2-parent households	42.17887848
Voting	31.99024766
Neighborhood	—
Alcohol availability	44.80944437
Park access	28.53843193
Retail density	94.63621199
Supermarket access	58.28307455
Tree canopy	29.41100988
Housing	—
Homeownership	19.54317978
Housing habitability	30.20659566
Low-inc homeowner severe housing cost burden	97.88271526

Low-inc renter severe housing cost burden	75.33684075
Uncrowded housing	22.40472219
Health Outcomes	—
Insured adults	50.3143847
Arthritis	98.6
Asthma ER Admissions	82.6
High Blood Pressure	98.8
Cancer (excluding skin)	96.0
Asthma	65.7
Coronary Heart Disease	98.7
Chronic Obstructive Pulmonary Disease	94.6
Diagnosed Diabetes	98.6
Life Expectancy at Birth	99.4
Cognitively Disabled	52.2
Physically Disabled	81.6
Heart Attack ER Admissions	76.4
Mental Health Not Good	58.7
Chronic Kidney Disease	99.0
Obesity	94.5
Pedestrian Injuries	72.5
Physical Health Not Good	93.2
Stroke	98.4
Health Risk Behaviors	—
Binge Drinking	4.3
Current Smoker	42.3
No Leisure Time for Physical Activity	69.0
Climate Change Exposures	—

Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	25.4
Elderly	82.5
English Speaking	49.5
Foreign-born	80.9
Outdoor Workers	61.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	18.1
Traffic Density	92.8
Traffic Access	65.3
Other Indices	—
Hardship	52.6
Other Decision Support	—
2016 Voting	59.2

### 7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	64.0
Healthy Places Index Score for Project Location (b)	56.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.  
 b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

### 7.4. Health & Equity Measures

No Health & Equity Measures selected.

## 7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

## 7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

## 8. User Changes to Default Data

Screen	Justification
Land Use	Taken from client data
Construction: Construction Phases	Project start date taken from client data
Construction: Off-Road Equipment	T/L/B replaced with Crawler Tractor to accurately calculate disturbance for Site Preparation and Grading phases. Standard 8 hours work days.
Operations: Hearths	No fireplaces or woodstoves

Table 1

Table 1: Off-Site Roadway Parameters

ID	Roadway	Segment	Classification <sup>1</sup>	Centerline Distance to Receiving Land Use (Feet) <sup>2</sup>	Vehicle Speed (mph)
1	Ada	Barranca Parway to Marine Way	Commuter	38'	40
2	Ada	Alton Parkway to Barranca Parkway	Primary	63'	40
3	Alton Parkway	Enterprise to I-5 NB Off-Ramp	Major	84'	50
4	Alton Parkway	I-5 NB Off-Ramp to Technology Drive West	Major	80'	50
5	Alton Parkway	East Yale Loop to Jeffrey Road	Primary	63'	50
6	Alton Parkway	Gateway Boulevard to Enterprise	Major	84'	50
7	Alton Parkway	Jeffrey Road to Royal Oak	Primary	63'	50
8	Alton Parkway	Daimler Street to Red Hill Avenue	Primary	63'	50
9	Alton Parkway	Culver Drive to West Yale Loop	Primary	63'	50
10	Alton Parkway	West Yale Loop to Lake Road	Primary	63'	50
11	Alton Parkway	Technology Drive West to Ada	Major	80'	50
12	Alton Parkway	Creek Road to East Yale Loop	Primary	63'	50
13	Alton Parkway	Red Hill Avenue to Von Karman Avenue	Primary	63'	50
14	Alton Parkway	Lake Road to Creek Road	Primary	63'	50
15	Alton Parkway	Telemetry to Banting	Primary	63'	50
16	Alton Parkway	Irvine Boulevard to Commercentre	Major	84'	50
17	Alton Parkway	Jenner to Telemetry	Primary	63'	50
18	Alton Parkway	Irvine Center Drive to Gateway Boulevard	Major	84'	50
19	Alton Parkway	Sand Canyon Avenue to Hospital	Primary	60'	50
20	Alton Parkway	Laguna Canyon Road to Jenner	Primary	63'	50
21	Alton Parkway	Technology Drive East to Barranca Pkwy/Muirlands Blvd	Major	84'	50
22	Alton Parkway	Royal Oak to Valley Oak Drive	Primary	63'	50
23	Alton Parkway	Banting to Pacifica	Primary	63'	50
24	Alton Parkway	Barranca Pkwy/Muirlands Blvd to Jeronimo Road	Major	84'	50
25	Alton Parkway	Ada to Technology Drive East	Major	84'	50

Table 1

26	Alton Parkway	Von Karman Avenue to Jamboree Road	Primary	63'	50
27	Alton Parkway	Jeronimo Road to Hughes	Major	84'	50
28	Alton Parkway	Hughes to Morgan	Major	84'	50
29	Alton Parkway	Morgan to Toledo Way	Major	84'	50
30	Alton Parkway	San Marino to Culver Drive	Major	84'	50
31	Alton Parkway	Jamboree Road to Murphy Avenue	Major	84'	50
32	Alton Parkway	Hospital to Laguna Canyon Road	Primary	60'	50
33	Alton Parkway	Valley Oak Drive to Sand Canyon Avenue	Primary	60'	50
34	Alton Parkway	Murphy Avenue to Harvard Avenue	Major	84'	50
35	Alton Parkway	Foster to Irvine Boulevard	Major	84'	50
36	Alton Parkway	Fairbanks to Foster	Major	84'	50
37	Alton Parkway	Toledo Way to Berteza	Major	84'	50
38	Alton Parkway	Pacifica to Meridian	Primary	60'	50
39	Alton Parkway	Berteza to Fairbanks	Major	84'	50
40	Alton Parkway	Meridian to Irvine Center Drive	Major	84'	50
41	Alton Parkway	Paseo Westpark to San Marino	Major	84'	50
42	Alton Parkway	Harvard Avenue to Paseo Westpark	Major	84'	50
43	Astor	Lynx to Fairbanks	Commuter	38'	30
44	Astor	Cadence to Lynx	Commuter	38'	30
45	Bake Parkway	I-5 NB Off-Ramp to Rockfield Boulevard	Major	100'	50
46	Bake Parkway	Muirlands Boulevard to Jeronimo Road	Major	84'	50
47	Bake Parkway	Rockfield Boulevard to Muirlands Boulevard	Major	100'	50
48	Bake Parkway	Jeronimo Road to Toledo Way	Major	84'	50
49	Bake Parkway	Toledo Way to Cromwell	Major	84'	50
50	Bake Parkway	Cromwell to Irvine Boulevard	Major	84'	50
51	Bake Parkway	Research Drive to I-5 SB Off-Ramp	Major	84'	50
52	Bake Parkway	Irvine Center Drive to Research Drive	Major	84'	50
53	Bake Parkway	Lake Forest Drive to Irvine Center Drive	Major	84'	50
54	Banting	Alton Parkway to Barranca Parkway	Primary	63'	35
55	Barranca Parkway	Pacifica to Irvine Center Drive	Primary	63'	55
56	Barranca Parkway	Banting to Pacifica	Primary	63'	55

Table 1

57	Barranca Parkway	I-5 HOV Ramp to Technology Drive West	Primary	63'	55
58	Barranca Parkway	Technology Drive West to Ada	Primary	63'	55
59	Barranca Parkway	Irvine Center Drive to I-5 HOV Ramp	Primary	63'	55
60	Barranca Parkway	Culver Drive to West Yale Loop	Primary	63'	55
61	Barranca Parkway	East Yale Loop to Jeffrey Road	Primary	63'	55
62	Barranca Parkway	West Yale Loop to Lake Road	Primary	63'	55
63	Barranca Parkway	Ada to Alton Parkway	Primary	63'	55
64	Barranca Parkway	Lake Road to Creek Road	Primary	63'	55
65	Barranca Parkway	Red Hill Avenue to Armstrong Avenue	Major	100'	55
66	Barranca Parkway	Discovery/Herchel to Banting	Primary	63'	55
67	Barranca Parkway	Lyon to East Yale Loop	Primary	63'	55
68	Barranca Parkway	Creek Road to Lyon	Primary	63'	55
69	Barranca Parkway	Von Karman Avenue to Jamboree Road	Major	80'	55
70	Barranca Parkway	Sand Canyon Avenue to Laguna Canyon Road	Primary	63'	55
71	Barranca Parkway	Armstrong Avenue to Von Karman Avenue	Major	80'	55
72	Barranca Parkway	Valley Oak Drive to Sand Canyon Avenue	Primary	63'	55
73	Barranca Parkway	Jamboree Road to Construction Circle	Major	84'	55
74	Barranca Parkway	Santa Rosa to Culver Drive	Major	84'	55
75	Barranca Parkway	FedEx to Discovery/Herchel	Primary	63'	55
76	Barranca Parkway	Jeffrey Road to Valley Oak Drive	Primary	63'	55
77	Barranca Parkway	Laguna Canyon Road to FedEx	Primary	63'	55
78	Barranca Parkway	Pullman Street to Red Hill Avenue	Major	100'	55
79	Barranca Parkway	Construction Circle to Fire Station	Major	84'	55
80	Barranca Parkway	Fire Station to Harvard Avenue	Major	84'	55
81	Barranca Parkway	Paseo Westpark to Santa Rosa	Major	84'	55
82	Barranca Parkway	Harvard Avenue to Paseo Westpark	Major	84'	55
83	Bay Tree	Trabuco Road to Roosevelt	Primary	63'	35
84	Beacon	Ridge Valley to Benchmark	Commuter	38'	30
85	Benchmark (LN Street)	Ridge Valley (O Street) to Bosque	Commuter	38'	30
86	Bison Avenue	SR-73 NB Off-Ramp to California Avenue	Primary	63'	45
87	Bonita Canyon Drive	MacArthur Boulevard to SR-73	Primary	75'	50

Table 1

88	Bonita Canyon Drive	Turtle Ridge to Shady Canyon Drive	Primary	75'	50
89	Bonita Canyon Drive	Newport Coast Drive to Turtle Ridge	Primary	75'	50
90	Bonita Canyon Drive	SR-73 NB Off-Ramp to Newport Coast Drive	Primary	75'	50
91	Bosque	Cadence to Great Park Boulevard	Commuter	38'	30
92	Bosque	Irvine Boulevard to Benchmark (LN Street)	Commuter	38'	30
93	Bosque	Benchmark to Cadence	Commuter	38'	30
94	Bosque	Great Park Boulevard to Beacon	Commuter	38'	30
95	Bosque	Beacon to S 5th Street	Commuter	38'	30
96	Bryan Avenue	Jamboree Road to Market Place	Primary	63'	45
97	Bryan Avenue	Market Place to El Camino Real	Primary	63'	45
98	Bryan Avenue	Rubicon to Culver Drive	Primary	63'	45
99	Bryan Avenue	El Camino Real to Rubicon	Primary	63'	45
100	Bryan Avenue	Eastwood to Jeffrey Road	Primary	63'	45
101	Bryan Avenue	Westwood to Yale Avenue	Primary	63'	45
102	Bryan Avenue	Culver Drive to Westwood	Primary	63'	45
103	Bryan Avenue	Yale Avenue to Eastwood	Primary	63'	45
104	Cadence	Pusan to Chinon	Commuter	38'	40
105	Cadence	Bosque to Pusan	Commuter	38'	40
106	Cadence	Ridge Valley (O Street) to Bosque	Commuter	38'	40
107	Cadence	Chinon to Merit	Commuter	38'	40
108	Cadence	Merit to Astor	Commuter	38'	40
109	California Avenue	University Drive to Academy Way	Primary	63'	40
110	California Avenue	Campus Drive to Harvard Avenue	Primary	63'	40
111	California Avenue	Theory to Bison Avenue	Primary	63'	40
112	Campus Drive	Carlson Avenue to University Drive	Commuter	50'	50
113	Campus Drive	University Drive to Bridge Road	Primary	63'	50
114	Campus Drive	Jamboree Road to Carlson Avenue	Primary	63'	50
115	Campus Drive	Stanford Court to Berkeley Avenue	Primary	63'	50
116	Campus Drive	California Avenue to Culver Drive	Primary	63'	50
117	Campus Drive	Berkeley Avenue to Cornell	Primary	63'	50
118	Campus Drive	Martin to Von Karman Avenue	Primary	63'	50



Table 1

119	Campus Drive	Culver Drive to Paseo Montoya (Turtle Rock Drive)	Primary	63'	50
120	Campus Drive	Von Karman Avenue to Teller Avenue	Primary	63'	50
121	Campus Drive	MacArthur Boulevard to Martin	Primary	63'	50
122	Campus Drive	Teller Avenue to Jamboree Road	Primary	63'	50
123	Carlson Avenue	Michelson Drive to Campus Drive	Primary	63'	50
124	Chinon	Irvine Boulevard to Cadence	Commuter	38'	25
125	Creek Road	Alton Parkway to Barranca Parkway	Primary	63'	25
126	Culver Drive	Michelson Drive to I-405 SB Off-Ramp	Major	84'	55
127	Culver Drive	I-405 SB Off-Ramp to I-405 NB Off Ramp	Major	84'	55
128	Culver Drive	I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)	Major	84'	55
129	Culver Drive	Scottsdale Drive to I-5 SB Off- Ramp	Major	84'	55
130	Culver Drive	I-405 NB Off-Ramp to San Leandro	Major	84'	55
131	Culver Drive	San Leandro to Main Street	Major	84'	55
132	Culver Drive	Harvard Avenue to University Drive	Major	84'	55
133	Culver Drive	Trabuco Road to Farwell Avenue	Major	80'	55
134	Culver Drive	Alton Parkway to Barranca Parkway	Major	84'	55
135	Culver Drive	Main Street to Alton Parkway	Major	84'	55
136	Culver Drive	Warner Avenue to Irvine Center Drive	Major	84'	55
137	Culver Drive	Walnut Avenue to Scottsdale Dive	Major	84'	55
138	Culver Drive	Barranca Parkway to Warner Avenue	Major	84'	55
139	Culver Drive	Shady Canyon Drive to Palo Verde	Primary	63'	55
140	Culver Drive	Deerfield Avenue to Walnut Avenue	Major	84'	55
141	Culver Drive	Sandburg Way to Michelson Drive	Major	84'	55
142	Culver Drive	Irvine Center Drive to Deerfield Avenue	Major	84'	55
143	Culver Drive	Palo Verde to Campus Drive	Primary	63'	55
144	Culver Drive	University Drive to Sandburg Way	Major	84'	55
145	Culver Drive	Farwell Avenue to Bryan Avenue	Major	80'	55
146	Culver Drive	Campus Drive to High School	Major	84'	55
147	Culver Drive	High School to Harvard Avenue	Major	84'	55
148	Culver Drive	Bryan Avenue to Florence	Major	84'	55
149	Culver Drive	Portola Parkway to Settlers	Primary	63'	55

Table 1

150	Culver Drive	Florence to Irvine Boulevard	Major	84'	55
151	Culver Drive	Irvine Boulevard to Viewpark	Major	84'	55
152	Culver Drive	Viewpark to Meadowood	Major	84'	55
153	Culver Drive	Settlers to Furrow	Primary	63'	55
154	Culver Drive	Meadowood to Portola Parkway	Major	84'	55
155	Discovery Drive	Irvine Center Drive to Laguna Canyon Road	Primary	63'	40
156	Discovery Drive	Waterworks Way to Irvine Center Drive	Primary	63'	40
157	East Yale Loop	Alton Parkway to Witherspoon	Primary	63'	40
158	East Yale Loop	Osborn Street to Barranca Parkway	Primary	63'	40
159	East Yale Loop	Yale Avenue to Springbrook South	Primary	63'	40
160	East Yale Loop	Springbrook North to Alton Parkway	Primary	63'	40
161	East Yale Loop	Woodspring to Yale Avenue	Primary	63'	40
162	East Yale Loop	Barranca Parkway to Eastshore	Primary	63'	40
163	Eastwood	Bryan Avenue to Monticello	Commuter	38'	35
164	Eastwood	Columbus to Bryan Avenue	Commuter	38'	35
165	El Camino Real	Jamboree Road to Alliance (SR-261 Bridge)	Primary	63'	40
166	El Camino Real North	El Camino Real to Bryan Avenue	Primary	63'	40
167	Fairbanks	Alton Parkway to Astor	Commuter	38'	40
168	Fairbanks	Irvine Boulevard to Alton Parkway	Commuter	38'	40
169	Fairchild Road	MacArthur Boulevard to Jamboree Road	Primary	63'	45
170	Gateway Boulevard	Alton Parkway to Irvine Center Drive	Primary	63'	30
171	Gateway Boulevard	Spectrum Center Drive (Fortune Drive) to Alton Parkway	Primary	63'	30
172	Gateway Boulevard	Irvine Center Drive to Meridian	Primary	63'	30
173	Great Park Boulevard	Sand Canyon to Ridge Valley	Primary	60'	50
174	Great Park Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	Primary	63'	50
175	Great Park Boulevard (EB)	Bosque to Skyhawk	Commuter	38'	50
176	Great Park Boulevard (WB)	Bosque to Skyhawk	Commuter	38'	50
177	Harvard Avenue	University Drive to Michelson Drive	Commuter	38'	45
178	Harvard Avenue	Michelson Drive to Coronado	Primary	63'	45
179	Harvard Avenue	San Marino to Alton Parkway	Primary	63'	45
180	Harvard Avenue	Coronado to Main Street	Primary	63'	45

Table 1

181	Harvard Avenue	San Carlo to San Marino	Primary	63'	45
182	Harvard Avenue	Main Street to San Carlo	Primary	63'	45
183	Harvard Avenue	Alton Parkway to San Leon	Primary	63'	45
184	Harvard Avenue	San Juan to Barranca Parkway	Primary	63'	45
185	Harvard Avenue	San Leon to San Juan	Primary	63'	45
186	Harvard Avenue	Irvine Center Drive to Deerfield Avenue	Primary	63'	45
187	Harvard Avenue	Deerfield Avenue to Poplar Street	Primary	63'	45
188	Harvard Avenue	Barranca Parkway to Warner Avenue	Primary	63'	45
189	Harvard Avenue	Bridge Road to University Drive	Primary	63'	45
190	Harvard Avenue	Paseo Westpark to Irvine Center Drive	Primary	63'	45
191	Harvard Avenue	Poplar Street to Walnut Avenue	Commuter	50'	45
192	Harvard Avenue	California Avenue to Berkeley Avenue	Primary	63'	45
193	Harvard Avenue	Culver Drive to California Avenue	Primary	63'	45
194	Harvard Avenue	Berkeley to Bridge Road	Primary	63'	45
195	Harvard Avenue	Warner Avenue to Paseo Westpark	Primary	63'	45
196	Hicks Canyon Drive	Delamesa to Yale Avenue	Commuter	50'	35
197	Hornet (5th St)	Ridge Valley (O Street) to Bosque	Commuter	38'	25
198	Hubble	Irvine Center Drive to Bunsen	Commuter	38'	25
199	Irvine Boulevard	SR-133 NB Off- Ramp to Ridge Valley (O Street)	Major	84'	55
200	Irvine Boulevard	SR-133 SB Off-Ramp to SR-133 NB Off-Ramp	Major	84'	55
201	Irvine Boulevard	Sand Canyon to SR-133 SB Off-Ramp	Major	80'	55
202	Irvine Boulevard	Merit to Alton	Major	84'	55
203	Irvine Boulevard	Journey to Sand Canyon Avenue	Major	84'	55
204	Irvine Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	Major	84'	55
205	Irvine Boulevard	Pusan Way to Chinon (B Street)	Major	84'	55
206	Irvine Boulevard	Palo Lado to Yale Avenue	Major	84'	55
207	Irvine Boulevard	Culver Drive to Palo Lado	Major	84'	55
208	Irvine Boulevard	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	Major	84'	55
209	Irvine Boulevard	Old Myford Road to Market Place	Major	84'	55
210	Irvine Boulevard	Bosque (LY Street) to Modjeska	Major	84'	55
211	Irvine Boulevard	Jamboree Road to Old Myford Road	Major	84'	55

Table 1

212	Irvine Boulevard	Market Place to SR-261 SB Off-Ramp	Major	84'	55
213	Irvine Boulevard	Jeffrey Road to Groveland	Major	84'	55
214	Irvine Boulevard	Bake Parkway to Lake Forest Drive	Major	84'	55
215	Irvine Boulevard	Independence Way (The Groves)/The Groves to Jeffrey Road	Major	84'	55
216	Irvine Boulevard	Chinon (B Street) to Merit	Major	84'	55
217	Irvine Boulevard	SR-261 NB Off-Ramp to Central Park	Major	84'	55
218	Irvine Boulevard	Pueblo Norte to Independence Way (The Groves)/ Parkwood	Major	84'	55
219	Irvine Boulevard	Yale Avenue to Pueblo Norte	Major	84'	55
220	Irvine Boulevard	Modjeska to Pusan Way	Major	84'	55
221	Irvine Boulevard	Central Park Avenue to Culver Drive	Major	84'	55
222	Irvine Boulevard	Parker to Bake Parkway	Major	84'	55
223	Irvine Boulevard	Alton Parkway to Fairbanks	Major	84'	55
224	Irvine Center Drive	Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp	Major	80'	50
225	Irvine Center Drive	Orange Tree to Valley Oak Drive	Major	84'	50
226	Irvine Center Drive	I-405 SB Off-Ramp to Research	Major	80'	50
227	Irvine Center Drive	Irvine Valley College to Orange Tree	Major	84'	50
228	Irvine Center Drive	Fontaine Avenue to Jeffrey Road	Major	84'	50
229	Irvine Center Drive	Culver Drive to Deerwood	Major	84'	50
230	Irvine Center Drive	Deerwood to Yale Avenue	Major	84'	50
231	Irvine Center Drive	Yale Avenue to Fontaine Avenue	Major	84'	50
232	Irvine Center Drive	Jeffrey Road to Irvine Valley College	Major	84'	50
233	Irvine Center Drive	Alton Parkway to Spectrum	Major	84'	50
234	Irvine Center Drive	Spectrum to Pacifica	Major	84'	50
235	Irvine Center Drive	Hearthstone to Culver Drive	Major	84'	50
236	Irvine Center Drive	Charter to Barranca Parkway	Major	84'	50
237	Irvine Center Drive	Jamboree Road to Harvard Avenue	Major	84'	50
238	Irvine Center Drive	Pacifica to Entertainment (Enterprise/Fortune)	Major	84'	50
239	Irvine Center Drive	Valley Oak Drive to Sand Canyon Avenue	Major	84'	50
240	Irvine Center Drive	Harvard Avenue to Hearthstone	Major	84'	50
241	Irvine Center Drive	Research to Hubble	Major	84'	50
242	Irvine Center Drive	Barranca Parkway to Gateway Boulevard	Major	84'	50

Table 1

243	Irvine Center Drive	Bake Parkway to Muller	Major	84'	50
244	Irvine Center Drive	Discovery to Charter	Major	84'	50
245	Irvine Center Drive	Hubble to Bake Parkway	Major	84'	50
246	Irvine Center Drive	Muller to Tesla	Major	84'	50
247	Irvine Center Drive	Sand Canyon Avenue to Odyssey	Major	84'	50
248	Irvine Center Drive	Tesla to Scientific Way	Major	84'	50
249	Irvine Center Drive	Scientific Way to Lake Forest Drive	Major	84'	50
250	Irvine Center Drive	Gateway Boulevard to Alton Parkway	Major	84'	50
251	Irvine Center Drive	Laguna Canyon Road to Discovery	Major	84'	50
252	Irvine Center Drive	Odyssey to Laguna Canyon Road	Major	84'	50
253	Irvine Center Drive (Edinger)	Redhill Avenue to Jamboree Road	Major	84'	50
254	Jamboree Road	I-5 SB Off-Ramp to I-5 NB Off-Ramp	Major	84'	55
255	Jamboree Road	I-405 SB Off-Ramp to I-405 NB Off Ramp	Major	80'	55
256	Jamboree Road	Walnut Avenue to Michelle Drive	Major	84'	55
257	Jamboree Road	I-405 NB Off-Ramp to Main Street	Major	100'	55
258	Jamboree Road	Michelle Drive to I-5 SB Off-Ramp	Major	84'	55
259	Jamboree Road	Main Street to Kelvin Avenue	Major	100'	55
260	Jamboree Road	Michelson Drive to I-405 SB Off-Ramp	Major	110'	55
261	Jamboree Road	Kelvin Avenue to McGaw Avenue	Major	100'	55
262	Jamboree Road	McGaw Avenue to Alton Parkway	Major	100'	55
263	Jamboree Road	Birch Street to Campus Drive	Major	84'	55
264	Jamboree Road	Dupont Drive to Michelson Drive	Major	80'	55
265	Jamboree Road	Alton Parkway to Beckman	Major	100'	55
266	Jamboree Road	Fairchild Road to Birch Street	Major	80'	55
267	Jamboree Road	Beckman to Barranca Parkway	Major	100'	55
268	Jamboree Road	I-5 NB Off-Ramp to El Camino Real	Major	100'	55
269	Jamboree Road	Campus Drive to Dupont Drive	Major	80'	55
270	Jamboree Road	El Camino Real to West Drive	Major	100'	55
271	Jamboree Road	West Drive to Bryan Avenue	Major	100'	55
272	Jamboree Road	Bryan Avenue to Irvine Boulevard	Major	100'	55
273	Jamboree Road	Koll Center to Fairchild Road	Major	80'	55

Table 1

274	Jamboree Road	MacArthur Boulevard to Koll Center	Major	80'	55
275	Jamboree Road	Irvine Boulevard to Portola Parkway	Major	84'	55
276	Jamboree Road	Warner Avenue to Edinger Avenue	Expressway	64'	55
277	Jamboree Road	Barranca Parkway to Warner Avenue	Expressway	64'	55
278	Jamboree Road	Edinger Avenue to Walnut Avenue	Expressway	64'	55
279	Jeffrey Road	Walnut Avenue to I-5 NB Off-Ramp	Major	84'	45
280	Jeffrey Road	I-5 NB Off-Ramp to Roosevelt	Major	80'	45
281	Jeffrey Road	Poplar (Meadows) to Walnut Avenue	Major	84'	45
282	Jeffrey Road	Alton Parkway to Barranca Parkway	Major	84'	45
283	Jeffrey Road	Irvine Center Drive to Poplar (Meadows)	Major	84'	45
284	Jeffrey Road	I-405 NB Off-Ramp to Quail Creek	Major	84'	45
285	Jeffrey Road	Barranca Parkway to Irvine Valley College	Major	84'	45
286	Jeffrey Road	Quail Creek to Alton Parkway	Major	84'	45
287	Jeffrey Road	Irvine Valley College to Irvine Center Drive	Major	84'	45
288	Jeffrey Road	Trabuco Road to Hideaway	Major	84'	45
289	Jeffrey Road	Hideaway to Bryan Avenue	Major	84'	45
290	Jeffrey Road	Roosevelt to Grove	Major	80'	45
291	Jeffrey Road	Grove to Trabuco Road	Major	80'	45
292	Jeffrey Road	Bryan Avenue to Irvine Boulevard	Major	84'	45
293	Jeffrey Road	Encore to Portola Parkway	Major	84'	45
294	Jeffrey Road	Irvine Boulevard to Encore	Major	84'	45
295	Jeronimo Road	Goodyear to Bake Parkway	Primary	63'	45
296	Jeronimo Road	Alton Parkway to Goodyear	Primary	63'	45
297	Laguna Canyon Road	Old Laguna Canyon Road to Lake Forest Drive	Major	84'	55
298	Laguna Canyon Road	Laguna Canyon Freeway to Quail Hill Parkway	Primary	63'	55
299	Laguna Canyon Road	Discovery to Sand Canyon Avenue	Primary	63'	55
300	Laguna Canyon Road	I-405 Overcrossing to Pasteur	Commuter	50'	50
301	Laguna Canyon Road	Irvine Center Drive to Discovery	Primary	63'	55
302	Laguna Canyon Road	Quail Hill Parkway to I-405 Overcrossing	Commuter	50'	50
303	Laguna Canyon Road	Pasteur to Alton Parkway	Primary	63'	55
304	Laguna Canyon Road	Waterworks to Irvine Center Drive	Primary	63'	55

Table 1

305	Laguna Canyon Road	Alton Parkway to Barranca Parkway	Primary	63'	55
306	Laguna Canyon Road	Barranca Parkway to Waterworks	Primary	63'	55
307	Lake Forest Drive	Hidden Canyon to Laguna Canyon Road	Primary	63'	50
308	Lake Forest Drive	Bake Parkway to Hidden Canyon (Romano)	Primary	63'	50
309	Lake Forest Drive	Tesla to Bake Parkway	Major	84'	50
310	Lake Road	Alton Parkway to Barranca Parkway	Commuter	50'	25
311	Lynx	Irvine Boulevard to Astor	Commuter	38'	25
312	MacArthur Boulevard	I-405 SB Off-Ramp to Michelson Drive	Major	100'	60
313	MacArthur Boulevard	Main Street to I-405 NB Off-Ramp	Major	100'	60
314	MacArthur Boulevard	I-405 NB Off-Ramp and I-405 SB Off-Ramp	Major	100'	60
315	MacArthur Boulevard	Jamboree Road to Fairchild Road	Major	84'	45
316	MacArthur Boulevard	Fairchild Road to University Drive	Major	84'	45
317	MacArthur Boulevard	Fitch to Red Hill Avenue	Major	80'	45
318	MacArthur Boulevard	Michelson Drive to Douglas	Major	100'	45
319	MacArthur Boulevard	Douglas to Campus Drive	Major	100'	45
320	MacArthur Boulevard	Skypark to Main Street	Major	80'	45
321	MacArthur Boulevard	Redhill Avenue to Skypark	Major	84'	45
322	MacArthur Boulevard	Birch Street to Jamboree Road	Major	84'	45
323	MacArthur Boulevard	Campus Drive to Birch Street	Major	100'	45
324	Main Street	Gillette Avenue to Von Karman Avenue	Major	80'	45
325	Main Street	MacArthur Boulevard to Mercantile	Major	80'	45
326	Main Street	Executive Park to MacArthur Boulevard	Major	84'	45
327	Main Street	Von Karman Avenue to Cartwright	Major	84'	45
328	Main Street	McDermott to Red Hill Avenue	Major	84'	45
329	Main Street	Red Hill Avenue to Executive Circle	Major	84'	45
330	Main Street	Jamboree Road to Union	Major	84'	45
331	Main Street	Culver Drive to West Yale Loop	Primary	63'	45
332	Main Street	Siglo to Jamboree Road	Major	84'	45
333	Main Street	Veneto to Harvard Avenue	Major	84'	45
334	Main Street	Paseo Westpark to Culver Drive	Primary	63'	45
335	Main Street	Harvard Avenue to San Mateo	Primary	63'	45

Table 1

336	Marine Way	Sand Canyon Avenue to Ridge Valley (O Street)	Commuter	50'	40
337	Marine Way	Alton Parkway to Bake Parkway	Primary	63'	40
338	Marine Way	Lynx to Barranca Parkway	Primary	63'	40
339	Marine Way	County Access to Treble	Primary	63'	40
340	Marine Way	Ridge Valley (O Street) to Skyhawk	Primary	63'	40
341	Marine Way	Skyhawk to County Access	Primary	63'	40
342	Marine Way	Barranca Parkway to Alton Parkway	Primary	63'	40
343	Marine Way	Treble to Lynx	Primary	63'	40
344	McGaw Avenue	Von Karman Avenue to Jamboree Road	Primary	63'	35
345	McGaw Avenue	Red Hill Avenue to Von Karman Avenue	Primary	63'	35
346	McGaw Avenue	Daimler to Red Hill Avenue	Primary	63'	35
347	McGaw Avenue	Jamboree Road to Murphy Avenue	Primary	63'	35
348	Meadowood	Culver Drive to Canyonwood	Primary	63'	25
349	Meridian	Spectrum to Alton Parkway	Primary	63'	30
350	Meridian	Alton Parkway to Gateway Boulevard	Primary	63'	30
351	Merit	Irvine Boulevard to Cadence	Commuter	38'	25
352	Michelson Drive	Riparian to Harvard Avenue	Primary	63'	40
353	Michelson Drive	Almond Tree Lane to Yale Avenue	Commuter	38'	40
354	Michelson Drive	Von Karman Avenue to Obsidian	Primary	63'	40
355	Michelson Drive	Parkside to Culver Drive	Primary	63'	40
356	Michelson Drive	Gillman to Seton/Sandburg Way	Commuter	38'	40
357	Michelson Drive	Carlson to Prince	Primary	75'	40
358	Michelson Drive	MacArthur Boulevard to Dupont Drive	Primary	63'	40
359	Michelson Drive	Harvard Avenue to Parkside	Primary	63'	40
360	Michelson Drive	Bixby to Von Karman Avenue	Primary	63'	40
361	Michelson Drive	Jamboree Road to Carlson	Primary	60'	40
362	Michelson Drive	Teller to Jamboree Road	Primary	60'	40
363	Michelson Drive	Jordan East to University Drive	Secondary	30'	40
364	Michelson Drive	Culver Drive to Angell	Primary	40'	40
365	Modjeska (A Street)	Portola Springs to Irvine Boulevard	Commuter	30'	45
366	Modjeska (A Street)	South of Irvine Boulevard	Commuter	38'	45



Table 1

367	Muirlands Boulevard	Bake Parkway to City Limits	Primary	63'	45
368	Muirlands Boulevard	Alton Parkway to Sterling	Primary	63'	45
369	Muirlands Boulevard	Wrigley to Bake Parkway	Primary	63'	45
370	Newport Coast Drive	SR-73 NB Off-Ramp to Turtle Ridge	Primary	63'	40
371	Newport Coast Drive	Turtle Crest to Bonita Canyon Drive	Primary	63'	40
372	Nightmist	Sand Canyon Avenue to Tulip (Road C)	Primary	63'	30
373	Northwood	Yale Avenue to Savannah	Commuter	38'	35
374	Northwood	Goldrush to Yale Avenue	Commuter	38'	35
375	Oak Canyon Drive	Valley Oak Drive to Sand Canyon Avenue	Commuter	38'	45
376	Pacifica	Gateway to Barranca Parkway	Primary	63'	40
377	Pacifica	Alton Parkway to Gateway	Primary	63'	40
378	Pacifica	Irvine Center Drive to Fortune Drive (Spectrum Center Drive)	Primary	63'	40
379	Pacifica	Meridian to Alton Parkway	Primary	63'	40
380	Park Place	Christamon South to Yale Avenue	Primary	63'	30
381	Portola Parkway	Bee Canyon Access Road to Sand Canyon Avenue	Primary	63'	55
382	Portola Parkway	Jeffrey Road to Bee Canyon Access Road	Primary	63'	55
383	Portola Parkway	Arrowhead to Ridge Valley Parkway	Primary	63'	55
384	Portola Parkway	Sand Canyon Avenue to Arrowhead	Primary	63'	55
385	Portola Parkway	Portola Springs to SR-241 SB Off-Ramp	Primary	63'	55
386	Portola Parkway	Gatepark to Culver Drive	Major	84'	55
387	Portola Parkway	ETC-6 (SR-261) NB Off-Ramp to Gatepark	Major	84'	55
388	Portola Parkway	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	Major	84'	55
389	Portola Parkway	Jamboree Road to Bellevue	Major	84'	55
390	Portola Parkway	Bellevue to ETC-6 (SR-261) SB Off-Ramp	Major	84'	55
391	Portola Parkway	Yale Avenue to Jeffrey Road	Major	84'	55
392	Portola Parkway	Culver Drive to Yale Avenue	Major	84'	55
393	Portola Parkway	Silverado to Portola Springs	Primary	63'	55
394	Pusan	Irvine Boulevard to Cadence	Commuter	38'	25
395	Quail Hill Parkway	Shady Canyon Drive to Passage	Primary	63'	45
396	Quail Hill Parkway	East Knollcrest to Laguna Canyon Road	Primary	63'	45
397	Quassar Drive (Spectrum)	Irvine Center Drive to Spectrum Center Drive (Fortune)	Primary	40'	25

Table 1

398	Red Hill Avenue	MacArthur Boulevard to McGaw Avenue	Major	84'	50
399	Red Hill Avenue	I-405 Over Crossing to Main Street	Primary	63'	50
400	Red Hill Avenue	Alton Parkway to Deere Avenue	Major	84'	50
401	Red Hill Avenue	McGaw Avenue to Alton Parkway	Major	84'	50
402	Red Hill Avenue	Deere Avenue to Barranca Parkway	Major	84'	50
403	Red Hill Avenue	Skypark East to MacArthur Boulevard	Primary	60'	50
404	Red Hill Avenue	Main Street to Skypark East	Primary	60'	50
405	Research Drive	Hubble to Bake Parkway	Primary	63'	45
406	Research Drive	Scientific to Lake Forest Drive	Primary	63'	45
407	Research Drive	Bake Parkway to Muller	Primary	63'	45
408	Research Drive	Irvine Center Drive to Bunsen	Primary	63'	45
409	Ridge Valley (O Street)	Irvine Boulevard to Trabuco Road (Great Park Boulevard)	Primary	63'	45
410	Ridge Valley (O Street)	Portola Parkway to Irvine Boulevard	Primary	63'	45
411	Ridge Valley (O Street)	Trabuco Road (Great Park Boulevard) to Marine Way	Primary	63'	45
412	Ridge Valley (O Street)	Ranchland to Portola Parkway	Commuter	38'	45
413	Ridgeline Drive	Concordia East to University Drive	Secondary	40'	35
414	Ridgeline Drive	Turtle Rock Drive to San Simeon	Secondary	40'	35
415	Rockfield Avenue	Whatney to McLaren	Primary	63'	45
416	Rockfield Avenue	Bake Parkway to Whatney	Primary	63'	45
417	Rockfield Avenue	Thomas to Bake Parkway	Primary	63'	45
418	Roosevelt	Jeffrey Road to Vision	Primary	63'	40
419	Roosevelt	Yale Avenue to Van Buren	Commuter (Divided)	30'	40
420	Roosevelt	Vision to Bay Tree	Primary	63'	40
421	Roosevelt	Nimitz to Jeffrey Road	Primary	63'	40
422	Roosevelt	Tulip (Road C) to Sand Canyon Avenue	Primary	63'	40
423	Royal Oak	Alton Parkway to Eaglecreek	Commuter (Divided)	30'	35
424	Sand Canyon Avenue	Oak Canyon Drive to Burt Road	Major	84'	50
425	Sand Canyon Avenue	Irvine Center Drive to Oak Canyon Drive	Major	84'	50
426	Sand Canyon Avenue	I-405 NB Off-Ramp to Alton Parkway	Primary	60'	50
427	Sand Canyon Avenue	Burt Road to I-5 SB Off-Ramp	Major	80'	50
428	Sand Canyon Avenue	Marine to I-5 NB Off-Ramp	Major	100'	50

Table 1

429	Sand Canyon Avenue	Trabuco Road to Towngate	Major	84'	50
430	Sand Canyon Avenue	Barranca Parkway to Waterworks	Major	84'	50
431	Sand Canyon Avenue	I-5 SB Off-Ramp to Marine	Major	100'	50
432	Sand Canyon Avenue	Hospital to Barranca Parkway	Major	84'	50
433	Sand Canyon Avenue	Nightmist to Roosevelt	Major	100'	50
434	Sand Canyon Avenue	I-405 SB Off-Ramp to I-405 NB Off-Ramp	Primary	60'	50
435	Sand Canyon Avenue	I-5 NB Off-Ramp to Nightmist	Major	100'	50
436	Sand Canyon Avenue	Towngate to Irvine Boulevard	Major	84'	50
437	Sand Canyon Avenue	Waterworks to Irvine Center Drive	Major	84'	50
438	Sand Canyon Avenue	Irvine Boulevard to Portola Parkway	Primary	63'	50
439	Sand Canyon Avenue	Roosevelt to Trabuco Road	Major	100'	50
440	Sand Canyon Avenue	Alton Parkway to Hospital	Major	80'	50
441	Sand Canyon/Shady Canyon	Quail Hill Parkway to I-405 SB Ramps	Primary	60'	50
442	Scientific Way	Irvine Center Drive to Wald	Primary	63'	35
443	Shady Canyon Drive	Culver Drive/Bonita Canyon Drive to Cloverfield	Commuter	38'	50
444	Shady Canyon Drive	Bommer Canyon Road to Sunnyhill	Commuter	50'	50
445	Skyhawk	Great Park Boulevard to Marine Way	Primary	63'	25
446	Southwood	Yale Avenue to Colt	Commuter	38'	35
447	Southwood	Challenger to Yale Avenue	Commuter	38'	35
448	Spectrum Center Drive (Fortune Drive)	Pacifica to Quassar Drive (Spectrum )	Primary	63'	30
449	Spectrum Center Drive (Fortune Drive)	Quassar Drive (Spectrum ) to Gatewayb	Primary	63'	30
450	Sunnyhill	Shady Canyon Drive to Turtle Rock Drive	Primary	63'	25
451	Technology Drive	Barranca Parkway to Alton Parkway	Primary	63'	45
452	Technology Drive	Old Laguna Canyon Road to I-5/SR-133 Undercrossing	Primary	63'	45
453	Technology Drive	I-5/SR-133 to Barranca Parkway	Primary	63'	45
454	Technology Drive	Ada to Alton Parkway	Primary	63'	45
455	Toledo Way	Bake Parkway to City Limits	Primary	63'	50
456	Toledo Way	Goodyear to Bake Parkway	Primary	63'	50
457	Toledo Way	Alton Parkway to Parker	Primary	63'	50
458	Trabuco Road	Keystone to Sand Canyon Avenue	Primary	63'	45
459	Trabuco Road	Jeffrey Road to Keystone	Primary	63'	45

Table 1

460	Trabuco Road	Culver Drive to I-5 NB Off-Ramp	Primary	63'	45
461	Trabuco Road	Monroe to Yale Avenue	Primary	63'	45
462	Trabuco Road	I-5 NB Off-Ramp to Monroe	Primary	63'	45
463	Trabuco Road	Yale Avenue to Remington	Primary	63'	45
464	Trabuco Road	Remington to Jeffrey Road	Primary	63'	45
465	Turtle Ridge Drive	Federation Way to Bonita Canyon	Primary	63'	45
466	Turtle Rock Drive	Ridgeline to Willowleaf	Commuter	38'	45
467	Turtle Rock Drive	Silkwood to Sunnyhill	Commuter	38'	45
468	Turtle Rock Drive	Canyon Park to Ridgeline	Commuter	38'	45
469	Turtle Rock Drive	Sunnyhill to Southernwood	Commuter	38'	45
470	Turtle Rock Drive	Campus Drive to Hillgate	Primary	63'	45
471	Turtle Rock Drive	Paseo Segovia to Campus Drive	Secondary	40'	45
472	University Drive	Golden Glow to Yale Avenue	Primary	63'	50
473	University Drive	Ridgeline to Michelson Drive	Primary	75'	50
474	University Drive	Culver Drive to Golden Glow	Primary	63'	50
475	University Drive	Yale Avenue to Ridgeline	Primary	63'	50
476	University Drive	Michelson Drive to I-405 SB Off-Ramp	Major	84'	50
477	University Drive	Mesa to Campus Drive	Primary	60'	50
478	University Drive	MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	Primary	60'	50
479	University Drive	California Avenue to Mesa	Primary	60'	50
480	University Drive	Campus Drive to Harvard Avenue	Major	84'	50
481	University Drive	SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	Major	50'	50
482	University Drive	SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps	Major	84'	50
483	University Drive	San Joaquin to Culver Drive	Major	84'	50
484	University Drive	Harvard Avenue to San Joaquin	Major	84'	50
485	Valley Oak Drive	Hawkcreek to Barranca Parkway	Primary	63'	50
486	Valley Oak Drive	Irvine Center Drive to Oak Canyon Drive	Commuter	50'	50
487	Valley Oak Drive	Barranca Parkway to Irvine Center Drive	Primary	63'	50
488	Valley Oak Drive	Alton Parkway to Hawkcreek	Primary	63'	50
489	Von Karman Avenue	Marriott to Morse Avenue	Primary	63'	45
490	Von Karman Avenue	Michelson Drive to Quartz	Primary	63'	45

Table 1

491	Von Karman Avenue	McGaw Avenue to Alton Parkway	Primary	63'	45
492	Von Karman Avenue	Alton Parkway to Barranca Parkway	Primary	75'	45
493	Von Karman Avenue	Main Street to Anchor	Primary	63'	45
494	Von Karman Avenue	Anchor to McGaw Avenue	Primary	63'	45
495	Von Karman Avenue	Morse to Main Street	Primary	63'	45
496	Von Karman Avenue	Martin to Dupont Drive	Primary	63'	45
497	Von Karman Avenue	Campus Drive to Martin	Primary	63'	45
498	Von Karman Avenue	Dupont Drive to Michelson Drive	Primary	63'	45
499	Walnut Avenue	Jeffrey Road to I-5 SB Off-Ramp	Primary	63'	45
500	Walnut Avenue	Myford Road to Jamboree Road SB Off-Ramp	Primary	63'	45
501	Walnut Avenue	The Mall Street to Culver Drive	Primary	63'	45
502	Walnut Avenue	Harvard Avenue to The Mall Street	Primary	63'	45
503	Walnut Avenue	Franciscan Street to Ravenwood Street	Primary	63'	45
504	Walnut Avenue	Ravenwood Street to Yale Avenue	Primary	63'	45
505	Walnut Avenue	Culver Drive to Franciscan Street	Primary	63'	45
506	Walnut Avenue	Peters Canyon Road to Harvard Avenue	Major	84'	45
507	Walnut Avenue	Jamboree Road NB Off-Ramp to Peters Canyon Road	Major	84'	45
508	Walnut Avenue	Yale Avenue to Kazan Street	Primary	63'	45
509	Walnut Avenue	Wisteria to Jeffrey Road	Primary	63'	45
510	Warner Avenue	Jamboree Road SB Off-ramp to Construction North	Primary	63'	45
511	Warner Avenue	Construction North to Harvard Avenue	Primary	63'	45
512	Warner Avenue	Harvard Avenue to Paseo Westpark	Primary	63'	45
513	Warner Avenue	Santa Ynez to Culver Drive	Primary	63'	45
514	Warner Avenue	Culver Drive to West Yale Loop	Primary	63'	45
515	West Yale Loop	Alton Parkway to Blue Lake North	Primary	63'	40
516	West Yale Loop	Eagle Run to Main Street	Primary	63'	40
517	West Yale Loop	Thunder Run to Yale Avenue	Primary	63'	40
518	West Yale Loop	Main Street to Timber Run	Primary	63'	40
519	West Yale Loop	Yale Avenue to Shorebird	Primary	63'	40
520	West Yale Loop	Warner Avenue to Stonecreek South	Primary	63'	40
521	West Yale Loop	Barranca Parkway to Alton Parkway	Primary	63'	40

Table 1

522	West Yale Loop	Stonecreek North to Warner Avenue	Primary	63'	40
523	West Yale Loop	Birdsong to Barranca Parkway	Primary	63'	40
524	Westwood	Yorktown to Bryan Avenue	Commuter	38'	35
525	Westwood	Bryan Avenue to Leaf	Commuter	38'	35
526	Yale Avenue	Deerfield Avenue to Winvale Avenue	Commuter	38'	45
527	Yale Avenue	Hicks Canyon Drive to Meadowood	Commuter	38'	45
528	Yale Avenue	Walnut Avenue to Roosevelt	Secondary	40'	45
529	Yale Avenue	Roosevelt to Trabuco Road	Primary	63'	45
530	Yale Avenue	Irvine Center Drive to Deerfield Avenue	Primary	63'	45
531	Yale Avenue	West Yale Loop to Irvine Center Drive	Primary	63'	45
532	Yale Avenue	Winvale Avenue to Karen Ann Lane	Primary	63'	45
533	Yale Avenue	Karen Ann Lane to Walnut Avenue	Primary	63'	45
534	Yale Avenue	Trabuco Road to Southwood	Primary	63'	45
535	Yale Avenue	Southwood to Bryan Avenue	Primary	63'	45
536	Yale Avenue	Northwood to Irvine Boulevard	Primary	63'	45
537	Yale Avenue	Bryan Avenue to Monticello	Primary	63'	45
538	Yale Avenue	Irvine Boulevard to Park Place	Primary	63'	45
539	Yale Avenue	University Drive to Royce	Commuter	50'	45
540	Yale Court	Arborwood to Portola Parkway	Commuter	38'	25

<sup>1</sup> City of Irvine General Plan.

<sup>2</sup> Based upon the right-of-way distances for each roadway classification provided in the General Plan and Project Traffic Report.

Table 2

Table 2: Average Daily Traffic Volumes

ID	Roadway	Segment	Average Daily Traffic Volumes <sup>1</sup>					
			Existing	Current General Plan	Conservative	Cumulative Conservative	Preferred	Muulative Preferred
1	Ada	Barranca Parway to Marine Way	0	0	23,114	23,117	23,050	23,050
2	Ada	Alton Parkway to Barranca PARKway	4,000	19,232	31,726	31,720	31,443	31,284
3	Alton Parkway	Enterprise to I-5 NB Off-Ramp	42,200	56,884	81,472	81,648	76,615	76,734
4	Alton Parkway	I-5 NB Off-Ramp to Technology Drive West	45,900	60,594	86,184	86,442	80,851	80,974
5	Alton Parkway	East Yale Loop to Jeffrey Road	29,100	30,534	32,626	32,830	32,166	32,275
6	Alton Parkway	Gateway Boulevard to Enterprise	26,800	35,234	49,611	49,714	46,610	46,790
7	Alton Parkway	Jeffrey Road to Royal Oak	22,000	23,495	26,386	26,627	25,401	25,682
8	Alton Parkway	Daimler Street to Red Hill Avenue	5,000	23,780	25,087	25,127	24,851	24,892
9	Alton Parkway	Culver Drive to West Yale Loop	23,600	24,362	25,096	25,181	24,627	24,826
10	Alton Parkway	West Yale Loop to Lake Road	23,100	23,892	25,022	25,249	24,512	24,661
11	Alton Parkway	Technology Drive West to Ada	29,800	39,191	52,329	52,629	49,987	49,944
12	Alton Parkway	Creek Road to East Yale Loop	22,100	23,067	24,792	24,987	24,159	24,400
13	Alton Parkway	Red Hill Avenue to Von Karman Avenue	13,900	21,216	24,224	24,832	23,510	24,050
14	Alton Parkway	Lake Road to Creek Road	21,800	22,890	23,527	23,753	22,987	23,143
15	Alton Parkway	Telemetry to Banting	17,100	20,313	23,656	23,832	23,191	23,349
16	Alton Parkway	Irvine Boulevard to Commercentre	33,800	39,324	37,812	38,199	38,024	38,497
17	Alton Parkway	Jenner to Telemetry	17,000	20,130	23,298	23,455	22,846	22,981
18	Alton Parkway	Irvine Center Drive to Gateway Boulevard	22,900	30,165	41,786	42,235	39,281	39,393
19	Alton Parkway	Sand Canyon Avenue to Hospital	26,100	36,781	36,925	37,175	37,094	37,269
20	Alton Parkway	Laguna Canyon Road to Jenner	17,000	19,926	22,824	22,971	22,385	22,495
21	Alton Parkway	Technology Drive East to Barranca Pkwy/Muirlands Blvd	25,800	34,162	41,377	41,733	37,771	38,222
22	Alton Parkway	Royal Oak to Valley Oak Drive	18,800	20,001	21,871	22,072	21,298	21,595
23	Alton Parkway	Banting to Pacifica	14,800	18,390	21,569	21,772	21,046	21,170
24	Alton Parkway	Barranca Pkwy/Muirlands Blvd to Jeronimo Road	32,200	33,762	39,021	39,264	33,513	33,780
25	Alton Parkway	Ada to Technology Drive East	26,200	32,909	36,707	36,976	33,970	33,965
26	Alton Parkway	Von Karman Avenue to Jamboree Road	15,900	17,845	20,273	20,473	19,636	19,836
27	Alton Parkway	Jeronimo Road to Hughes	29,900	30,838	30,649	30,700	31,395	31,395
28	Alton Parkway	Hughes to Morgan	28,300	29,010	29,715	29,715	29,715	29,715
29	Alton Parkway	Morgan to Toledo Way	23,900	24,745	25,331	25,439	25,095	25,095
30	Alton Parkway	San Marino to Culver Drive	23,900	24,868	25,956	26,151	25,417	25,692

Table 2

31	Alton Parkway	Jamboree Road to Murphy Avenue	20,000	22,978	25,156	26,387	24,653	25,799
32	Alton Parkway	Hospital to Laguna Canyon Road	18,700	22,303	25,499	25,755	24,790	25,005
33	Alton Parkway	Valley Oak Drive to Sand Canyon Avenue	20,500	22,026	24,321	24,481	23,843	24,016
34	Alton Parkway	Murphy Avenue to Harvard Avenue	20,300	22,029	24,016	25,087	23,566	24,679
35	Alton Parkway	Foster to Irvine Boulevard	19,700	24,872	23,305	23,532	23,154	23,362
36	Alton Parkway	Fairbanks to Foster	17,800	23,257	22,341	22,575	21,916	22,132
37	Alton Parkway	Toledo Way to Bertea	20,800	21,840	21,840	21,840	21,840	21,840
38	Alton Parkway	Pacifica to Meridian	14,800	18,738	23,324	23,780	22,678	22,898
39	Alton Parkway	Bertea to Fairbanks	20,300	21,315	21,315	21,315	21,315	21,315
40	Alton Parkway	Meridian to Irvine Center Drive	14,400	17,783	21,018	21,241	20,601	20,652
41	Alton Parkway	Paseo Westpark to San Marino	19,400	19,914	21,047	21,248	20,504	20,780
42	Alton Parkway	Harvard Avenue to Paseo Westpark	15,500	16,294	18,516	19,161	17,861	18,451
43	Astor	Lynx to Fairbanks	2,200	19,138	19,799	20,000	19,393	19,506
44	Astor	Cadence to Lynx	0	15,633	14,995	15,144	14,767	14,820
45	Bake Parkway	I-5 NB Off-Ramp to Rockfield Boulevard	71,500	91,457	98,304	98,423	95,631	95,791
46	Bake Parkway	Muirlands Boulevard to Jeronimo Road	58,900	60,885	62,986	63,562	61,319	61,823
47	Bake Parkway	Rockfield Boulevard to Muirlands Boulevard	61,900	66,745	67,539	67,848	66,285	66,605
48	Bake Parkway	Jeronimo Road to Toledo Way	48,500	49,574	51,196	51,605	49,538	49,866
49	Bake Parkway	Toledo Way to Cromwell	44,900	45,682	46,627	46,916	45,757	46,021
50	Bake Parkway	Cromwell to Irvine Boulevard	43,400	45,725	45,084	45,418	45,473	45,675
51	Bake Parkway	Research Drive to I-5 SB Off-Ramp	22,100	26,918	28,944	29,328	28,172	28,545
52	Bake Parkway	Irvine Center Drive to Research Drive	8,000	9,085	9,673	10,154	9,545	9,944
53	Bake Parkway	Lake Forest Drive to Irvine Center Drive	4,900	6,286	6,866	7,404	6,811	7,379
54	Banting	Alton Parkway to Barranca Parkway	3,000	4,452	5,569	5,549	5,427	5,367
55	Barranca Parkway	Pacifica to Irvine Center Drive	19,100	24,831	36,132	36,249	34,247	34,481
56	Barranca Parkway	Banting to Pacifica	19,900	25,806	32,152	32,424	31,312	31,533
57	Barranca Parkway	I-5 HOV Ramp to Technology Drive West	16,200	20,598	33,565	33,665	31,030	31,208
58	Barranca Parkway	Technology Drive West to Ada	18,700	23,700	31,332	31,494	30,409	30,730
59	Barranca Parkway	Irvine Center Drive to I-5 HOV Ramp	14,300	20,207	30,796	30,886	28,916	29,070
60	Barranca Parkway	Culver Drive to West Yale Loop	26,400	26,675	28,434	28,530	27,904	28,213
61	Barranca Parkway	East Yale Loop to Jeffrey Road	24,700	25,229	28,062	28,336	27,289	27,535
62	Barranca Parkway	West Yale Loop to Lake Road	24,500	25,495	27,146	27,246	26,674	26,880
63	Barranca Parkway	Ada to Alton Parkway	17,800	28,456	27,638	27,756	26,859	27,022
64	Barranca Parkway	Lake Road to Creek Road	22,400	23,501	25,488	25,599	24,910	25,130
65	Barranca Parkway	Red Hill Avenue to Armstrong Avenue	35,300	44,978	48,793	49,503	47,771	48,369



Table 2

66	Barranca Parkway	Discovery/Herchel to Banting	15,900	21,685	24,618	24,817	24,148	24,373
67	Barranca Parkway	Lyon to East Yale Loop	21,300	21,895	24,159	24,364	23,579	23,735
68	Barranca Parkway	Creek Road to Lyon	20,900	21,564	23,764	23,971	23,163	23,344
69	Barranca Parkway	Von Karman Avenue to Jamboree Road	31,400	38,982	42,548	42,568	41,461	41,730
70	Barranca Parkway	Sand Canyon Avenue to Laguna Canyon Road	12,000	19,260	21,751	21,968	20,188	20,369
71	Barranca Parkway	Armstrong Avenue to Von Karman Avenue	35,200	36,440	39,468	40,050	38,551	39,026
72	Barranca Parkway	Valley Oak Drive to Sand Canyon Avenue	13,700	18,496	20,139	20,406	19,557	19,863
73	Barranca Parkway	Jamboree Road to Construction Circle	25,500	29,130	32,282	32,325	31,326	31,487
74	Barranca Parkway	Santa Rosa to Culver Drive	23,600	28,283	31,019	31,498	30,197	30,840
75	Barranca Parkway	FedEx to Discovery/Herchel	12,800	15,244	19,005	19,158	17,670	17,901
76	Barranca Parkway	Jeffrey Road to Valley Oak Drive	11,500	15,857	18,482	18,899	17,571	17,889
77	Barranca Parkway	Laguna Canyon Road to FedEx	12,700	14,848	18,440	18,600	17,200	17,450
78	Barranca Parkway	Pullman Street to Red Hill Avenue	30,500	36,153	38,000	37,853	37,452	37,245
79	Barranca Parkway	Construction Circle to Fire Station	21,600	25,175	28,462	28,571	27,431	27,622
80	Barranca Parkway	Fire Station to Harvard Avenue	21,600	25,175	28,462	28,571	27,431	27,622
81	Barranca Parkway	Paseo Westpark to Santa Rosa	21,000	25,294	28,055	28,602	27,241	27,925
82	Barranca Parkway	Harvard Avenue to Paseo Westpark	20,500	23,160	25,884	26,663	25,071	25,798
83	Bay Tree	Trabuco Road to Roosevelt	2,100	2,723	2,675	2,681	2,742	2,720
84	Beacon	Ridge Valley to Benchmark	0	3,119	3,586	3,641	3,509	3,587
85	Benchmark (LN Street)	Ridge Valley (O Street) to Bosque	0	1,829	1,728	1,729	1,745	1,743
86	Bison Avenue	SR-73 NB Off-Ramp to California Avenue	20,400	26,221	25,685	26,007	25,773	26,152
87	Bonita Canyon Drive	MacArthur Boulevard to SR-73	29,100	30,318	30,850	30,956	30,737	30,797
88	Bonita Canyon Drive	Turtle Ridge to Shady Canyon Drive	16,400	20,645	20,798	20,905	20,728	20,746
89	Bonita Canyon Drive	Newport Coast Drive to Turtle Ridge	16,400	18,987	19,217	19,301	19,103	19,113
90	Bonita Canyon Drive	SR-73 NB Off-Ramp to Newport Coast Drive	16,400	17,778	18,311	18,474	18,113	18,182
91	Bosque	Cadence to Great Park Boulevard	7,700	11,850	12,852	12,932	12,836	12,864
92	Bosque	Irvine Boulevard to Benchmark (LN Street)	3,600	7,686	8,905	8,882	8,601	8,621
93	Bosque	Benchmark to Cadence	3,600	7,750	8,135	8,107	7,908	7,923
94	Bosque	Great Park Boulevard to Beacon	0	1,880	1,844	1,843	1,828	1,837
95	Bosque	Beacon to S 5th Street	0	1,524	1,609	1,609	1,591	1,592
96	Bryan Avenue	Jamboree Road to Market Place	20,700	21,684	22,410	22,671	21,962	22,217
97	Bryan Avenue	Market Place to El Camino Real	20,700	21,735	21,846	21,480	21,600	21,675
98	Bryan Avenue	Rubicon to Culver Drive	20,700	21,735	21,397	21,726	21,545	21,708
99	Bryan Avenue	El Camino Real to Rubicon	20,700	21,735	21,246	21,533	21,404	21,532
100	Bryan Avenue	Eastwood to Jeffrey Road	10,600	11,981	14,512	14,724	13,773	14,067

Table 2

101	Bryan Avenue	Westwood to Yale Avenue	11,900	12,001	13,258	13,412	12,845	12,963
102	Bryan Avenue	Culver Drive to Westwood	11,900	12,292	13,038	13,139	12,666	12,769
103	Bryan Avenue	Yale Avenue to Eastwood	10,600	11,130	13,028	13,268	12,224	12,526
104	Cadence	Pusan to Chinon	5,500	4,989	7,071	7,074	6,990	7,014
105	Cadence	Bosque to Pusan	7,100	5,049	6,542	6,540	6,549	6,558
106	Cadence	Ridge Valley (O Street) to Bosque	3,500	4,822	4,909	4,864	4,745	4,749
107	Cadence	Chinon to Merit	3,500	1,575	3,298	3,333	3,194	3,233
108	Cadence	Merit to Astor	0	1,397	1,698	1,688	1,700	1,697
109	California Avenue	University Drive to Academy Way	10,000	15,529	15,758	20,000	15,819	19,919
110	California Avenue	Campus Drive to Harvard Avenue	7,800	9,756	9,868	9,868	9,927	9,803
111	California Avenue	Theory to Bison Avenue	7,600	9,438	9,160	9,414	9,277	9,378
112	Campus Drive	Carlson Avenue to University Drive	17,000	27,465	28,942	29,529	28,558	29,153
113	Campus Drive	University Drive to Bridge Road	22,200	31,499	32,687	32,395	32,269	31,999
114	Campus Drive	Jamboree Road to Carlson Avenue	17,000	28,851	30,504	31,090	30,078	30,629
115	Campus Drive	Stanford Court to Berkeley Avenue	22,200	27,338	27,642	27,465	27,506	27,357
116	Campus Drive	California Avenue to Culver Drive	16,500	26,438	26,572	26,506	26,527	26,405
117	Campus Drive	Berkeley Avenue to Cornell	16,500	21,044	21,468	21,170	21,299	21,031
118	Campus Drive	Martin to Von Karman Avenue	12,100	15,957	17,343	17,979	16,910	17,561
119	Campus Drive	Culver Drive to Paseo Montoya (Turtle Rock Drive)	15,100	15,713	16,048	16,071	15,918	15,896
120	Campus Drive	Von Karman Avenue to Teller Avenue	10,300	13,785	14,824	15,306	14,558	15,040
121	Campus Drive	MacArthur Boulevard to Martin	12,100	13,788	14,285	14,566	14,164	14,413
122	Campus Drive	Teller Avenue to Jamboree Road	10,300	11,365	12,126	12,374	11,947	12,202
123	Carlson Avenue	Michelson Drive to Campus Drive	6,000	13,044	13,241	13,352	13,196	13,323
124	Chinon	Irvine Boulevard to Cadence	2,700	4,025	4,470	4,475	4,756	4,756
125	Creek Road	Alton Parkway to Barranca Parkway	3,900	4,622	4,907	4,892	4,726	4,796
126	Culver Drive	Michelson Drive to I-405 SB Off-Ramp	53,900	58,147	61,300	61,019	61,011	60,961
127	Culver Drive	I-405 SB Off-Ramp to I-405 NB Off Ramp	53,900	60,031	59,960	59,692	59,757	59,836
128	Culver Drive	I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)	57,400	60,471	60,969	61,103	60,773	60,896
129	Culver Drive	Scottsdale Drive to I-5 SB Off- Ramp	57,400	60,310	59,474	59,478	59,917	59,899
130	Culver Drive	I-405 NB Off-Ramp to San Leandro	53,900	57,001	56,487	56,681	56,621	56,751
131	Culver Drive	San Leandro to Main Street	51,500	53,202	53,021	52,972	53,104	53,116
132	Culver Drive	Harvard Avenue to University Drive	46,300	52,683	53,377	53,363	53,257	53,212
133	Culver Drive	Trabuco Road to Farwell Avenue	57,400	61,294	59,213	59,139	59,765	59,466
134	Culver Drive	Alton Parkway to Barranca Parkway	47,600	51,629	51,504	51,467	51,477	51,527
135	Culver Drive	Main Street to Alton Parkway	46,400	50,144	49,818	50,023	50,071	50,100

Table 2

136	Culver Drive	Warner Avenue to Irvine Center Drive	45,500	48,921	48,908	49,242	48,906	49,101
137	Culver Drive	Walnut Avenue to Scottsdale Dive	44,800	48,508	47,641	47,556	48,151	48,057
138	Culver Drive	Barranca Parkway to Warner Avenue	44,700	47,184	47,548	47,883	47,408	47,820
139	Culver Drive	Shady Canyon Drive to Palo Verde	23,100	27,206	26,474	26,477	26,657	26,587
140	Culver Drive	Deerfield Avenue to Walnut Avenue	41,700	44,819	44,116	44,131	44,374	44,310
141	Culver Drive	Sandburg Way to Michelson Drive	38,000	43,901	44,200	44,162	44,140	44,084
142	Culver Drive	Irvine Center Drive to Deerfield Avenue	39,600	43,101	43,037	43,318	42,966	43,249
143	Culver Drive	Palo Verde to Campus Drive	23,100	24,255	24,255	24,255	24,255	24,255
144	Culver Drive	University Drive to Sandburg Way	34,900	40,605	40,878	40,821	40,840	40,762
145	Culver Drive	Farwell Avenue to Bryan Avenue	43,200	47,503	46,710	46,846	46,881	46,855
146	Culver Drive	Campus Drive to High School	35,900	40,178	39,825	40,099	39,865	40,109
147	Culver Drive	High School to Harvard Avenue	35,900	39,525	39,094	39,155	39,227	39,343
148	Culver Drive	Bryan Avenue to Florence	34,500	37,270	37,153	37,248	37,221	37,291
149	Culver Drive	Portola Parkway to Settlers	13,100	21,591	22,169	22,400	21,951	22,133
150	Culver Drive	Florence to Irvine Boulevard	33,600	36,440	36,281	36,395	36,398	36,478
151	Culver Drive	Irvine Boulevard to Viewpark	24,500	27,912	27,782	27,820	27,898	27,880
152	Culver Drive	Viewpark to Meadowood	24,500	27,661	26,857	26,773	27,143	27,007
153	Culver Drive	Settlers to Furrow	0	11,425	11,930	12,153	11,730	11,905
154	Culver Drive	Meadowood to Portola Parkway	16,700	19,435	19,384	19,447	19,462	19,491
155	Discovery Drive	Irvine Center Drive to Laguna Canyon Road	1,700	8,932	13,332	13,351	9,370	9,390
156	Discovery Drive	Waterworks Way to Irvine Center Drive	0	4,423	8,636	8,669	4,968	5,001
157	East Yale Loop	Alton Parkway to Witherspoon	10,900	12,625	13,590	13,632	13,294	13,347
158	East Yale Loop	Osborn Street to Barranca Parkway	10,200	11,855	12,938	12,986	12,601	12,680
159	East Yale Loop	Yale Avenue to Springbrook South	6,400	10,084	11,895	11,997	11,442	11,525
160	East Yale Loop	Springbrook North to Alton Parkway	6,400	8,140	8,574	8,626	8,475	8,506
161	East Yale Loop	Woodspring to Yale Avenue	6,400	6,731	7,199	7,261	7,005	7,059
162	East Yale Loop	Barranca Parkway to Eastshore	6,400	6,747	6,524	6,685	6,576	6,558
163	Eastwood	Bryan Avenue to Monticello	2,400	2,973	3,241	3,260	3,185	3,212
164	Eastwood	Columbus to Bryan Avenue	1,900	2,023	2,011	2,057	1,983	2,017
165	El Camino Real	Jamboree Road to Alliance (SR-261 Bridge)	18,500	18,775	19,398	19,548	19,240	19,372
166	El Camino Real North	El Camino Real to Bryan Avenue	6,200	6,510	6,553	6,459	6,482	6,466
167	Fairbanks	Alton Parkway to Astor	2,600	18,025	18,614	18,795	18,127	18,297
168	Fairbanks	Irvine Boulevard to Alton Parkway	0	9,256	9,466	9,507	9,449	9,527
169	Fairchild Road	MacArthur Boulevard to Jamboree Road	6,000	7,074	7,081	7,094	7,131	7,094
170	Gateway Boulevard	Alton Parkway to Irvine Center Drive	3,800	14,311	17,010	16,817	15,949	15,953

Table 2

171	Gateway Boulevard	Spectrum Center Drive (Fortune Drive) to Alton Parkway	6,600	10,892	12,678	12,537	12,089	12,135
172	Gateway Boulevard	Irvine Center Drive to Meridian	3,600	5,160	6,270	6,264	6,154	6,204
173	Great Park Boulevard	Sand Canyon to Ridge Valley	18,000	41,232	45,507	45,662	44,334	44,530
174	Great Park Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	5,400	20,241	23,162	23,409	22,427	22,566
175	Great Park Boulevard (EB)	Bosque to Skyhawk	0	7,039	8,824	9,050	8,353	8,512
176	Great Park Boulevard (WB)	Bosque to Skyhawk	0	6,351	7,648	7,680	7,471	7,517
177	Harvard Avenue	University Drive to Michelson Drive	19,000	21,732	22,851	23,172	22,728	23,043
178	Harvard Avenue	Michelson Drive to Coronado	24,800	29,191	31,028	31,339	30,921	31,293
179	Harvard Avenue	San Marino to Alton Parkway	24,500	27,906	29,121	29,801	28,966	29,486
180	Harvard Avenue	Coronado to Main Street	24,000	28,017	28,811	29,155	28,783	29,124
181	Harvard Avenue	San Carlo to San Marino	24,500	27,164	28,438	29,022	28,293	28,700
182	Harvard Avenue	Main Street to San Carlo	24,000	26,657	27,916	28,489	27,778	28,170
183	Harvard Avenue	Alton Parkway to San Leon	20,000	21,000	21,000	20,284	21,000	20,344
184	Harvard Avenue	San Juan to Barranca Parkway	20,000	20,509	21,000	20,554	21,000	20,616
185	Harvard Avenue	San Leon to San Juan	19,200	20,160	20,160	20,160	20,160	20,160
186	Harvard Avenue	Irvine Center Drive to Deerfield Avenue	10,000	15,559	15,757	15,703	15,465	15,471
187	Harvard Avenue	Deerfield Avenue to Poplar Street	10,000	15,473	15,478	15,436	15,200	15,226
188	Harvard Avenue	Barranca Parkway to Warner Avenue	16,300	17,075	17,135	17,252	17,010	17,230
189	Harvard Avenue	Bridge Road to University Drive	14,800	15,962	17,144	16,993	16,880	16,811
190	Harvard Avenue	Paseo Westpark to Irvine Center Drive	11,400	16,630	17,007	16,907	16,982	16,894
191	Harvard Avenue	Poplar Street to Walnut Avenue	8,600	13,344	13,653	13,736	13,278	13,424
192	Harvard Avenue	California Avenue to Berkeley Avenue	11,400	14,000	15,232	15,147	14,831	14,793
193	Harvard Avenue	Culver Drive to California Avenue	11,400	13,746	14,994	14,914	14,731	14,558
194	Harvard Avenue	Berkeley to Bridge Road	11,400	14,010	14,544	14,559	14,456	14,466
195	Harvard Avenue	Warner Avenue to Paseo Westpark	11,000	13,408	13,236	13,284	13,282	13,352
196	Hicks Canyon Drive	Delamesa to Yale Avenue	2,200	2,310	2,210	2,212	2,206	2,209
197	Hornet (5th St)	Ridge Valley (O Street) to Bosque	0	3,316	3,346	3,323	3,383	3,393
198	Hubble	Irvine Center Drive to Bunsen	2,100	2,224	2,322	2,420	2,333	2,425
199	Irvine Boulevard	SR-133 NB Off- Ramp to Ridge Valley (O Street)	40,100	42,105	41,249	41,517	42,105	42,105
200	Irvine Boulevard	SR-133 SB Off-Ramp to SR-133 NB Off-Ramp	39,100	41,055	40,804	41,000	41,055	40,173
201	Irvine Boulevard	Sand Canyon to SR-133 SB Off-Ramp	43,500	45,675	44,645	45,181	45,675	45,675
202	Irvine Boulevard	Merit to Alton	34,100	35,805	35,805	35,805	35,805	35,805
203	Irvine Boulevard	Journey to Sand Canyon Avenue	34,200	35,910	35,381	36,637	35,506	36,360
204	Irvine Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	30,700	32,235	32,010	32,240	32,235	31,486
205	Irvine Boulevard	Pusan Way to Chinon (B Street)	29,600	31,080	31,080	31,080	31,080	31,080

Table 2

206	Irvine Boulevard	Palo Lado to Yale Avenue	27,100	28,118	32,776	33,664	31,566	32,379
207	Irvine Boulevard	Culver Drive to Palo Lado	27,400	28,495	32,471	33,323	31,307	32,081
208	Irvine Boulevard	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	27,700	28,294	31,500	32,007	30,683	31,115
209	Irvine Boulevard	Old Myford Road to Market Place	26,500	27,891	31,742	32,352	30,767	31,303
210	Irvine Boulevard	Bosque (LY Street) to Modjeska	27,900	28,773	32,088	32,429	30,546	30,785
211	Irvine Boulevard	Jamboree Road to Old Myford Road	26,500	27,513	31,090	31,680	30,131	30,658
212	Irvine Boulevard	Market Place to SR-261 SB Off-Ramp	26,400	27,325	30,908	31,554	30,014	30,542
213	Irvine Boulevard	Jeffrey Road to Groveland	28,300	29,715	30,376	32,022	29,333	30,798
214	Irvine Boulevard	Bake Parkway to Lake Forest Drive	23,800	30,011	27,916	28,197	28,433	28,721
215	Irvine Boulevard	Independence Way (The Groves)/The Groves to Jeffrey Road	26,000	27,709	29,006	29,427	28,495	28,654
216	Irvine Boulevard	Chinon (B Street) to Merit	26,100	27,405	27,405	27,405	27,405	27,405
217	Irvine Boulevard	SR-261 NB Off-Ramp to Central Park	25,300	26,097	28,240	28,707	27,539	27,914
218	Irvine Boulevard	Pueblo Norte to Independence Way (The Groves)/ Parkwood	24,300	25,190	27,469	28,114	26,740	27,208
219	Irvine Boulevard	Yale Avenue to Pueblo Norte	24,300	25,057	27,285	27,924	26,562	27,027
220	Irvine Boulevard	Modjeska to Pusan Way	24,800	26,040	26,040	26,040	26,040	26,040
221	Irvine Boulevard	Central Park Avenue to Culver Drive	22,100	22,685	24,480	24,842	24,022	24,271
222	Irvine Boulevard	Parker to Bake Parkway	19,400	22,409	22,659	22,962	22,245	22,781
223	Irvine Boulevard	Alton Parkway to Fairbanks	17,100	17,955	17,955	17,955	17,955	17,955
224	Irvine Center Drive	Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp	38,500	51,275	52,889	53,953	51,614	52,865
225	Irvine Center Drive	Orange Tree to Valley Oak Drive	29,100	43,698	49,786	50,142	47,747	48,280
226	Irvine Center Drive	I-405 SB Off-Ramp to Research	35,200	46,454	47,340	48,675	46,681	48,133
227	Irvine Center Drive	Irvine Valley College to Orange Tree	29,100	42,382	48,817	49,177	46,642	47,178
228	Irvine Center Drive	Fontaine Avenue to Jeffrey Road	27,700	39,987	46,104	46,660	44,165	44,870
229	Irvine Center Drive	Culver Drive to Deerwood	29,400	39,661	45,624	45,919	43,788	44,248
230	Irvine Center Drive	Deerwood to Yale Avenue	28,700	39,150	45,180	45,516	43,331	43,804
231	Irvine Center Drive	Yale Avenue to Fontaine Avenue	27,100	38,813	45,578	46,236	43,453	44,189
232	Irvine Center Drive	Jeffrey Road to Irvine Valley College	29,100	40,074	44,489	44,688	42,819	43,078
233	Irvine Center Drive	Alton Parkway to Spectrum	24,400	34,648	42,406	42,966	39,703	40,201
234	Irvine Center Drive	Spectrum to Pacifica	24,500	33,982	41,920	42,370	39,224	39,643
235	Irvine Center Drive	Hearthstone to Culver Drive	26,000	36,389	39,524	39,645	38,396	38,654
236	Irvine Center Drive	Charter to Barranca Parkway	20,500	32,888	38,843	39,266	36,432	36,795
237	Irvine Center Drive	Jamboree Road to Harvard Avenue	29,400	33,538	35,809	35,938	35,050	35,164
238	Irvine Center Drive	Pacifica to Entertainment (Enterprise/Fortune)	25,500	33,656	36,722	37,251	35,060	35,691
239	Irvine Center Drive	Valley Oak Drive to Sand Canyon Avenue	20,200	31,525	36,773	37,095	35,045	35,398
240	Irvine Center Drive	Harvard Avenue to Hearthstone	26,000	31,072	33,946	34,007	32,966	33,081

Table 2

241	Irvine Center Drive	Research to Hubble	19,200	30,150	29,767	31,287	29,654	31,315
242	Irvine Center Drive	Barranca Parkway to Gateway Boulevard	15,500	27,369	32,213	32,542	30,054	30,428
243	Irvine Center Drive	Bake Parkway to Muller	19,200	31,012	29,382	30,258	29,430	30,410
244	Irvine Center Drive	Discovery to Charter	16,700	26,747	32,850	33,253	30,216	30,581
245	Irvine Center Drive	Hubble to Bake Parkway	18,900	29,424	27,974	28,520	27,897	28,602
246	Irvine Center Drive	Muller to Tesla	18,400	27,797	26,678	27,303	26,594	27,299
247	Irvine Center Drive	Sand Canyon Avenue to Odyssey	18,100	25,007	27,285	27,449	25,885	26,025
248	Irvine Center Drive	Tesla to Scientific Way	16,100	26,203	24,358	25,259	24,586	25,537
249	Irvine Center Drive	Scientific Way to Lake Forest Drive	16,400	24,631	23,241	24,211	23,463	24,377
250	Irvine Center Drive	Gateway Boulevard to Alton Parkway	14,700	21,437	23,879	24,509	22,763	23,257
251	Irvine Center Drive	Laguna Canyon Road to Discovery	15,000	20,659	24,024	24,356	22,810	23,090
252	Irvine Center Drive	Odyssey to Laguna Canyon Road	15,200	21,273	23,977	24,191	22,449	22,690
253	Irvine Center Drive (Edinger)	Redhill Avenue to Jamboree Road	28,800	37,743	39,543	40,036	38,705	39,103
254	Jamboree Road	I-5 SB Off-Ramp to I-5 NB Off-Ramp	66,500	69,825	69,825	69,825	69,825	69,825
255	Jamboree Road	I-405 SB Off-Ramp to I-405 NB Off Ramp	73,400	77,890	81,976	82,589	80,926	81,685
256	Jamboree Road	Walnut Avenue to Michelle Drive	55,000	59,833	60,442	60,520	60,211	60,362
257	Jamboree Road	I-405 NB Off-Ramp to Main Street	73,400	79,710	81,891	82,134	81,354	81,725
258	Jamboree Road	Michelle Drive to I-5 SB Off-Ramp	55,000	56,450	56,408	56,389	56,379	57,750
259	Jamboree Road	Main Street to Kelvin Avenue	61,200	67,444	70,975	71,714	70,210	70,902
260	Jamboree Road	Michelson Drive to I-405 SB Off-Ramp	74,300	84,006	88,495	88,960	86,971	87,488
261	Jamboree Road	Kelvin Avenue to McGaw Avenue	57,500	62,646	65,776	66,488	65,064	65,797
262	Jamboree Road	McGaw Avenue to Alton Parkway	56,700	61,804	64,955	65,760	64,320	65,261
263	Jamboree Road	Birch Street to Campus Drive	40,300	44,836	49,612	50,222	48,363	48,881
264	Jamboree Road	Dupont Drive to Michelson Drive	47,600	50,671	55,614	56,292	54,185	54,705
265	Jamboree Road	Alton Parkway to Beckman	53,900	56,746	59,192	60,116	58,506	59,551
266	Jamboree Road	Fairchild Road to Birch Street	37,500	46,728	50,815	51,524	49,498	50,091
267	Jamboree Road	Beckman to Barranca Parkway	51,700	53,974	54,823	55,530	54,535	55,555
268	Jamboree Road	I-5 NB Off-Ramp to El Camino Real	50,200	52,710	52,710	52,710	52,710	52,710
269	Jamboree Road	Campus Drive to Dupont Drive	40,200	42,224	46,420	47,220	45,590	46,225
270	Jamboree Road	El Camino Real to West Drive	50,200	52,735	51,138	50,741	51,446	51,075
271	Jamboree Road	West Drive to Bryan Avenue	50,200	52,526	51,091	50,973	51,319	51,212
272	Jamboree Road	Bryan Avenue to Irvine Boulevard	45,800	49,213	47,458	47,016	47,722	47,448
273	Jamboree Road	Koll Center to Fairchild Road	32,900	39,496	43,123	43,783	41,698	42,241
274	Jamboree Road	MacArthur Boulevard to Koll Center	34,300	39,695	42,776	43,209	41,222	41,473
275	Jamboree Road	Irvine Boulevard to Portola Parkway	24,500	29,887	29,015	28,920	29,193	29,128

Table 2

276	Jamboree Road	Warner Avenue to Edinger Avenue	83,900	85,506	87,509	87,609	87,026	87,248
277	Jamboree Road	Barranca Parkway to Warner Avenue	68,700	70,769	72,128	72,728	71,471	72,206
278	Jamboree Road	Edinger Avenue to Walnut Avenue	64,000	66,189	66,499	66,731	66,471	66,688
279	Jeffrey Road	Walnut Avenue to I-5 NB Off-Ramp	50,500	54,962	56,523	56,825	55,850	56,176
280	Jeffrey Road	I-5 NB Off-Ramp to Roosevelt	57,000	62,169	63,296	63,919	62,333	63,037
281	Jeffrey Road	Poplar (Meadows) to Walnut Avenue	44,600	49,562	50,868	51,048	50,514	50,683
282	Jeffrey Road	Alton Parkway to Barranca Parkway	44,200	46,090	50,717	50,925	49,193	49,443
283	Jeffrey Road	Irvine Center Drive to Poplar (Meadows)	42,900	47,470	48,682	48,837	48,338	48,484
284	Jeffrey Road	I-405 NB Off-Ramp to Quail Creek	44,400	45,688	50,815	51,159	48,513	49,021
285	Jeffrey Road	Barranca Parkway to Irvine Valley College	43,400	45,426	48,023	48,058	47,090	47,228
286	Jeffrey Road	Quail Creek to Alton Parkway	44,400	45,819	48,969	49,376	47,231	47,578
287	Jeffrey Road	Irvine Valley College to Irvine Center Drive	42,200	43,854	45,528	45,568	44,501	44,665
288	Jeffrey Road	Trabuco Road to Hideaway	35,700	38,135	37,721	38,141	37,737	38,113
289	Jeffrey Road	Hideaway to Bryan Avenue	35,700	38,018	37,668	38,123	37,660	38,065
290	Jeffrey Road	Roosevelt to Grove	37,200	40,456	41,046	41,043	40,485	40,531
291	Jeffrey Road	Grove to Trabuco Road	37,200	40,151	38,896	38,887	39,079	39,167
292	Jeffrey Road	Bryan Avenue to Irvine Boulevard	26,500	28,995	28,845	29,374	28,761	29,277
293	Jeffrey Road	Encore to Portola Parkway	10,400	16,559	15,420	14,548	15,646	14,766
294	Jeffrey Road	Irvine Boulevard to Encore	10,400	15,038	14,436	14,094	14,564	14,204
295	Jeronimo Road	Goodyear to Bake Parkway	7,700	8,433	8,085	8,085	8,085	7,959
296	Jeronimo Road	Alton Parkway to Goodyear	7,200	8,252	7,560	7,560	7,560	7,468
297	Laguna Canyon Road	Old Laguna Canyon Road to Lake Forest Drive	44,700	53,167	52,519	53,702	52,557	53,875
298	Laguna Canyon Road	Laguna Canyon Freeway to Quail Hill Parkway	10,000	16,794	16,624	16,770	16,659	16,794
299	Laguna Canyon Road	Discovery to Sand Canyon Avenue	5,100	10,943	15,112	15,177	13,807	13,867
300	Laguna Canyon Road	I-405 Overcrossing to Pasteur	5,500	8,635	8,544	8,634	8,507	8,576
301	Laguna Canyon Road	Irvine Center Drive to Discovery	3,900	9,104	13,381	13,313	9,537	9,516
302	Laguna Canyon Road	Quail Hill Parkway to I-405 Overcrossing	5,500	8,635	8,544	8,634	8,507	8,576
303	Laguna Canyon Road	Pasteur to Alton Parkway	6,000	8,294	8,491	8,608	8,352	8,455
304	Laguna Canyon Road	Waterworks to Irvine Center Drive	4,700	7,050	9,487	9,469	7,386	7,346
305	Laguna Canyon Road	Alton Parkway to Barranca Parkway	5,100	6,757	7,272	7,308	6,866	6,917
306	Laguna Canyon Road	Barranca Parkway to Waterworks	4,100	6,177	7,040	7,148	6,179	6,120
307	Lake Forest Drive	Hidden Canyon to Laguna Canyon Road	14,500	17,913	18,642	19,408	18,345	19,173
308	Lake Forest Drive	Bake Parkway to Hidden Canyon (Romano)	14,500	17,780	18,471	19,213	18,195	18,999
309	Lake Forest Drive	Tesla to Bake Parkway	10,700	13,227	13,734	14,514	13,505	14,318
310	Lake Road	Alton Parkway to Barranca Parkway	5,800	6,127	6,179	6,204	6,138	6,144

Table 2

311	Lynx	Irvine Boulevard to Astor	0	1,330	1,254	1,244	1,253	1,246
312	MacArthur Boulevard	I-405 SB Off-Ramp to Michelson Drive	51,800	57,170	61,860	62,587	60,659	61,683
313	MacArthur Boulevard	Main Street to I-405 NB Off-Ramp	50,300	58,639	60,715	61,233	60,198	60,713
314	MacArthur Boulevard	I-405 NB Off-Ramp and I-405 SB Off-Ramp	48,200	57,119	59,832	60,411	59,267	59,791
315	MacArthur Boulevard	Jamboree Road to Fairchild Road	37,900	39,795	39,795	39,795	39,795	39,795
316	MacArthur Boulevard	Fairchild Road to University Drive	37,900	38,766	39,349	39,243	39,738	39,408
317	MacArthur Boulevard	Fitch to Red Hill Avenue	40,900	41,798	42,207	42,124	41,993	41,553
318	MacArthur Boulevard	Michelson Drive to Douglas	36,200	40,849	45,005	46,388	43,680	45,212
319	MacArthur Boulevard	Douglas to Campus Drive	36,200	41,587	44,388	45,645	43,619	45,000
320	MacArthur Boulevard	Skypark to Main Street	29,800	33,703	33,157	33,482	33,051	33,180
321	MacArthur Boulevard	Redhill Avenue to Skypark	26,100	28,805	27,891	28,170	27,961	28,075
322	MacArthur Boulevard	Birch Street to Jamboree Road	18,300	19,634	20,778	21,485	20,454	21,177
323	MacArthur Boulevard	Campus Drive to Birch Street	19,400	22,000	23,178	24,205	22,933	23,909
324	Main Street	Gillette Avenue to Von Karman Avenue	32,500	38,628	45,614	46,084	44,129	44,818
325	Main Street	MacArthur Boulevard to Mercantile	32,500	36,531	39,827	40,229	39,170	39,493
326	Main Street	Executive Park to MacArthur Boulevard	24,000	26,869	28,554	28,777	28,179	28,337
327	Main Street	Von Karman Avenue to Cartwright	21,400	24,763	28,744	28,808	27,884	28,170
328	Main Street	McDermott to Red Hill Avenue	25,300	25,767	26,403	26,518	26,239	26,342
329	Main Street	Red Hill Avenue to Executive Circle	24,000	25,362	25,874	25,974	25,766	25,776
330	Main Street	Jamboree Road to Union	22,600	24,079	24,963	25,130	24,728	24,761
331	Main Street	Culver Drive to West Yale Loop	14,100	14,805	14,634	14,660	14,523	14,599
332	Main Street	Siglo to Jamboree Road	21,400	22,387	24,271	24,322	23,884	24,041
333	Main Street	Veneto to Harvard Avenue	22,600	23,730	23,292	23,421	23,172	23,207
334	Main Street	Paseo Westpark to Culver Drive	11,600	12,180	12,007	12,129	12,180	12,068
335	Main Street	Harvard Avenue to San Mateo	11,600	11,923	11,948	11,988	12,142	11,928
336	Marine Way	Sand Canyon Avenue to Ridge Valley (O Street)	14,400	38,752	40,895	40,977	40,411	40,541
337	Marine Way	Alton Parkway to Bake Parkway	0	29,934	33,007	33,132	31,689	31,983
338	Marine Way	Lynx to Barranca Parkway	0	32,584	32,066	32,174	32,229	32,277
339	Marine Way	County Access to Treble	3,200	12,788	26,373	26,495	25,917	26,072
340	Marine Way	Ridge Valley (O Street) to Skyhawk	5,900	21,357	25,442	25,478	24,715	24,784
341	Marine Way	Skyhawk to County Access	3,200	11,690	20,450	20,553	19,302	19,473
342	Marine Way	Barranca Parkway to Alton Parkway	700	15,956	17,902	17,922	17,824	17,909
343	Marine Way	Treble to Lynx	0	19,116	16,855	16,993	16,340	16,505
344	McGaw Avenue	Von Karman Avenue to Jamboree Road	8,600	11,998	14,522	14,638	13,868	13,966
345	McGaw Avenue	Red Hill Avenue to Von Karman Avenue	8,400	12,035	14,147	14,434	13,510	13,754



Table 2

346	McGaw Avenue	Daimler to Red Hill Avenue	6,500	9,107	9,147	9,107	9,063	9,179
347	McGaw Avenue	Jamboree Road to Murphy Avenue	3,000	4,320	4,734	4,648	4,424	4,528
348	Meadowood	Culver Drive to Canyonwood	10,400	10,920	10,920	10,668	10,920	10,920
349	Meridian	Spectrum to Alton Parkway	2,200	2,338	2,707	2,808	2,563	2,685
350	Meridian	Alton Parkway to Gateway Boulevard	1,700	1,950	2,238	2,259	2,184	2,205
351	Merit	Irvine Boulevard to Cadence	5,100	3,204	3,718	3,772	3,641	3,731
352	Michelson Drive	Riparian to Harvard Avenue	17,700	22,861	25,332	25,376	25,218	25,198
353	Michelson Drive	Almond Tree Lane to Yale Avenue	8,200	9,055	10,108	10,160	9,910	9,921
354	Michelson Drive	Von Karman Avenue to Obsidian	17,600	22,381	24,512	24,498	23,682	23,736
355	Michelson Drive	Parkside to Culver Drive	15,500	18,030	22,469	22,511	22,374	22,429
356	Michelson Drive	Gillman to Seton/Sandburg Way	8,200	8,623	9,393	9,500	9,165	9,208
357	Michelson Drive	Carlson to Prince	17,700	25,099	27,299	27,204	27,061	27,093
358	Michelson Drive	MacArthur Boulevard to Dupont Drive	17,600	18,637	21,065	21,112	20,323	20,337
359	Michelson Drive	Harvard Avenue to Parkside	15,500	18,101	18,016	18,076	17,916	18,003
360	Michelson Drive	Bixby to Von Karman Avenue	11,600	16,064	18,167	18,256	17,607	17,647
361	Michelson Drive	Jamboree Road to Carlson	17,700	24,519	25,554	25,363	25,486	25,364
362	Michelson Drive	Teller to Jamboree Road	20,700	24,548	25,444	25,464	25,530	25,600
363	Michelson Drive	Jordan East to University Drive	6,200	6,510	6,980	6,991	6,719	6,782
364	Michelson Drive	Culver Drive to Angell	8,200	8,600	8,905	8,947	8,757	8,789
365	Modjeska (A Street)	Portola Springs to Irvine Boulevard	10,800	13,585	13,698	13,789	13,725	13,817
366	Modjeska (A Street)	South of Irvine Boulevard	2,000	1,669	1,855	1,833	1,874	1,834
367	Muirlands Boulevard	Bake Parkway to City Limits	12,200	14,592	14,718	15,023	14,376	14,807
368	Muirlands Boulevard	Alton Parkway to Sterling	11,400	11,970	11,970	11,701	11,970	11,970
369	Muirlands Boulevard	Wrigley to Bake Parkway	11,400	11,711	11,970	11,970	11,970	11,970
370	Newport Coast Drive	SR-73 NB Off-Ramp to Turtle Ridge	14,500	17,431	17,293	17,365	17,333	17,310
371	Newport Coast Drive	Turtle Crest to Bonita Canyon Drive	11,800	12,390	12,138	12,158	12,101	12,122
372	Nightmist	Sand Canyon Avenue to Tulip (Road C)	9,000	12,094	11,314	11,178	11,630	11,501
373	Northwood	Yale Avenue to Savannah	4,500	4,646	4,780	4,798	4,715	4,741
374	Northwood	Goldrush to Yale Avenue	3,000	3,628	3,802	3,833	3,773	3,801
375	Oak Canyon Drive	Valley Oak Drive to Sand Canyon Avenue	6,000	7,939	13,369	13,331	12,082	12,109
376	Pacifica	Gateway to Barranca Parkway	8,100	10,905	12,617	12,784	12,406	12,565
377	Pacifica	Alton Parkway to Gateway	5,700	7,790	9,580	9,769	9,464	9,495
378	Pacifica	Irvine Center Drive to Fortune Drive (Spectrum Center Drive)	5,500	7,857	6,909	7,054	6,930	7,083
379	Pacifica	Meridian to Alton Parkway	2,400	3,742	4,572	4,576	4,476	4,479
380	Park Place	Christamon South to Yale Avenue	3,600	3,784	3,747	3,737	3,750	3,750

Table 2

381	Portola Parkway	Bee Canyon Access Road to Sand Canyon Avenue	17,900	22,658	24,951	25,814	24,011	24,775
382	Portola Parkway	Jeffrey Road to Bee Canyon Access Road	17,900	22,635	24,889	25,724	23,959	24,694
383	Portola Parkway	Arrowhead to Ridge Valley Parkway	15,300	22,644	23,410	23,934	23,161	23,621
384	Portola Parkway	Sand Canyon Avenue to Arrowhead	15,300	20,880	21,503	21,926	21,291	21,666
385	Portola Parkway	Portola Springs to SR-241 SB Off-Ramp	6,000	16,931	17,090	17,392	17,068	17,347
386	Portola Parkway	Gatepark to Culver Drive	22,700	26,146	29,312	30,092	28,306	29,181
387	Portola Parkway	ETC-6 (SR-261) NB Off-Ramp to Gatepark	22,700	26,024	28,911	29,669	27,985	28,743
388	Portola Parkway	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	22,700	25,264	28,023	28,810	27,082	27,901
389	Portola Parkway	Jamboree Road to Bellevue	22,700	24,960	27,703	28,532	26,830	27,621
390	Portola Parkway	Bellevue to ETC-6 (SR-261) SB Off-Ramp	22,700	24,770	27,438	28,239	26,584	27,354
391	Portola Parkway	Yale Avenue to Jeffrey Road	17,800	23,831	26,088	27,075	25,071	25,999
392	Portola Parkway	Culver Drive to Yale Avenue	17,800	21,489	22,869	23,470	22,276	22,874
393	Portola Parkway	Silverado to Portola Springs	7,600	11,969	12,134	12,381	12,067	12,310
394	Pusan	Irvine Boulevard to Cadence	1,500	2,434	2,468	2,449	2,470	2,449
395	Quail Hill Parkway	Shady Canyon Drive to Passage	15,200	15,960	15,648	15,772	15,448	15,541
396	Quail Hill Parkway	East Knollcrest to Laguna Canyon Road	8,500	10,254	9,734	9,762	9,917	9,900
397	Quassar Drive (Spectrum)	Irvine Center Drive to Spectrum Center Drive (Fortune)	1,800	1,991	2,026	2,051	1,981	1,994
398	Red Hill Avenue	MacArthur Boulevard to McGaw Avenue	38,200	41,924	44,982	45,998	44,189	45,131
399	Red Hill Avenue	I-405 Over Crossing to Main Street	19,700	20,812	22,560	22,980	22,062	22,478
400	Red Hill Avenue	Alton Parkway to Deere Avenue	28,000	30,843	31,869	32,372	31,427	32,238
401	Red Hill Avenue	McGaw Avenue to Alton Parkway	26,800	29,669	31,060	31,871	30,718	31,517
402	Red Hill Avenue	Deere Avenue to Barranca Parkway	26,700	29,582	29,932	30,440	29,672	30,497
403	Red Hill Avenue	Skypark East to MacArthur Boulevard	16,700	19,882	21,918	22,585	21,395	21,999
404	Red Hill Avenue	Main Street to Skypark East	14,600	17,274	18,979	19,603	18,423	18,933
405	Research Drive	Hubble to Bake Parkway	9,700	24,761	25,625	25,920	24,938	25,175
406	Research Drive	Scientific to Lake Forest Drive	10,100	15,994	15,298	16,713	15,327	16,919
407	Research Drive	Bake Parkway to Muller	11,600	12,604	12,951	13,395	12,774	13,241
408	Research Drive	Irvine Center Drive to Bunsen	8,600	9,824	10,459	10,553	10,214	10,299
409	Ridge Valley (O Street)	Irvine Boulevard to Trabuco Road (Great Park Boulevard)	9,900	15,535	15,025	14,991	14,874	14,983
410	Ridge Valley (O Street)	Portola Parkway to Irvine Boulevard	10,800	12,575	12,161	12,229	12,231	12,342
411	Ridge Valley (O Street)	Trabuco Road (Great Park Boulevard) to Marine Way	10,600	11,130	11,130	11,130	11,130	11,130
412	Ridge Valley (O Street)	Ranchland to Portola Parkway	900	935	930	931	936	935
413	Ridgeline Drive	Concordia East to University Drive	12,600	15,575	16,232	16,267	16,053	16,070
414	Ridgeline Drive	Turtle Rock Drive to San Simeon	12,600	14,257	15,110	15,191	14,883	14,923
415	Rockfield Avenue	Whatney to McLaren	12,000	15,880	16,500	16,792	16,154	16,541

Table 2

416	Rockfield Avenue	Bake Parkway to Whatney	5,000	6,694	7,559	7,636	7,259	7,372
417	Rockfield Avenue	Thomas to Bake Parkway	5,000	5,145	5,734	5,795	5,672	5,692
418	Roosevelt	Jeffrey Road to Vision	12,500	15,443	17,060	17,577	16,664	17,206
419	Roosevelt	Yale Avenue to Van Buren	8,500	8,812	9,191	9,343	8,969	9,058
420	Roosevelt	Vision to Bay Tree	10,500	14,654	16,183	16,893	15,775	16,387
421	Roosevelt	Nimitz to Jeffrey Road	12,500	14,187	14,507	14,604	14,499	14,608
422	Roosevelt	Tulip (Road C) to Sand Canyon Avenue	8,800	13,745	13,715	14,013	13,703	14,053
423	Royal Oak	Alton Parkway to Eaglecreek	4,600	4,830	4,830	4,830	4,830	4,830
424	Sand Canyon Avenue	Oak Canyon Drive to Burt Road	36,600	48,414	51,595	52,249	50,454	51,113
425	Sand Canyon Avenue	Irvine Center Drive to Oak Canyon Drive	35,800	45,483	49,313	50,129	49,167	50,013
426	Sand Canyon Avenue	I-405 NB Off-Ramp to Alton Parkway	36,600	44,364	46,506	46,785	45,532	45,922
427	Sand Canyon Avenue	Burt Road to I-5 SB Off-Ramp	37,500	51,493	53,826	54,479	53,029	53,622
428	Sand Canyon Avenue	Marine to I-5 NB Off-Ramp	38,800	59,568	60,722	62,427	60,688	62,433
429	Sand Canyon Avenue	Trabuco Road to Towngate	31,500	42,099	39,436	41,347	40,085	42,024
430	Sand Canyon Avenue	Barranca Parkway to Waterworks	26,100	36,308	39,030	39,517	38,043	38,582
431	Sand Canyon Avenue	I-5 SB Off-Ramp to Marine	38,800	49,577	50,537	51,956	50,509	51,961
432	Sand Canyon Avenue	Hospital to Barranca Parkway	26,800	34,191	37,782	38,333	35,931	36,289
433	Sand Canyon Avenue	Nightmist to Roosevelt	44,800	46,045	47,040	47,225	47,040	46,581
434	Sand Canyon Avenue	I-405 SB Off-Ramp to I-405 NB Off-Ramp	27,400	34,745	36,253	36,420	35,399	35,889
435	Sand Canyon Avenue	I-5 NB Off-Ramp to Nightmist	43,800	46,445	46,459	47,804	46,651	49,225
436	Sand Canyon Avenue	Towngate to Irvine Boulevard	26,908	35,972	34,028	36,276	34,490	36,746
437	Sand Canyon Avenue	Waterworks to Irvine Center Drive	26,100	31,409	33,123	33,662	33,082	33,598
438	Sand Canyon Avenue	Irvine Boulevard to Portola Parkway	13,600	18,121	17,682	23,085	17,874	23,306
439	Sand Canyon Avenue	Roosevelt to Trabuco Road	37,700	39,585	39,585	39,585	39,585	39,585
440	Sand Canyon Avenue	Alton Parkway to Hospital	26,800	31,835	34,402	34,877	32,774	33,129
441	Sand Canyon/Shady Canyon	Quail Hill Parkway to I-405 SB Ramps	21,700	22,794	23,990	24,017	23,802	23,970
442	Scientific Way	Irvine Center Drive to Wald	1,500	1,616	1,653	1,634	1,635	1,626
443	Shady Canyon Drive	Culver Drive/Bonita Canyon Drive to Cloverfield	8,100	8,410	9,409	9,541	9,123	9,242
7,727	Shady Canyon Drive	Bommer Canyon Road to Sunnyhill	7,000	7,350	8,049	8,202	7,752	7,888
445	Skyhawk	Great Park Boulevard to Marine Way	2,200	12,035	10,431	10,359	10,666	10,600
446	Southwood	Yale Avenue to Colt	3,000	3,003	3,054	3,070	3,031	3,052
447	Southwood	Challenger to Yale Avenue	2,600	2,867	2,909	2,909	2,798	2,844
448	Spectrum Center Drive (Fortune Drive)	Pacifica to Quassar Drive (Spectrum )	10,500	11,702	11,853	11,720	11,786	11,887
449	Spectrum Center Drive (Fortune Drive)	Quassar Drive (Spectrum ) to Gatewayb	11,900	13,210	13,277	13,355	13,116	13,271
450	Sunnyhill	Shady Canyon Drive to Turtle Rock Drive	5,600	5,827	6,807	6,895	6,602	6,698

Table 2

451	Technology Drive	Barranca Parkway to Alton Parkway	14,100	27,461	33,564	33,560	32,036	32,103
452	Technology Drive	Old Laguna Canyon Road to I-5/SR-133 Undercrossing	5,800	14,421	25,455	25,533	23,487	23,614
453	Technology Drive	I-5/SR-133 to Barranca Parkway	5,300	11,458	24,498	24,552	22,568	22,678
454	Technology Drive	Ada to Alton Parkway	1,700	2,747	6,550	6,603	5,528	5,697
455	Toledo Way	Bake Parkway to City Limits	7,600	8,101	7,798	7,876	7,905	8,035
456	Toledo Way	Goodyear to Bake Parkway	6,100	6,577	6,405	6,405	6,324	6,383
457	Toledo Way	Alton Parkway to Parker	5,300	6,118	5,994	6,030	5,838	5,879
458	Trabuco Road	Keystone to Sand Canyon Avenue	13,100	14,020	14,736	14,918	14,475	14,594
459	Trabuco Road	Jeffrey Road to Keystone	13,100	13,755	14,256	14,426	13,713	13,846
460	Trabuco Road	Culver Drive to I-5 NB Off-Ramp	12,000	12,898	13,483	13,569	13,214	13,275
461	Trabuco Road	Monroe to Yale Avenue	12,000	12,600	13,466	13,781	12,866	13,181
462	Trabuco Road	I-5 NB Off-Ramp to Monroe	12,000	12,600	13,135	13,404	12,616	12,860
463	Trabuco Road	Yale Avenue to Remington	10,500	11,025	12,278	12,594	11,616	11,949
464	Trabuco Road	Remington to Jeffrey Road	10,500	11,025	11,518	11,786	11,077	11,295
465	Turtle Ridge Drive	Federation Way to Bonita Canyon	0	21,210	20,930	20,959	21,017	20,977
466	Turtle Rock Drive	Ridgeline to Willowleaf	7,000	8,148	8,823	8,839	8,727	8,738
467	Turtle Rock Drive	Silkwood to Sunnyhill	7,200	7,856	8,720	8,790	8,572	8,638
468	Turtle Rock Drive	Canyon Park to Ridgeline	6,700	6,963	7,353	7,358	7,206	7,159
469	Turtle Rock Drive	Sunnyhill to Southernwood	3,500	3,609	3,658	3,664	3,588	3,587
470	Turtle Rock Drive	Campus Drive to Hillgate	6,700	7,089	7,260	7,303	7,125	7,106
471	Turtle Rock Drive	Paseo Segovia to Campus Drive	3,900	4,044	4,076	4,071	4,066	4,064
472	University Drive	Golden Glow to Yale Avenue	35,400	39,438	43,009	43,486	42,194	42,678
473	University Drive	Ridgeline to Michelson Drive	46,900	49,362	52,466	53,139	51,836	52,367
474	University Drive	Culver Drive to Golden Glow	34,500	38,353	41,770	42,225	41,000	41,441
475	University Drive	Yale Avenue to Ridgeline	34,200	35,343	37,097	37,727	36,567	36,983
476	University Drive	Michelson Drive to I-405 SB Off-Ramp	52,900	54,745	59,053	59,773	58,027	58,667
477	University Drive	Mesa to Campus Drive	34,000	42,065	45,247	46,258	44,446	45,486
478	University Drive	MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	34,000	42,129	44,232	46,885	43,634	46,290
479	University Drive	California Avenue to Mesa	34,000	40,950	44,280	45,113	43,321	44,330
480	University Drive	Campus Drive to Harvard Avenue	27,800	33,789	37,107	38,009	36,432	37,310
481	University Drive	SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	15,000	18,527	19,626	20,520	19,332	20,200
482	University Drive	SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps	26,000	31,273	32,890	34,513	32,489	34,047
483	University Drive	San Joaquin to Culver Drive	23,500	27,239	30,341	30,679	29,608	30,020
484	University Drive	Harvard Avenue to San Joaquin	23,500	27,126	30,225	30,550	29,483	29,892
485	Valley Oak Drive	Hawkcreek to Barranca Parkway	4,300	13,681	13,886	13,837	13,484	13,433

Table 2

486	Valley Oak Drive	Irvine Center Drive to Oak Canyon Drive	4,500	7,844	12,395	12,291	11,004	11,018
487	Valley Oak Drive	Barranca Parkway to Irvine Center Drive	4,200	8,042	11,075	11,266	10,125	10,317
488	Valley Oak Drive	Alton Parkway to Hawkcreek	5,100	6,753	6,689	6,590	6,517	6,501
489	Von Karman Avenue	Marriott to Morse Avenue	21,900	32,180	35,254	35,487	34,440	34,606
490	Von Karman Avenue	Michelson Drive to Quartz	21,300	30,568	34,068	34,303	33,121	33,326
491	Von Karman Avenue	McGaw Avenue to Alton Parkway	23,800	28,817	33,488	33,736	32,658	33,069
492	Von Karman Avenue	Alton Parkway to Barranca Parkway	26,200	35,462	41,190	41,710	40,666	41,216
493	Von Karman Avenue	Main Street to Anchor	23,100	27,652	32,693	33,066	31,991	32,464
494	Von Karman Avenue	Anchor to McGaw Avenue	23,100	27,101	31,540	31,904	30,891	31,313
495	Von Karman Avenue	Morse to Main Street	23,100	27,235	29,827	30,079	29,382	29,530
496	Von Karman Avenue	Martin to Dupont Drive	17,000	23,409	25,714	25,978	25,189	25,404
497	Von Karman Avenue	Campus Drive to Martin	17,000	23,065	25,190	25,324	24,686	24,957
498	Von Karman Avenue	Dupont Drive to Michelson Drive	17,000	23,141	25,012	25,306	24,689	24,911
499	Walnut Avenue	Jeffrey Road to I-5 SB Off-Ramp	21,600	31,658	34,800	34,873	34,097	34,208
500	Walnut Avenue	Myford Road to Jamboree Road SB Off-Ramp	20,400	21,679	22,977	23,422	22,555	22,735
501	Walnut Avenue	The Mall Street to Culver Drive	18,700	19,607	21,348	21,556	20,739	21,014
502	Walnut Avenue	Harvard Avenue to The Mall Street	18,700	19,566	21,283	21,466	20,671	20,921
503	Walnut Avenue	Franciscan Street to Ravenwood Street	17,800	18,104	19,627	20,217	19,169	19,748
504	Walnut Avenue	Ravenwood Street to Yale Avenue	17,800	18,267	19,787	19,725	19,154	19,073
505	Walnut Avenue	Culver Drive to Franciscan Street	17,800	18,122	19,171	19,522	18,884	19,198
506	Walnut Avenue	Peters Canyon Road to Harvard Avenue	20,300	23,611	26,108	26,432	25,274	25,674
507	Walnut Avenue	Jamboree Road NB Off-Ramp to Peters Canyon Road	20,300	23,091	25,075	25,325	24,408	24,721
508	Walnut Avenue	Yale Avenue to Kazan Street	11,900	13,893	14,945	15,195	14,408	14,757
509	Walnut Avenue	Wisteria to Jeffrey Road	11,900	14,036	14,674	14,856	14,301	14,563
510	Warner Avenue	Jamboree Road SB Off-ramp to Construction North	25,400	28,474	29,278	28,958	29,075	28,741
511	Warner Avenue	Construction North to Harvard Avenue	16,800	19,399	20,424	20,168	20,183	19,878
512	Warner Avenue	Harvard Avenue to Paseo Westpark	11,400	13,312	14,244	14,205	13,998	13,949
513	Warner Avenue	Santa Ynez to Culver Drive	9,100	10,265	11,546	11,717	11,117	11,142
514	Warner Avenue	Culver Drive to West Yale Loop	8,700	9,123	10,716	10,973	10,312	10,428
515	West Yale Loop	Alton Parkway to Blue Lake North	8,000	9,388	9,475	9,360	9,402	9,462
516	West Yale Loop	Eagle Run to Main Street	8,000	9,045	9,135	9,015	9,077	9,126
517	West Yale Loop	Thunder Run to Yale Avenue	7,000	8,605	9,371	9,484	9,148	9,279
518	West Yale Loop	Main Street to Timber Run	7,000	7,350	7,206	7,261	7,350	7,177
519	West Yale Loop	Yale Avenue to Shorebird	5,700	6,121	7,821	8,013	7,270	7,554
520	West Yale Loop	Warner Avenue to Stonecreek South	5,700	6,494	6,943	7,018	6,777	6,766

Table 2

521	West Yale Loop	Barranca Parkway to Alton Parkway	5,500	6,497	6,571	6,549	6,586	6,550
522	West Yale Loop	Stonecreek North to Warner Avenue	5,700	5,909	6,771	6,875	6,484	6,628
523	West Yale Loop	Birdsong to Barranca Parkway	5,700	6,221	6,532	6,637	6,405	6,435
524	Westwood	Yorktown to Bryan Avenue	5,600	6,136	6,042	6,031	6,072	6,049
525	Westwood	Bryan Avenue to Leaf	3,600	3,830	3,912	3,919	3,762	3,817
526	Yale Avenue	Deerfield Avenue to Winvale Avenue	10,200	10,521	10,497	10,502	10,511	10,532
527	Yale Avenue	Hicks Canyon Drive to Meadowood	7,500	7,885	7,806	7,828	7,814	7,828
528	Yale Avenue	Walnut Avenue to Roosevelt	13,600	14,427	14,894	15,197	14,547	14,775
529	Yale Avenue	Roosevelt to Trabuco Road	13,600	14,270	14,285	14,306	14,133	14,287
530	Yale Avenue	Irvine Center Drive to Deerfield Avenue	12,500	14,084	13,571	13,416	13,725	13,713
531	Yale Avenue	West Yale Loop to Irvine Center Drive	8,900	10,606	12,463	12,658	11,926	12,162
532	Yale Avenue	Winvale Avenue to Karen Ann Lane	10,200	10,512	10,439	10,524	10,310	10,472
533	Yale Avenue	Karen Ann Lane to Walnut Avenue	10,200	10,512	10,439	10,524	10,310	10,472
534	Yale Avenue	Trabuco Road to Southwood	9,000	10,224	10,232	10,332	10,111	10,318
535	Yale Avenue	Southwood to Bryan Avenue	9,000	10,061	9,703	9,807	9,802	9,907
536	Yale Avenue	Northwood to Irvine Boulevard	8,500	9,496	9,106	9,199	9,152	9,164
537	Yale Avenue	Bryan Avenue to Monticello	8,500	9,368	8,826	8,895	8,918	8,902
538	Yale Avenue	Irvine Boulevard to Park Place	7,200	7,567	7,442	7,432	7,463	7,457
539	Yale Avenue	University Drive to Royce	1,100	3,588	4,105	4,006	3,940	3,979
540	Yale Court	Arborwood to Portola Parkway	6,000	6,351	6,458	6,472	6,427	6,441

Source: Iteris 2024

Table 3

**Table 3: Distribution of Traffic Flow by Vehicle Type (Vehicle Mix)**

Roadway Classification	Total % Traffic Flow <sup>1</sup>			Total
	Autos	Medium Trucks	Heavy Trucks	
All Roadways	97.42%	1.84%	0.74%	100.00%

<sup>1</sup> Source: Orange County vehicle mix.

Table 4

**Table 4: Time of Day Vehicle Splits**

Vehicle Type	Time of Day Splits <sup>1</sup>			Total of Time of Day Splits
	Daytime	Evening	Nighttime	
Autos	77.50%	12.90%	9.60%	100.00%
Medium Trucks	84.80%	4.90%	10.30%	100.00%
Heavy Trucks	86.50%	2.70%	10.80%	100.00%

<sup>1</sup> Orange County vehicle mix.

"Daytime" = 7:00 a.m. to 7:00 p.m.; "Evening" = 7:00 p.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.



Table 5

Table 5: Existing Conditions Noise Contours

ID	Road	Segment	CNEL at Nearest Receiving Land Use (dBA) <sup>1</sup>	Distance to Contour from Centerline (Feet)		
				70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Ada	Barranca Parway to Marine Way	0.0	RW	RW	RW
2	Ada	Alton Parkway to Barranca Parkway	60.3	RW	RW	65
3	Alton Parkway	Enterprise to I-5 NB Off-Ramp	71.3	102	220	475
4	Alton Parkway	I-5 NB Off-Ramp to Technology Drive West	72.1	110	236	509
5	Alton Parkway	East Yale Loop to Jeffrey Road	71.3	77	165	355
6	Alton Parkway	Gateway Boulevard to Enterprise	69.3	RW	163	351
7	Alton Parkway	Jeffrey Road to Royal Oak	70.1	63	137	295
8	Alton Parkway	Daimler Street to Red Hill Avenue	63.7	RW	RW	110
9	Alton Parkway	Culver Drive to West Yale Loop	70.4	67	143	309
10	Alton Parkway	West Yale Loop to Lake Road	70.3	66	141	304
11	Alton Parkway	Technology Drive West to Ada	70.2	82	177	382
12	Alton Parkway	Creek Road to East Yale Loop	70.1	64	137	296
13	Alton Parkway	Red Hill Avenue to Von Karman Avenue	68.1	RW	101	217
14	Alton Parkway	Lake Road to Creek Road	70.1	63	136	293
15	Alton Parkway	Telemetry to Banting	69.0	RW	116	249
16	Alton Parkway	Irvine Boulevard to Commercentre	70.3	88	190	409
17	Alton Parkway	Jenner to Telemetry	69.0	RW	115	248
18	Alton Parkway	Irvine Center Drive to Gateway Boulevard	68.6	RW	147	316
19	Alton Parkway	Sand Canyon Avenue to Hospital	72.1	83	180	387
20	Alton Parkway	Laguna Canyon Road to Jenner	69.0	RW	115	248
21	Alton Parkway	Technology Drive East to Barranca Pkwy/Muirlands Blvd	69.1	RW	159	342
22	Alton Parkway	Royal Oak to Valley Oak Drive	69.4	RW	123	265
23	Alton Parkway	Banting to Pacifica	68.4	RW	105	226
24	Alton Parkway	Barranca Pkwy/Muirlands Blvd to Jeronimo Road	70.1	85	184	396
25	Alton Parkway	Ada to Technology Drive East	69.2	RW	160	345

Table 5

26	Alton Parkway	Von Karman Avenue to Jamboree Road	68.7	RW	110	237
27	Alton Parkway	Jeronimo Road to Hughes	69.8	RW	175	377
28	Alton Parkway	Hughes to Morgan	69.5	RW	169	364
29	Alton Parkway	Morgan to Toledo Way	68.8	RW	151	325
30	Alton Parkway	San Marino to Culver Drive	68.8	RW	151	325
31	Alton Parkway	Jamboree Road to Murphy Avenue	68.0	RW	134	288
32	Alton Parkway	Hospital to Laguna Canyon Road	70.7	67	144	310
33	Alton Parkway	Valley Oak Drive to Sand Canyon Avenue	71.1	71	153	330
34	Alton Parkway	Murphy Avenue to Harvard Avenue	68.1	RW	135	291
35	Alton Parkway	Foster to Irvine Boulevard	68.0	RW	133	286
36	Alton Parkway	Fairbanks to Foster	67.5	RW	124	267
37	Alton Parkway	Toledo Way to Berteza	68.2	RW	137	296
38	Alton Parkway	Pacifica to Meridian	69.7	RW	123	265
39	Alton Parkway	Berteza to Fairbanks	68.1	RW	135	291
40	Alton Parkway	Meridian to Irvine Center Drive	66.6	RW	108	232
41	Alton Parkway	Paseo Westpark to San Marino	67.9	RW	131	283
42	Alton Parkway	Harvard Avenue to Paseo Westpark	66.9	RW	113	243
43	Astor	Lynx to Fairbanks	57.5	RW	RW	RW
44	Astor	Cadence to Lynx	0.0	RW	RW	RW
45	Bake Parkway	I-5 NB Off-Ramp to Rockfield Boulevard	75.4	228	490	1,056
46	Bake Parkway	Muirlands Boulevard to Jeronimo Road	72.7	128	275	593
47	Bake Parkway	Rockfield Boulevard to Muirlands Boulevard	74.7	207	445	960
48	Bake Parkway	Jeronimo Road to Toledo Way	71.9	112	242	521
49	Bake Parkway	Toledo Way to Cromwell	71.5	107	230	495
50	Bake Parkway	Cromwell to Irvine Boulevard	71.4	104	224	483
51	Bake Parkway	Research Drive to I-5 SB Off-Ramp	68.5	RW	143	308
52	Bake Parkway	Irvine Center Drive to Research Drive	64.1	RW	RW	157
53	Bake Parkway	Lake Forest Drive to Irvine Center Drive	61.9	RW	RW	113
54	Banting	Alton Parkway to Barranca Parkway	57.6	RW	RW	RW
55	Barranca Parkway	Pacifica to Irvine Center Drive	70.5	68	146	315
56	Barranca Parkway	Banting to Pacifica	70.7	70	150	324

Table 5

57	Barranca Parkway	I-5 HOV Ramp to Technology Drive West	69.8	RW	131	282
58	Barranca Parkway	Technology Drive West to Ada	70.4	67	144	311
59	Barranca Parkway	Irvine Center Drive to I-5 HOV Ramp	69.3	RW	121	260
60	Barranca Parkway	Culver Drive to West Yale Loop	71.9	84	182	391
61	Barranca Parkway	East Yale Loop to Jeffrey Road	71.7	81	174	374
62	Barranca Parkway	West Yale Loop to Lake Road	71.6	80	173	372
63	Barranca Parkway	Ada to Alton Parkway	70.2	65	140	301
64	Barranca Parkway	Lake Road to Creek Road	71.2	76	163	350
65	Barranca Parkway	Red Hill Avenue to Armstrong Avenue	73.3	167	360	775
66	Barranca Parkway	Discovery/Herchel to Banting	69.7	RW	129	279
67	Barranca Parkway	Lyon to East Yale Loop	71.0	73	157	339
68	Barranca Parkway	Creek Road to Lyon	70.9	72	155	335
69	Barranca Parkway	Von Karman Avenue to Jamboree Road	71.5	100	216	464
70	Barranca Parkway	Sand Canyon Avenue to Laguna Canyon Road	68.5	RW	107	231
71	Barranca Parkway	Armstrong Avenue to Von Karman Avenue	72.0	108	233	501
72	Barranca Parkway	Valley Oak Drive to Sand Canyon Avenue	69.1	RW	117	253
73	Barranca Parkway	Jamboree Road to Construction Circle	70.1	86	185	399
74	Barranca Parkway	Santa Rosa to Culver Drive	69.8	RW	176	378
75	Barranca Parkway	FedEx to Discovery/Herchel	68.8	RW	112	241
76	Barranca Parkway	Jeffrey Road to Valley Oak Drive	68.3	RW	104	225
77	Barranca Parkway	Laguna Canyon Road to FedEx	68.8	RW	111	240
78	Barranca Parkway	Pullman Street to Red Hill Avenue	72.7	152	327	703
79	Barranca Parkway	Construction Circle to Fire Station	69.4	RW	166	357
80	Barranca Parkway	Fire Station to Harvard Avenue	69.4	RW	166	357
81	Barranca Parkway	Paseo Westpark to Santa Rosa	69.3	RW	163	350
82	Barranca Parkway	Harvard Avenue to Paseo Westpark	69.2	RW	160	345
83	Bay Tree	Trabuco Road to Roosevelt	56.1	RW	RW	RW
84	Beacon	Ridge Valley to Benchmark	0.0	RW	RW	RW
85	Benchmark (LN Street)	Ridge Valley (O Street) to Bosque	0.0	RW	RW	RW
86	Bison Avenue	SR-73 NB Off-Ramp to California Avenue	68.6	RW	109	235
87	Bonita Canyon Drive	MacArthur Boulevard to SR-73	70.0	75	162	350

Table 5

88	Bonita Canyon Drive	Turtle Ridge to Shady Canyon Drive	67.5	RW	111	239
89	Bonita Canyon Drive	Newport Coast Drive to Turtle Ridge	67.5	RW	111	239
90	Bonita Canyon Drive	SR-73 NB Off-Ramp to Newport Coast Drive	67.5	RW	111	239
91	Bosque	Cadence to Great Park Boulevard	63.0	RW	RW	59
92	Bosque	Irvine Boulevard to Benchmark (LN Street)	59.7	RW	RW	RW
93	Bosque	Benchmark to Cadence	59.7	RW	RW	RW
94	Bosque	Great Park Boulevard to Beacon	0.0	RW	RW	RW
95	Bosque	Beacon to S 5th Street	0.0	RW	RW	RW
96	Bryan Avenue	Jamboree Road to Market Place	68.7	RW	110	237
97	Bryan Avenue	Market Place to El Camino Real	68.7	RW	110	237
98	Bryan Avenue	Rubicon to Culver Drive	68.7	RW	110	237
99	Bryan Avenue	El Camino Real to Rubicon	68.7	RW	110	237
100	Bryan Avenue	Eastwood to Jeffrey Road	65.8	RW	70	152
101	Bryan Avenue	Westwood to Yale Avenue	66.3	RW	76	164
102	Bryan Avenue	Culver Drive to Westwood	66.3	RW	76	164
103	Bryan Avenue	Yale Avenue to Eastwood	65.8	RW	70	152
104	Cadence	Pusan to Chinon	64.5	RW	RW	75
105	Cadence	Bosque to Pusan	65.7	RW	41	89
106	Cadence	Ridge Valley (O Street) to Bosque	62.6	RW	RW	56
107	Cadence	Chinon to Merit	62.6	RW	RW	56
108	Cadence	Merit to Astor	0.0	RW	RW	RW
109	California Avenue	University Drive to Academy Way	64.3	RW	RW	120
110	California Avenue	Campus Drive to Harvard Avenue	63.2	RW	RW	102
111	California Avenue	Theory to Bison Avenue	63.1	RW	RW	100
112	Campus Drive	Carlson Avenue to University Drive	70.9	58	124	268
113	Campus Drive	University Drive to Bridge Road	70.1	64	138	296
114	Campus Drive	Jamboree Road to Carlson Avenue	69.0	RW	115	248
115	Campus Drive	Stanford Court to Berkeley Avenue	70.1	64	138	296
116	Campus Drive	California Avenue to Culver Drive	68.9	RW	113	243
117	Campus Drive	Berkeley Avenue to Cornell	68.9	RW	113	243
118	Campus Drive	Martin to Von Karman Avenue	67.5	RW	92	198

Table 5

119	Campus Drive	Culver Drive to Paseo Montoya (Turtle Rock Drive)	68.5	RW	106	229
120	Campus Drive	Von Karman Avenue to Teller Avenue	66.8	RW	82	178
121	Campus Drive	MacArthur Boulevard to Martin	67.5	RW	92	198
122	Campus Drive	Teller Avenue to Jamboree Road	66.8	RW	82	178
123	Carlson Avenue	Michelson Drive to Campus Drive	64.5	RW	RW	124
124	Chinon	Irvine Boulevard to Cadence	56.6	RW	RW	RW
125	Creek Road	Alton Parkway to Barranca Parkway	55.3	RW	RW	RW
126	Culver Drive	Michelson Drive to I-405 SB Off-Ramp	73.4	141	305	656
127	Culver Drive	I-405 SB Off-Ramp to I-405 NB Off Ramp	73.4	141	305	656
128	Culver Drive	I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)	73.7	147	318	685
129	Culver Drive	Scottsdale Drive to I-5 SB Off- Ramp	73.7	147	318	685
130	Culver Drive	I-405 NB Off-Ramp to San Leandro	73.4	141	305	656
131	Culver Drive	San Leandro to Main Street	73.2	137	296	637
132	Culver Drive	Harvard Avenue to University Drive	72.7	128	275	593
133	Culver Drive	Trabuco Road to Farwell Avenue	74.1	150	322	694
134	Culver Drive	Alton Parkway to Barranca Parkway	72.9	130	280	604
135	Culver Drive	Main Street to Alton Parkway	72.7	128	276	594
136	Culver Drive	Warner Avenue to Irvine Center Drive	72.7	126	272	586
137	Culver Drive	Walnut Avenue to Scottsdale Dive	72.6	125	269	580
138	Culver Drive	Barranca Parkway to Warner Avenue	72.6	125	269	579
139	Culver Drive	Shady Canyon Drive to Palo Verde	71.4	77	166	358
140	Culver Drive	Deerfield Avenue to Walnut Avenue	72.3	119	257	553
141	Culver Drive	Sandburg Way to Michelson Drive	71.9	112	241	520
142	Culver Drive	Irvine Center Drive to Deerfield Avenue	72.1	115	248	534
143	Culver Drive	Palo Verde to Campus Drive	71.4	77	166	358
144	Culver Drive	University Drive to Sandburg Way	71.5	106	228	491
145	Culver Drive	Farwell Avenue to Bryan Avenue	72.8	124	267	574
146	Culver Drive	Campus Drive to High School	71.6	108	232	501
147	Culver Drive	High School to Harvard Avenue	71.6	108	232	501
148	Culver Drive	Bryan Avenue to Florence	71.5	105	226	488
149	Culver Drive	Portola Parkway to Settlers	68.9	RW	114	245

Table 5

150	Culver Drive	Florence to Irvine Boulevard	71.3	103	222	479
151	Culver Drive	Irvine Boulevard to Viewpark	70.0	84	180	388
152	Culver Drive	Viewpark to Meadowood	70.0	84	180	388
153	Culver Drive	Settlers to Furrow	0.0	RW	RW	RW
154	Culver Drive	Meadowood to Portola Parkway	68.3	RW	140	301
155	Discovery Drive	Irvine Center Drive to Laguna Canyon Road	56.6	RW	RW	RW
156	Discovery Drive	Waterworks Way to Irvine Center Drive	0.0	RW	RW	RW
157	East Yale Loop	Alton Parkway to Witherspoon	64.6	RW	RW	127
158	East Yale Loop	Osborn Street to Barranca Parkway	64.3	RW	RW	122
159	East Yale Loop	Yale Avenue to Springbrook South	62.3	RW	RW	89
160	East Yale Loop	Springbrook North to Alton Parkway	62.3	RW	RW	89
161	East Yale Loop	Woodspring to Yale Avenue	62.3	RW	RW	89
162	East Yale Loop	Barranca Parkway to Eastshore	62.3	RW	RW	89
163	Eastwood	Bryan Avenue to Monticello	59.5	RW	RW	RW
164	Eastwood	Columbus to Bryan Avenue	58.5	RW	RW	RW
165	El Camino Real	Jamboree Road to Alliance (SR-261 Bridge)	66.9	RW	84	181
166	El Camino Real North	El Camino Real to Bryan Avenue	62.2	RW	RW	87
167	Fairbanks	Alton Parkway to Astor	61.3	RW	RW	46
168	Fairbanks	Irvine Boulevard to Alton Parkway	0.0	RW	RW	RW
169	Fairchild Road	MacArthur Boulevard to Jamboree Road	63.3	RW	RW	104
170	Gateway Boulevard	Alton Parkway to Irvine Center Drive	57.0	RW	RW	RW
171	Gateway Boulevard	Spectrum Center Drive (Fortune Drive) to Alton Parkway	59.4	RW	RW	RW
172	Gateway Boulevard	Irvine Center Drive to Meridian	56.8	RW	RW	RW
173	Great Park Boulevard	Sand Canyon to Ridge Valley	70.5	65	140	302
174	Great Park Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	64.0	RW	RW	116
175	Great Park Boulevard (EB)	Bosque to Skyhawk	0.0	RW	RW	RW
176	Great Park Boulevard (WB)	Bosque to Skyhawk	0.0	RW	RW	RW
177	Harvard Avenue	University Drive to Michelson Drive	71.2	45	97	209
178	Harvard Avenue	Michelson Drive to Coronado	69.5	RW	124	268
179	Harvard Avenue	San Marino to Alton Parkway	69.4	RW	123	265
180	Harvard Avenue	Coronado to Main Street	69.3	RW	121	262

Table 5

181	Harvard Avenue	San Carlo to San Marino	69.4	RW	123	265
182	Harvard Avenue	Main Street to San Carlo	69.3	RW	121	262
183	Harvard Avenue	Alton Parkway to San Leon	68.5	RW	108	232
184	Harvard Avenue	San Juan to Barranca Parkway	68.5	RW	108	232
185	Harvard Avenue	San Leon to San Juan	68.4	RW	105	226
186	Harvard Avenue	Irvine Center Drive to Deerfield Avenue	65.5	RW	68	146
187	Harvard Avenue	Deerfield Avenue to Poplar Street	65.5	RW	68	146
188	Harvard Avenue	Barranca Parkway to Warner Avenue	67.6	RW	94	202
189	Harvard Avenue	Bridge Road to University Drive	67.2	RW	88	190
190	Harvard Avenue	Paseo Westpark to Irvine Center Drive	66.1	RW	74	159
191	Harvard Avenue	Poplar Street to Walnut Avenue	66.8	RW	66	143
192	Harvard Avenue	California Avenue to Berkeley Avenue	66.1	RW	74	159
193	Harvard Avenue	Culver Drive to California Avenue	66.1	RW	74	159
194	Harvard Avenue	Berkeley to Bridge Road	66.1	RW	74	159
195	Harvard Avenue	Warner Avenue to Paseo Westpark	65.9	RW	72	156
196	Hicks Canyon Drive	Delamesa to Yale Avenue	58.2	RW	RW	RW
197	Hornet (5th St)	Ridge Valley (O Street) to Bosque	0.0	RW	RW	RW
198	Hubble	Irvine Center Drive to Bunsen	55.5	RW	RW	RW
199	Irvine Boulevard	SR-133 NB Off- Ramp to Ridge Valley (O Street)	72.1	116	250	539
200	Irvine Boulevard	SR-133 SB Off-Ramp to SR-133 NB Off-Ramp	72.0	114	246	530
201	Irvine Boulevard	Sand Canyon to SR-133 SB Off-Ramp	72.9	124	268	577
202	Irvine Boulevard	Merit to Alton	71.4	104	225	484
203	Irvine Boulevard	Journey to Sand Canyon Avenue	71.4	104	225	485
204	Irvine Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	70.9	97	209	451
205	Irvine Boulevard	Pusan Way to Chinon (B Street)	70.8	95	204	440
206	Irvine Boulevard	Palo Lado to Yale Avenue	70.4	89	193	415
207	Irvine Boulevard	Culver Drive to Palo Lado	70.5	90	194	418
208	Irvine Boulevard	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.5	91	195	421
209	Irvine Boulevard	Old Myford Road to Market Place	70.3	88	190	409
210	Irvine Boulevard	Bosque (LY Street) to Modjeska	70.5	91	196	423
211	Irvine Boulevard	Jamboree Road to Old Myford Road	70.3	88	190	409

Table 5

212	Irvine Boulevard	Market Place to SR-261 SB Off-Ramp	70.3	88	189	408
213	Irvine Boulevard	Jeffrey Road to Groveland	70.6	92	198	427
214	Irvine Boulevard	Bake Parkway to Lake Forest Drive	69.8	RW	177	381
215	Irvine Boulevard	Independence Way (The Groves)/The Groves to Jeffrey Road	70.2	87	187	404
216	Irvine Boulevard	Chinon (B Street) to Merit	70.2	87	188	405
217	Irvine Boulevard	SR-261 NB Off-Ramp to Central Park	70.1	85	184	396
218	Irvine Boulevard	Pueblo Norte to Independence Way (The Groves)/ Parkwood	69.9	RW	179	386
219	Irvine Boulevard	Yale Avenue to Pueblo Norte	69.9	RW	179	386
220	Irvine Boulevard	Modjeska to Pusan Way	70.0	84	182	391
221	Irvine Boulevard	Central Park Avenue to Culver Drive	69.5	RW	168	362
222	Irvine Boulevard	Parker to Bake Parkway	69.0	RW	154	332
223	Irvine Boulevard	Alton Parkway to Fairbanks	68.4	RW	142	305
224	Irvine Center Drive	Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp	71.3	98	210	453
225	Irvine Center Drive	Orange Tree to Valley Oak Drive	69.7	RW	172	370
226	Irvine Center Drive	I-405 SB Off-Ramp to Research	70.9	92	198	426
227	Irvine Center Drive	Irvine Valley College to Orange Tree	69.7	RW	172	370
228	Irvine Center Drive	Fontaine Avenue to Jeffrey Road	69.5	RW	166	358
229	Irvine Center Drive	Culver Drive to Deerwood	69.7	RW	173	373
230	Irvine Center Drive	Deerwood to Yale Avenue	69.6	RW	170	367
231	Irvine Center Drive	Yale Avenue to Fontaine Avenue	69.4	RW	164	353
232	Irvine Center Drive	Jeffrey Road to Irvine Valley College	69.7	RW	172	370
233	Irvine Center Drive	Alton Parkway to Spectrum	68.9	RW	153	329
234	Irvine Center Drive	Spectrum to Pacifica	68.9	RW	153	330
235	Irvine Center Drive	Hearthstone to Culver Drive	69.2	RW	159	344
236	Irvine Center Drive	Charter to Barranca Parkway	68.1	RW	136	293
237	Irvine Center Drive	Jamboree Road to Harvard Avenue	69.7	RW	173	373
238	Irvine Center Drive	Pacifica to Entertainment (Enterprise/Fortune)	69.1	RW	157	339
239	Irvine Center Drive	Valley Oak Drive to Sand Canyon Avenue	68.1	RW	135	290
240	Irvine Center Drive	Harvard Avenue to Hearthstone	69.2	RW	159	344
241	Irvine Center Drive	Research to Hubble	67.9	RW	130	281
242	Irvine Center Drive	Barranca Parkway to Gateway Boulevard	66.9	RW	113	243



Table 5

243	Irvine Center Drive	Bake Parkway to Muller	67.9	RW	130	281
244	Irvine Center Drive	Discovery to Charter	67.3	RW	119	256
245	Irvine Center Drive	Hubble to Bake Parkway	67.8	RW	129	278
246	Irvine Center Drive	Muller to Tesla	67.7	RW	127	273
247	Irvine Center Drive	Sand Canyon Avenue to Odyssey	67.6	RW	125	270
248	Irvine Center Drive	Tesla to Scientific Way	67.1	RW	116	250
249	Irvine Center Drive	Scientific Way to Lake Forest Drive	67.2	RW	117	253
250	Irvine Center Drive	Gateway Boulevard to Alton Parkway	66.7	RW	109	235
251	Irvine Center Drive	Laguna Canyon Road to Discovery	66.8	RW	111	238
252	Irvine Center Drive	Odyssey to Laguna Canyon Road	66.8	RW	112	240
253	Irvine Center Drive (Edinger)	Redhill Avenue to Jamboree Road	69.6	RW	171	368
254	Jamboree Road	I-5 SB Off-Ramp to I-5 NB Off-Ramp	74.3	163	350	755
255	Jamboree Road	I-405 SB Off-Ramp to I-405 NB Off Ramp	75.1	176	380	818
256	Jamboree Road	Walnut Avenue to Michelle Drive	73.5	143	309	665
257	Jamboree Road	I-405 NB Off-Ramp to Main Street	76.5	272	586	1,263
258	Jamboree Road	Michelle Drive to I-5 SB Off-Ramp	73.5	143	309	665
259	Jamboree Road	Main Street to Kelvin Avenue	75.7	241	519	1,119
260	Jamboree Road	Michelson Drive to I-405 SB Off-Ramp	73.6	192	414	893
261	Jamboree Road	Kelvin Avenue to McGaw Avenue	75.5	231	498	1,074
262	Jamboree Road	McGaw Avenue to Alton Parkway	75.4	229	494	1,064
263	Jamboree Road	Birch Street to Campus Drive	72.1	116	251	541
264	Jamboree Road	Dupont Drive to Michelson Drive	73.3	132	284	613
265	Jamboree Road	Alton Parkway to Beckman	75.2	222	477	1,028
266	Jamboree Road	Fairchild Road to Birch Street	72.2	113	243	523
267	Jamboree Road	Beckman to Barranca Parkway	75.0	215	464	1,000
268	Jamboree Road	I-5 NB Off-Ramp to El Camino Real	74.9	211	455	981
269	Jamboree Road	Campus Drive to Dupont Drive	72.5	118	254	548
270	Jamboree Road	El Camino Real to West Drive	74.9	211	455	981
271	Jamboree Road	West Drive to Bryan Avenue	74.9	211	455	981
272	Jamboree Road	Bryan Avenue to Irvine Boulevard	74.5	199	428	922
273	Jamboree Road	Koll Center to Fairchild Road	71.7	103	222	479

Table 5

274	Jamboree Road	MacArthur Boulevard to Koll Center	71.8	106	229	493
275	Jamboree Road	Irvine Boulevard to Portola Parkway	70.0	84	180	388
276	Jamboree Road	Warner Avenue to Edinger Avenue	79.0	254	547	1,179
277	Jamboree Road	Barranca Parkway to Warner Avenue	78.1	222	479	1,032
278	Jamboree Road	Edinger Avenue to Walnut Avenue	77.8	212	457	984
279	Jeffrey Road	Walnut Avenue to I-5 NB Off-Ramp	70.9	97	208	448
280	Jeffrey Road	I-5 NB Off-Ramp to Roosevelt	71.8	106	229	493
281	Jeffrey Road	Poplar (Meadows) to Walnut Avenue	70.4	89	192	413
282	Jeffrey Road	Alton Parkway to Barranca Parkway	70.3	88	190	410
283	Jeffrey Road	Irvine Center Drive to Poplar (Meadows)	70.2	87	187	402
284	Jeffrey Road	I-405 NB Off-Ramp to Quail Creek	70.4	89	191	411
285	Jeffrey Road	Barranca Parkway to Irvine Valley College	70.3	87	188	405
286	Jeffrey Road	Quail Creek to Alton Parkway	70.4	89	191	411
287	Jeffrey Road	Irvine Valley College to Irvine Center Drive	70.1	86	185	398
288	Jeffrey Road	Trabuco Road to Hideaway	69.4	RW	165	356
289	Jeffrey Road	Hideaway to Bryan Avenue	69.4	RW	165	356
290	Jeffrey Road	Roosevelt to Grove	70.0	80	172	371
291	Jeffrey Road	Grove to Trabuco Road	70.0	80	172	371
292	Jeffrey Road	Bryan Avenue to Irvine Boulevard	68.1	RW	135	292
293	Jeffrey Road	Encore to Portola Parkway	64.0	RW	RW	156
294	Jeffrey Road	Irvine Boulevard to Encore	64.0	RW	RW	156
295	Jeronimo Road	Goodyear to Bake Parkway	64.4	RW	RW	123
296	Jeronimo Road	Alton Parkway to Goodyear	64.1	RW	RW	117
297	Laguna Canyon Road	Old Laguna Canyon Road to Lake Forest Drive	72.6	125	269	579
298	Laguna Canyon Road	Laguna Canyon Freeway to Quail Hill Parkway	67.7	RW	95	205
299	Laguna Canyon Road	Discovery to Sand Canyon Avenue	64.8	RW	RW	131
300	Laguna Canyon Road	I-405 Overcrossing to Pasteur	66.0	RW	59	126
301	Laguna Canyon Road	Irvine Center Drive to Discovery	63.6	RW	RW	109
302	Laguna Canyon Road	Quail Hill Parkway to I-405 Overcrossing	66.0	RW	59	126
303	Laguna Canyon Road	Pasteur to Alton Parkway	65.5	RW	68	146
304	Laguna Canyon Road	Waterworks to Irvine Center Drive	64.5	RW	RW	124

Table 5

305	Laguna Canyon Road	Alton Parkway to Barranca Parkway	64.8	RW	RW	131
306	Laguna Canyon Road	Barranca Parkway to Waterworks	63.9	RW	RW	113
307	Lake Forest Drive	Hidden Canyon to Laguna Canyon Road	68.3	RW	104	223
308	Lake Forest Drive	Bake Parkway to Hidden Canyon (Romano)	68.3	RW	104	223
309	Lake Forest Drive	Tesla to Bake Parkway	65.3	RW	88	190
310	Lake Road	Alton Parkway to Barranca Parkway	59.0	RW	RW	RW
311	Lynx	Irvine Boulevard to Astor	0.0	RW	RW	RW
312	MacArthur Boulevard	I-405 SB Off-Ramp to Michelson Drive	76.0	250	539	1,162
313	MacArthur Boulevard	Main Street to I-405 NB Off-Ramp	75.8	245	529	1,139
314	MacArthur Boulevard	I-405 NB Off-Ramp and I-405 SB Off-Ramp	75.7	239	514	1,107
315	MacArthur Boulevard	Jamboree Road to Fairchild Road	69.7	RW	172	370
316	MacArthur Boulevard	Fairchild Road to University Drive	69.7	RW	172	370
317	MacArthur Boulevard	Fitch to Red Hill Avenue	70.4	85	183	395
318	MacArthur Boulevard	Michelson Drive to Douglas	71.3	121	261	562
319	MacArthur Boulevard	Douglas to Campus Drive	71.3	121	261	562
320	MacArthur Boulevard	Skypark to Main Street	69.0	RW	148	320
321	MacArthur Boulevard	Redhill Avenue to Skypark	68.0	RW	134	289
322	MacArthur Boulevard	Birch Street to Jamboree Road	66.5	RW	106	228
323	MacArthur Boulevard	Campus Drive to Birch Street	68.5	RW	172	371
324	Main Street	Gillette Avenue to Von Karman Avenue	69.4	RW	157	339
325	Main Street	MacArthur Boulevard to Mercantile	69.4	RW	157	339
326	Main Street	Executive Park to MacArthur Boulevard	67.7	RW	127	273
327	Main Street	Von Karman Avenue to Cartwright	67.2	RW	117	253
328	Main Street	McDermott to Red Hill Avenue	67.9	RW	131	283
329	Main Street	Red Hill Avenue to Executive Circle	67.7	RW	127	273
330	Main Street	Jamboree Road to Union	67.4	RW	122	262
331	Main Street	Culver Drive to West Yale Loop	67.0	RW	85	184
332	Main Street	Siglo to Jamboree Road	67.2	RW	117	253
333	Main Street	Veneto to Harvard Avenue	67.4	RW	122	262
334	Main Street	Paseo Westpark to Culver Drive	66.2	RW	75	161
335	Main Street	Harvard Avenue to San Mateo	66.2	RW	75	161

Table 5

336	Marine Way	Sand Canyon Avenue to Ridge Valley (O Street)	67.8	RW	77	165
337	Marine Way	Alton Parkway to Bake Parkway	0.0	RW	RW	RW
338	Marine Way	Lynx to Barranca Parkway	0.0	RW	RW	RW
339	Marine Way	County Access to Treble	59.3	RW	RW	RW
340	Marine Way	Ridge Valley (O Street) to Skyhawk	62.0	RW	RW	85
341	Marine Way	Skyhawk to County Access	59.3	RW	RW	RW
342	Marine Way	Barranca Parkway to Alton Parkway	52.7	RW	RW	RW
343	Marine Way	Treble to Lynx	0.0	RW	RW	RW
344	McGaw Avenue	Von Karman Avenue to Jamboree Road	62.2	RW	RW	87
345	McGaw Avenue	Red Hill Avenue to Von Karman Avenue	62.1	RW	RW	86
346	McGaw Avenue	Daimler to Red Hill Avenue	61.0	RW	RW	72
347	McGaw Avenue	Jamboree Road to Murphy Avenue	57.6	RW	RW	RW
348	Meadowood	Culver Drive to Canyonwood	59.5	RW	RW	RW
349	Meridian	Spectrum to Alton Parkway	54.7	RW	RW	RW
350	Meridian	Alton Parkway to Gateway Boulevard	53.5	RW	RW	RW
351	Merit	Irvine Boulevard to Cadence	59.3	RW	RW	RW
352	Michelson Drive	Riparian to Harvard Avenue	66.7	RW	82	176
353	Michelson Drive	Almond Tree Lane to Yale Avenue	66.3	RW	46	98
354	Michelson Drive	Von Karman Avenue to Obsidian	66.7	RW	81	175
355	Michelson Drive	Parkside to Culver Drive	66.2	RW	75	161
356	Michelson Drive	Gillman to Seton/Sandburg Way	66.3	RW	46	98
357	Michelson Drive	Carlson to Prince	65.4	RW	80	173
358	Michelson Drive	MacArthur Boulevard to Dupont Drive	66.7	RW	81	175
359	Michelson Drive	Harvard Avenue to Parkside	66.2	RW	75	161
360	Michelson Drive	Bixby to Von Karman Avenue	64.9	RW	RW	133
361	Michelson Drive	Jamboree Road to Carlson	68.0	RW	96	206
362	Michelson Drive	Teller to Jamboree Road	68.7	RW	106	229
363	Michelson Drive	Jordan East to University Drive	66.6	RW	38	82
364	Michelson Drive	Culver Drive to Angell	65.9	RW	46	99
365	Modjeska (A Street)	Portola Springs to Irvine Boulevard	70.7	33	72	154
366	Modjeska (A Street)	South of Irvine Boulevard	61.4	RW	RW	47

Table 5

367	Muirlands Boulevard	Bake Parkway to City Limits	66.4	RW	77	167
368	Muirlands Boulevard	Alton Parkway to Sterling	66.1	RW	74	159
369	Muirlands Boulevard	Wrigley to Bake Parkway	66.1	RW	74	159
370	Newport Coast Drive	SR-73 NB Off-Ramp to Turtle Ridge	65.9	RW	71	154
371	Newport Coast Drive	Turtle Crest to Bonita Canyon Drive	65.0	RW	RW	134
372	Nightmist	Sand Canyon Avenue to Tulip (Road C)	60.8	RW	RW	70
373	Northwood	Yale Avenue to Savannah	62.3	RW	RW	53
374	Northwood	Goldrush to Yale Avenue	60.5	RW	RW	40
375	Oak Canyon Drive	Valley Oak Drive to Sand Canyon Avenue	66.2	RW	45	97
376	Pacifica	Gateway to Barranca Parkway	63.3	RW	RW	104
377	Pacifica	Alton Parkway to Gateway	61.8	RW	RW	83
378	Pacifica	Irvine Center Drive to Fortune Drive (Spectrum Center Drive)	61.7	RW	RW	81
379	Pacifica	Meridian to Alton Parkway	58.1	RW	RW	RW
380	Park Place	Christamon South to Yale Avenue	56.8	RW	RW	RW
381	Portola Parkway	Bee Canyon Access Road to Sand Canyon Avenue	70.3	65	140	302
382	Portola Parkway	Jeffrey Road to Bee Canyon Access Road	70.3	65	140	302
383	Portola Parkway	Arrowhead to Ridge Valley Parkway	69.6	RW	126	272
384	Portola Parkway	Sand Canyon Avenue to Arrowhead	69.6	RW	126	272
385	Portola Parkway	Portola Springs to SR-241 SB Off-Ramp	65.5	RW	68	146
386	Portola Parkway	Gatepark to Culver Drive	69.6	RW	171	369
387	Portola Parkway	ETC-6 (SR-261) NB Off-Ramp to Gatepark	69.6	RW	171	369
388	Portola Parkway	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	69.6	RW	171	369
389	Portola Parkway	Jamboree Road to Bellevue	69.6	RW	171	369
390	Portola Parkway	Bellevue to ETC-6 (SR-261) SB Off-Ramp	69.6	RW	171	369
391	Portola Parkway	Yale Avenue to Jeffrey Road	68.6	RW	146	314
392	Portola Parkway	Culver Drive to Yale Avenue	68.6	RW	146	314
393	Portola Parkway	Silverado to Portola Springs	66.5	RW	79	170
394	Pusan	Irvine Boulevard to Cadence	54.0	RW	RW	RW
395	Quail Hill Parkway	Shady Canyon Drive to Passage	67.3	RW	90	193
396	Quail Hill Parkway	East Knollcrest to Laguna Canyon Road	64.8	RW	RW	131
397	Quassar Drive (Spectrum)	Irvine Center Drive to Spectrum Center Drive (Fortune)	54.4	RW	RW	RW

Table 5

398	Red Hill Avenue	MacArthur Boulevard to McGaw Avenue	70.8	96	206	444
399	Red Hill Avenue	I-405 Over Crossing to Main Street	69.6	RW	127	274
400	Red Hill Avenue	Alton Parkway to Deere Avenue	69.5	RW	168	361
401	Red Hill Avenue	McGaw Avenue to Alton Parkway	69.3	RW	163	351
402	Red Hill Avenue	Deere Avenue to Barranca Parkway	69.3	RW	162	350
403	Red Hill Avenue	Skypark East to MacArthur Boulevard	70.2	62	133	287
404	Red Hill Avenue	Main Street to Skypark East	69.6	RW	122	263
405	Research Drive	Hubble to Bake Parkway	65.4	RW	66	143
406	Research Drive	Scientific to Lake Forest Drive	65.6	RW	68	147
407	Research Drive	Bake Parkway to Muller	66.2	RW	75	161
408	Research Drive	Irvine Center Drive to Bunsen	64.9	RW	RW	132
409	Ridge Valley (O Street)	Irvine Boulevard to Trabuco Road (Great Park Boulevard)	65.5	RW	67	145
410	Ridge Valley (O Street)	Portola Parkway to Irvine Boulevard	65.9	RW	71	154
411	Ridge Valley (O Street)	Trabuco Road (Great Park Boulevard) to Marine Way	65.8	RW	70	152
412	Ridge Valley (O Street)	Ranchland to Portola Parkway	58.0	RW	RW	RW
413	Ridgeline Drive	Concordia East to University Drive	67.7	RW	60	130
414	Ridgeline Drive	Turtle Rock Drive to San Simeon	67.7	RW	60	130
415	Rockfield Avenue	Whatney to McLaren	66.3	RW	77	165
416	Rockfield Avenue	Bake Parkway to Whatney	62.5	RW	RW	92
417	Rockfield Avenue	Thomas to Bake Parkway	62.5	RW	RW	92
418	Roosevelt	Jeffrey Road to Vision	65.2	RW	65	139
419	Roosevelt	Yale Avenue to Van Buren	67.9	RW	47	101
420	Roosevelt	Vision to Bay Tree	64.5	RW	RW	124
421	Roosevelt	Nimitz to Jeffrey Road	65.2	RW	65	139
422	Roosevelt	Tulip (Road C) to Sand Canyon Avenue	63.7	RW	RW	110
423	Royal Oak	Alton Parkway to Eaglecreek	63.8	RW	RW	54
424	Sand Canyon Avenue	Oak Canyon Drive to Burt Road	70.7	93	200	432
425	Sand Canyon Avenue	Irvine Center Drive to Oak Canyon Drive	70.6	92	197	425
426	Sand Canyon Avenue	I-405 NB Off-Ramp to Alton Parkway	73.6	104	225	485
427	Sand Canyon Avenue	Burt Road to I-5 SB Off-Ramp	71.2	96	206	445
428	Sand Canyon Avenue	Marine to I-5 NB Off-Ramp	72.7	151	326	703

Table 5

429	Sand Canyon Avenue	Trabuco Road to Towngate	70.0	84	181	390
430	Sand Canyon Avenue	Barranca Parkway to Waterworks	69.2	RW	160	344
431	Sand Canyon Avenue	I-5 SB Off-Ramp to Marine	72.7	151	326	703
432	Sand Canyon Avenue	Hospital to Barranca Parkway	69.3	RW	163	351
433	Sand Canyon Avenue	Nightmist to Roosevelt	73.3	167	359	774
434	Sand Canyon Avenue	I-405 SB Off-Ramp to I-405 NB Off-Ramp	72.4	86	186	400
435	Sand Canyon Avenue	I-5 NB Off-Ramp to Nightmist	73.2	164	354	762
436	Sand Canyon Avenue	Towngate to Irvine Boulevard	69.3	RW	163	352
437	Sand Canyon Avenue	Waterworks to Irvine Center Drive	69.2	RW	160	344
438	Sand Canyon Avenue	Irvine Boulevard to Portola Parkway	68.0	RW	99	214
439	Sand Canyon Avenue	Roosevelt to Trabuco Road	72.6	149	320	689
440	Sand Canyon Avenue	Alton Parkway to Hospital	69.7	RW	165	356
441	Sand Canyon/Shady Canyon	Quail Hill Parkway to I-405 SB Ramps	71.3	74	159	342
442	Scientific Way	Irvine Center Drive to Wald	54.6	RW	RW	RW
443	Shady Canyon Drive	Culver Drive/Bonita Canyon Drive to Cloverfield	68.6	RW	66	141
444	Shady Canyon Drive	Bommer Canyon Road to Sunnyhill	67.1	RW	69	148
445	Skyhawk	Great Park Boulevard to Marine Way	52.8	4	10	21
446	Southwood	Yale Avenue to Colt	60.5	RW	RW	40
447	Southwood	Challenger to Yale Avenue	59.9	RW	RW	RW
448	Spectrum Center Drive (Fortune Drive)	Pacifica to Quassar Drive (Spectrum )	61.4	RW	RW	78
449	Spectrum Center Drive (Fortune Drive)	Quassar Drive (Spectrum ) to Gatewayb	62.0	RW	RW	85
450	Sunnyhill	Shady Canyon Drive to Turtle Rock Drive	56.9	RW	RW	RW
451	Technology Drive	Barranca Parkway to Alton Parkway	67.0	RW	85	184
452	Technology Drive	Old Laguna Canyon Road to I-5/SR-133 Undercrossing	63.2	RW	RW	102
453	Technology Drive	I-5/SR-133 to Barranca Parkway	62.8	RW	RW	96
454	Technology Drive	Ada to Alton Parkway	57.8	RW	RW	RW
455	Toledo Way	Bake Parkway to City Limits	65.5	RW	67	145
456	Toledo Way	Goodyear to Bake Parkway	64.5	RW	RW	125
457	Toledo Way	Alton Parkway to Parker	63.9	RW	RW	114
458	Trabuco Road	Keystone to Sand Canyon Avenue	66.7	RW	81	175
459	Trabuco Road	Jeffrey Road to Keystone	66.7	RW	81	175

Table 5

460	Trabuco Road	Culver Drive to I-5 NB Off-Ramp	66.3	RW	77	165
461	Trabuco Road	Monroe to Yale Avenue	66.3	RW	77	165
462	Trabuco Road	I-5 NB Off-Ramp to Monroe	66.3	RW	77	165
463	Trabuco Road	Yale Avenue to Remington	65.7	RW	70	151
464	Trabuco Road	Remington to Jeffrey Road	65.7	RW	70	151
465	Turtle Ridge Drive	Federation Way to Bonita Canyon	0.0	RW	RW	RW
466	Turtle Rock Drive	Ridgeline to Willowleaf	66.9	RW	50	108
467	Turtle Rock Drive	Silkwood to Sunnyhill	67.0	RW	51	110
468	Turtle Rock Drive	Canyon Park to Ridgeline	66.7	RW	48	104
469	Turtle Rock Drive	Sunnyhill to Southernwood	63.9	RW	RW	68
470	Turtle Rock Drive	Campus Drive to Hillgate	63.8	RW	RW	112
471	Turtle Rock Drive	Paseo Segovia to Campus Drive	65.3	RW	42	90
472	University Drive	Golden Glow to Yale Avenue	72.2	87	188	405
473	University Drive	Ridgeline to Michelson Drive	72.1	104	223	481
474	University Drive	Culver Drive to Golden Glow	72.1	86	185	398
475	University Drive	Yale Avenue to Ridgeline	72.0	85	184	395
476	University Drive	Michelson Drive to I-405 SB Off-Ramp	72.3	119	256	552
477	University Drive	Mesa to Campus Drive	73.3	99	214	462
478	University Drive	MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	73.3	99	214	462
479	University Drive	California Avenue to Mesa	73.3	99	214	462
480	University Drive	Campus Drive to Harvard Avenue	69.5	RW	167	359
481	University Drive	SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	70.4	53	114	247
482	University Drive	SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps	69.2	RW	159	344
483	University Drive	San Joaquin to Culver Drive	68.7	RW	149	321
484	University Drive	Harvard Avenue to San Joaquin	68.7	RW	149	321
485	Valley Oak Drive	Hawkcreek to Barranca Parkway	63.0	RW	RW	99
486	Valley Oak Drive	Irvine Center Drive to Oak Canyon Drive	65.2	RW	51	110
487	Valley Oak Drive	Barranca Parkway to Irvine Center Drive	62.9	RW	RW	98
488	Valley Oak Drive	Alton Parkway to Hawkcreek	63.8	RW	RW	111
489	Von Karman Avenue	Marriott to Morse Avenue	68.9	RW	114	246
490	Von Karman Avenue	Michelson Drive to Quartz	68.8	RW	112	242



Table 5

491	Von Karman Avenue	McGaw Avenue to Alton Parkway	69.3	RW	121	260
492	Von Karman Avenue	Alton Parkway to Barranca Parkway	68.4	RW	127	273
493	Von Karman Avenue	Main Street to Anchor	69.2	RW	118	255
494	Von Karman Avenue	Anchor to McGaw Avenue	69.2	RW	118	255
495	Von Karman Avenue	Morse to Main Street	69.2	RW	118	255
496	Von Karman Avenue	Martin to Dupont Drive	67.8	RW	97	208
497	Von Karman Avenue	Campus Drive to Martin	67.8	RW	97	208
498	Von Karman Avenue	Dupont Drive to Michelson Drive	67.8	RW	97	208
499	Walnut Avenue	Jeffrey Road to I-5 SB Off-Ramp	68.9	RW	113	244
500	Walnut Avenue	Myford Road to Jamboree Road SB Off-Ramp	68.6	RW	109	235
501	Walnut Avenue	The Mall Street to Culver Drive	68.2	RW	103	222
502	Walnut Avenue	Harvard Avenue to The Mall Street	68.2	RW	103	222
503	Walnut Avenue	Franciscan Street to Ravenwood Street	68.0	RW	100	214
504	Walnut Avenue	Ravenwood Street to Yale Avenue	68.0	RW	100	214
505	Walnut Avenue	Culver Drive to Franciscan Street	68.0	RW	100	214
506	Walnut Avenue	Peters Canyon Road to Harvard Avenue	67.0	RW	113	244
507	Walnut Avenue	Jamboree Road NB Off-Ramp to Peters Canyon Road	67.0	RW	113	244
508	Walnut Avenue	Yale Avenue to Kazan Street	66.3	RW	76	164
509	Walnut Avenue	Wisteria to Jeffrey Road	66.3	RW	76	164
510	Warner Avenue	Jamboree Road SB Off-ramp to Construction North	69.6	RW	126	272
511	Warner Avenue	Construction North to Harvard Avenue	67.8	RW	96	206
512	Warner Avenue	Harvard Avenue to Paseo Westpark	66.1	RW	74	159
513	Warner Avenue	Santa Ynez to Culver Drive	65.1	RW	64	137
514	Warner Avenue	Culver Drive to West Yale Loop	64.9	RW	RW	133
515	West Yale Loop	Alton Parkway to Blue Lake North	63.3	RW	RW	104
516	West Yale Loop	Eagle Run to Main Street	63.3	RW	RW	104
517	West Yale Loop	Thunder Run to Yale Avenue	62.7	RW	RW	95
518	West Yale Loop	Main Street to Timber Run	62.7	RW	RW	95
519	West Yale Loop	Yale Avenue to Shorebird	61.8	RW	RW	83
520	West Yale Loop	Warner Avenue to Stonecreek South	61.8	RW	RW	83
521	West Yale Loop	Barranca Parkway to Alton Parkway	61.7	RW	RW	81

Table 5

522	West Yale Loop	Stonecreek North to Warner Avenue	61.8	RW	RW	83
523	West Yale Loop	Birdsong to Barranca Parkway	61.8	RW	RW	83
524	Westwood	Yorktown to Bryan Avenue	63.2	RW	RW	61
525	Westwood	Bryan Avenue to Leaf	61.3	RW	RW	46
526	Yale Avenue	Deerfield Avenue to Winvale Avenue	68.5	RW	64	138
527	Yale Avenue	Hicks Canyon Drive to Meadowood	67.2	RW	52	113
528	Yale Avenue	Walnut Avenue to Roosevelt	70.7	44	96	206
529	Yale Avenue	Roosevelt to Trabuco Road	66.9	RW	83	179
530	Yale Avenue	Irvine Center Drive to Deerfield Avenue	66.5	RW	79	169
531	Yale Avenue	West Yale Loop to Irvine Center Drive	65.0	RW	63	135
532	Yale Avenue	Winvale Avenue to Karen Ann Lane	65.6	RW	69	148
533	Yale Avenue	Karen Ann Lane to Walnut Avenue	65.6	RW	69	148
534	Yale Avenue	Trabuco Road to Southwood	65.1	RW	63	136
535	Yale Avenue	Southwood to Bryan Avenue	65.1	RW	63	136
536	Yale Avenue	Northwood to Irvine Boulevard	64.8	RW	RW	131
537	Yale Avenue	Bryan Avenue to Monticello	64.8	RW	RW	131
538	Yale Avenue	Irvine Boulevard to Park Place	64.1	RW	RW	117
539	Yale Avenue	University Drive to Royce	57.9	RW	RW	RW
540	Yale Court	Arborwood to Portola Parkway	60.0	RW	RW	38

<sup>1</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest receiving land use.  
 "RW" = Location of the respective noise contour falls within the right-of-way of the road.

Table 6

Table 6: Current General Plan Conditions Noise Contours

ID	Road	Segment	CNEL at Nearest Receiving Land Use (dBA) <sup>1</sup>	Distance to Contour from Centerline (Feet)		
				70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Ada	Barranca Parway to Marine Way	0.0	RW	RW	RW
2	Ada	Alton Parkway to Barranca Parkway	67.1	RW	86	186
3	Alton Parkway	Enterprise to I-5 NB Off-Ramp	72.6	125	269	579
4	Alton Parkway	I-5 NB Off-Ramp to Technology Drive West	73.3	132	284	613
5	Alton Parkway	East Yale Loop to Jeffrey Road	71.5	79	170	367
6	Alton Parkway	Gateway Boulevard to Enterprise	70.5	91	195	421
7	Alton Parkway	Jeffrey Road to Royal Oak	70.4	66	143	308
8	Alton Parkway	Daimler Street to Red Hill Avenue	70.4	67	144	310
9	Alton Parkway	Culver Drive to West Yale Loop	70.5	68	146	315
10	Alton Parkway	West Yale Loop to Lake Road	70.5	67	145	311
11	Alton Parkway	Technology Drive West to Ada	71.4	99	213	458
12	Alton Parkway	Creek Road to East Yale Loop	70.3	66	141	304
13	Alton Parkway	Red Hill Avenue to Von Karman Avenue	69.9	RW	134	288
14	Alton Parkway	Lake Road to Creek Road	70.3	65	140	303
15	Alton Parkway	Telemetry to Banting	69.8	RW	130	279
16	Alton Parkway	Irvine Boulevard to Commercentre	71.0	98	210	453
17	Alton Parkway	Jenner to Telemetry	69.7	RW	129	278
18	Alton Parkway	Irvine Center Drive to Gateway Boulevard	69.8	RW	176	379
19	Alton Parkway	Sand Canyon Avenue to Hospital	73.6	105	226	487
20	Alton Parkway	Laguna Canyon Road to Jenner	69.7	RW	128	276
21	Alton Parkway	Technology Drive East to Barranca Pkwy/Muirlands Blvd	70.4	89	191	412
22	Alton Parkway	Royal Oak to Valley Oak Drive	69.7	RW	128	277
23	Alton Parkway	Banting to Pacifica	69.3	RW	121	262
24	Alton Parkway	Barranca Pkwy/Muirlands Blvd to Jeronimo Road	70.3	88	190	409
25	Alton Parkway	Ada to Technology Drive East	70.2	87	187	402

Table 6

26	Alton Parkway	Von Karman Avenue to Jamboree Road	69.2	RW	119	256
27	Alton Parkway	Jeronimo Road to Hughes	69.9	RW	179	385
28	Alton Parkway	Hughes to Morgan	69.7	RW	172	370
29	Alton Parkway	Morgan to Toledo Way	69.0	RW	154	332
30	Alton Parkway	San Marino to Culver Drive	69.0	RW	155	334
31	Alton Parkway	Jamboree Road to Murphy Avenue	68.6	RW	147	316
32	Alton Parkway	Hospital to Laguna Canyon Road	71.5	75	162	349
33	Alton Parkway	Valley Oak Drive to Sand Canyon Avenue	71.4	74	160	346
34	Alton Parkway	Murphy Avenue to Harvard Avenue	68.5	RW	143	308
35	Alton Parkway	Foster to Irvine Boulevard	69.0	RW	155	334
36	Alton Parkway	Fairbanks to Foster	68.7	RW	148	319
37	Alton Parkway	Toledo Way to Bertea	68.4	RW	142	306
38	Alton Parkway	Pacifica to Meridian	70.7	67	144	310
39	Alton Parkway	Bertea to Fairbanks	68.3	RW	140	301
40	Alton Parkway	Meridian to Irvine Center Drive	67.5	RW	124	267
41	Alton Parkway	Paseo Westpark to San Marino	68.0	RW	134	288
42	Alton Parkway	Harvard Avenue to Paseo Westpark	67.1	RW	117	252
43	Astor	Lynx to Fairbanks	66.9	RW	50	109
44	Astor	Cadence to Lynx	66.0	RW	44	95
45	Bake Parkway	I-5 NB Off-Ramp to Rockfield Boulevard	76.4	268	578	1245
46	Bake Parkway	Muirlands Boulevard to Jeronimo Road	72.9	131	281	606
47	Bake Parkway	Rockfield Boulevard to Muirlands Boulevard	75.1	217	468	1009
48	Bake Parkway	Jeronimo Road to Toledo Way	72.0	114	245	528
49	Bake Parkway	Toledo Way to Cromwell	71.6	108	232	500
50	Bake Parkway	Cromwell to Irvine Boulevard	71.6	108	232	501
51	Bake Parkway	Research Drive to I-5 SB Off-Ramp	69.3	RW	163	352
52	Bake Parkway	Irvine Center Drive to Research Drive	64.6	RW	RW	170
53	Bake Parkway	Lake Forest Drive to Irvine Center Drive	63.0	RW	RW	133
54	Banting	Alton Parkway to Barranca Parkway	59.3	RW	RW	RW
55	Barranca Parkway	Pacifica to Irvine Center Drive	71.7	81	174	375
56	Barranca Parkway	Banting to Pacifica	71.8	83	179	385

Table 6

57	Barranca Parkway	I-5 HOV Ramp to Technology Drive West	70.9	71	154	331
58	Barranca Parkway	Technology Drive West to Ada	71.5	78	169	364
59	Barranca Parkway	Irvine Center Drive to I-5 HOV Ramp	70.8	70	152	327
60	Barranca Parkway	Culver Drive to West Yale Loop	72.0	85	183	394
61	Barranca Parkway	East Yale Loop to Jeffrey Road	71.7	82	176	379
62	Barranca Parkway	West Yale Loop to Lake Road	71.8	82	177	382
63	Barranca Parkway	Ada to Alton Parkway	72.3	89	191	411
64	Barranca Parkway	Lake Road to Creek Road	71.4	78	168	362
65	Barranca Parkway	Red Hill Avenue to Armstrong Avenue	74.4	196	423	911
66	Barranca Parkway	Discovery/Herchel to Banting	71.1	74	159	343
67	Barranca Parkway	Lyon to East Yale Loop	71.1	74	160	345
68	Barranca Parkway	Creek Road to Lyon	71.1	74	159	342
69	Barranca Parkway	Von Karman Avenue to Jamboree Road	72.4	116	249	536
70	Barranca Parkway	Sand Canyon Avenue to Laguna Canyon Road	70.6	68	147	317
71	Barranca Parkway	Armstrong Avenue to Von Karman Avenue	72.1	110	238	513
72	Barranca Parkway	Valley Oak Drive to Sand Canyon Avenue	70.4	66	143	308
73	Barranca Parkway	Jamboree Road to Construction Circle	70.7	94	202	436
74	Barranca Parkway	Santa Rosa to Culver Drive	70.6	92	198	427
75	Barranca Parkway	FedEx to Discovery/Herchel	69.6	RW	126	271
76	Barranca Parkway	Jeffrey Road to Valley Oak Drive	69.7	RW	129	278
77	Barranca Parkway	Laguna Canyon Road to FedEx	69.4	RW	124	266
78	Barranca Parkway	Pullman Street to Red Hill Avenue	73.4	170	366	788
79	Barranca Parkway	Construction Circle to Fire Station	70.1	85	183	395
80	Barranca Parkway	Fire Station to Harvard Avenue	70.1	85	183	395
81	Barranca Parkway	Paseo Westpark to Santa Rosa	70.1	85	184	396
82	Barranca Parkway	Harvard Avenue to Paseo Westpark	69.7	RW	173	374
83	Bay Tree	Trabuco Road to Roosevelt	57.2	RW	RW	RW
84	Beacon	Ridge Valley to Benchmark	59.0	RW	RW	RW
85	Benchmark (LN Street)	Ridge Valley (O Street) to Bosque	56.7	RW	RW	RW
86	Bison Avenue	SR-73 NB Off-Ramp to California Avenue	69.7	RW	129	278
87	Bonita Canyon Drive	MacArthur Boulevard to SR-73	70.2	77	167	359

Table 6

88	Bonita Canyon Drive	Turtle Ridge to Shady Canyon Drive	68.5	RW	129	278
89	Bonita Canyon Drive	Newport Coast Drive to Turtle Ridge	68.2	RW	122	263
90	Bonita Canyon Drive	SR-73 NB Off-Ramp to Newport Coast Drive	67.9	RW	117	252
91	Bosque	Cadence to Great Park Boulevard	64.8	RW	RW	79
92	Bosque	Irvine Boulevard to Benchmark (LN Street)	63.0	RW	RW	59
93	Bosque	Benchmark to Cadence	63.0	RW	RW	59
94	Bosque	Great Park Boulevard to Beacon	56.9	RW	RW	RW
95	Bosque	Beacon to S 5th Street	55.9	RW	RW	RW
96	Bryan Avenue	Jamboree Road to Market Place	68.9	RW	114	245
97	Bryan Avenue	Market Place to El Camino Real	68.9	RW	114	245
98	Bryan Avenue	Rubicon to Culver Drive	68.9	RW	114	245
99	Bryan Avenue	El Camino Real to Rubicon	68.9	RW	114	245
100	Bryan Avenue	Eastwood to Jeffrey Road	66.3	RW	76	165
101	Bryan Avenue	Westwood to Yale Avenue	66.3	RW	77	165
102	Bryan Avenue	Culver Drive to Westwood	66.4	RW	78	168
103	Bryan Avenue	Yale Avenue to Eastwood	66.0	RW	73	157
104	Cadence	Pusan to Chinon	64.1	RW	RW	71
105	Cadence	Bosque to Pusan	64.2	RW	RW	71
106	Cadence	Ridge Valley (O Street) to Bosque	64.0	RW	RW	69
107	Cadence	Chinon to Merit	59.1	RW	RW	RW
108	Cadence	Merit to Astor	58.6	RW	RW	RW
109	California Avenue	University Drive to Academy Way	66.2	RW	75	161
110	California Avenue	Campus Drive to Harvard Avenue	64.1	RW	RW	118
111	California Avenue	Theory to Bison Avenue	64.0	RW	RW	116
112	Campus Drive	Carlson Avenue to University Drive	73.0	79	171	369
113	Campus Drive	University Drive to Bridge Road	71.7	81	174	374
114	Campus Drive	Jamboree Road to Carlson Avenue	71.3	76	164	353
115	Campus Drive	Stanford Court to Berkeley Avenue	71.0	73	158	341
116	Campus Drive	California Avenue to Culver Drive	70.9	72	155	333
117	Campus Drive	Berkeley Avenue to Cornell	69.9	RW	133	286
118	Campus Drive	Martin to Von Karman Avenue	68.7	RW	110	238

Table 6

119	Campus Drive	Culver Drive to Paseo Montoya (Turtle Rock Drive)	68.6	RW	109	235
120	Campus Drive	Von Karman Avenue to Teller Avenue	68.1	RW	100	216
121	Campus Drive	MacArthur Boulevard to Martin	68.1	RW	100	216
122	Campus Drive	Teller Avenue to Jamboree Road	67.2	RW	88	190
123	Carlson Avenue	Michelson Drive to Campus Drive	67.8	RW	97	208
124	Chinon	Irvine Boulevard to Cadence	58.3	RW	RW	RW
125	Creek Road	Alton Parkway to Barranca Parkway	56.0	RW	RW	RW
126	Culver Drive	Michelson Drive to I-405 SB Off-Ramp	73.7	149	320	690
127	Culver Drive	I-405 SB Off-Ramp to I-405 NB Off Ramp	73.9	152	327	705
128	Culver Drive	I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)	73.9	153	329	709
129	Culver Drive	Scottsdale Drive to I-5 SB Off- Ramp	73.9	152	328	707
130	Culver Drive	I-405 NB Off-Ramp to San Leandro	73.6	147	316	681
131	Culver Drive	San Leandro to Main Street	73.3	140	302	651
132	Culver Drive	Harvard Avenue to University Drive	73.3	139	300	646
133	Culver Drive	Trabuco Road to Farwell Avenue	74.4	156	337	725
134	Culver Drive	Alton Parkway to Barranca Parkway	73.2	137	296	638
135	Culver Drive	Main Street to Alton Parkway	73.1	135	290	626
136	Culver Drive	Warner Avenue to Irvine Center Drive	73.0	133	286	615
137	Culver Drive	Walnut Avenue to Scottsdale Dive	72.9	132	284	612
138	Culver Drive	Barranca Parkway to Warner Avenue	72.8	129	279	601
139	Culver Drive	Shady Canyon Drive to Palo Verde	72.1	86	185	399
140	Culver Drive	Deerfield Avenue to Walnut Avenue	72.6	125	269	580
141	Culver Drive	Sandburg Way to Michelson Drive	72.5	123	266	572
142	Culver Drive	Irvine Center Drive to Deerfield Avenue	72.4	122	262	566
143	Culver Drive	Palo Verde to Campus Drive	71.6	80	172	370
144	Culver Drive	University Drive to Sandburg Way	72.2	117	252	543
145	Culver Drive	Farwell Avenue to Bryan Avenue	73.3	132	284	612
146	Culver Drive	Campus Drive to High School	72.1	116	250	540
147	Culver Drive	High School to Harvard Avenue	72.0	115	248	534
148	Culver Drive	Bryan Avenue to Florence	71.8	111	238	513
149	Culver Drive	Portola Parkway to Settlers	71.1	74	159	342

Table 6

150	Culver Drive	Florence to Irvine Boulevard	71.7	109	235	506
151	Culver Drive	Irvine Boulevard to Viewpark	70.5	91	196	423
152	Culver Drive	Viewpark to Meadowood	70.5	91	195	421
153	Culver Drive	Settlers to Furrow	68.3	RW	104	224
154	Culver Drive	Meadowood to Portola Parkway	69.0	RW	154	333
155	Discovery Drive	Irvine Center Drive to Laguna Canyon Road	63.8	RW	RW	111
156	Discovery Drive	Waterworks Way to Irvine Center Drive	60.7	RW	RW	70
157	East Yale Loop	Alton Parkway to Witherspoon	65.3	RW	65	140
158	East Yale Loop	Osborn Street to Barranca Parkway	65.0	RW	RW	135
159	East Yale Loop	Yale Avenue to Springbrook South	64.3	RW	RW	121
160	East Yale Loop	Springbrook North to Alton Parkway	63.4	RW	RW	105
161	East Yale Loop	Woodspring to Yale Avenue	62.5	RW	RW	92
162	East Yale Loop	Barranca Parkway to Eastshore	62.5	RW	RW	92
163	Eastwood	Bryan Avenue to Monticello	60.5	RW	RW	40
164	Eastwood	Columbus to Bryan Avenue	58.8	RW	RW	RW
165	El Camino Real	Jamboree Road to Alliance (SR-261 Bridge)	67.0	RW	85	183
166	El Camino Real North	El Camino Real to Bryan Avenue	62.4	RW	RW	90
167	Fairbanks	Alton Parkway to Astor	69.7	RW	77	166
168	Fairbanks	Irvine Boulevard to Alton Parkway	66.8	RW	49	107
169	Fairchild Road	MacArthur Boulevard to Jamboree Road	64.0	RW	RW	116
170	Gateway Boulevard	Alton Parkway to Irvine Center Drive	62.8	RW	RW	96
171	Gateway Boulevard	Spectrum Center Drive (Fortune Drive) to Alton Parkway	61.6	RW	RW	80
172	Gateway Boulevard	Irvine Center Drive to Meridian	58.4	RW	RW	RW
173	Great Park Boulevard	Sand Canyon to Ridge Valley	74.1	113	244	525
174	Great Park Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	69.7	RW	129	279
175	Great Park Boulevard (EB)	Bosque to Skyhawk	68.0	RW	60	129
176	Great Park Boulevard (WB)	Bosque to Skyhawk	67.6	RW	56	120
177	Harvard Avenue	University Drive to Michelson Drive	71.8	49	106	229
178	Harvard Avenue	Michelson Drive to Coronado	70.2	64	138	298
179	Harvard Avenue	San Marino to Alton Parkway	70.0	RW	134	289
180	Harvard Avenue	Coronado to Main Street	70.0	63	135	290



Table 6

181	Harvard Avenue	San Carlo to San Marino	69.9	RW	132	284
182	Harvard Avenue	Main Street to San Carlo	69.8	RW	130	281
183	Harvard Avenue	Alton Parkway to San Leon	68.8	RW	111	239
184	Harvard Avenue	San Juan to Barranca Parkway	68.6	RW	109	236
185	Harvard Avenue	San Leon to San Juan	68.6	RW	108	233
186	Harvard Avenue	Irvine Center Drive to Deerfield Avenue	67.4	RW	91	196
187	Harvard Avenue	Deerfield Avenue to Poplar Street	67.4	RW	91	195
188	Harvard Avenue	Barranca Parkway to Warner Avenue	67.9	RW	97	209
189	Harvard Avenue	Bridge Road to University Drive	67.6	RW	93	199
190	Harvard Avenue	Paseo Westpark to Irvine Center Drive	67.7	RW	95	205
191	Harvard Avenue	Poplar Street to Walnut Avenue	68.7	RW	89	191
192	Harvard Avenue	California Avenue to Berkeley Avenue	67.0	RW	85	183
193	Harvard Avenue	Culver Drive to California Avenue	66.9	RW	84	181
194	Harvard Avenue	Berkeley to Bridge Road	67.0	RW	85	183
195	Harvard Avenue	Warner Avenue to Paseo Westpark	66.8	RW	82	178
196	Hicks Canyon Drive	Delamesa to Yale Avenue	58.4	RW	RW	RW
197	Hornet (5th St)	Ridge Valley (O Street) to Bosque	57.5	RW	RW	RW
198	Hubble	Irvine Center Drive to Bunsen	55.7	RW	RW	RW
199	Irvine Boulevard	SR-133 NB Off- Ramp to Ridge Valley (O Street)	72.3	120	258	557
200	Irvine Boulevard	SR-133 SB Off-Ramp to SR-133 NB Off-Ramp	72.2	118	254	547
201	Irvine Boulevard	Sand Canyon to SR-133 SB Off-Ramp	73.1	128	277	596
202	Irvine Boulevard	Merit to Alton	71.6	108	232	500
203	Irvine Boulevard	Journey to Sand Canyon Avenue	71.6	108	232	501
204	Irvine Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	71.2	100	216	466
205	Irvine Boulevard	Pusan Way to Chinon (B Street)	71.0	98	211	455
206	Irvine Boulevard	Palo Lado to Yale Avenue	70.6	92	197	425
207	Irvine Boulevard	Culver Drive to Palo Lado	70.6	92	199	429
208	Irvine Boulevard	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.6	92	198	427
209	Irvine Boulevard	Old Myford Road to Market Place	70.5	91	196	423
210	Irvine Boulevard	Bosque (LY Street) to Modjeska	70.7	93	200	432
211	Irvine Boulevard	Jamboree Road to Old Myford Road	70.5	90	195	419

Table 6

212	Irvine Boulevard	Market Place to SR-261 SB Off-Ramp	70.4	90	194	417
213	Irvine Boulevard	Jeffrey Road to Groveland	70.8	95	205	441
214	Irvine Boulevard	Bake Parkway to Lake Forest Drive	70.9	96	206	444
215	Irvine Boulevard	Independence Way (The Groves)/The Groves to Jeffrey Road	70.5	91	196	421
216	Irvine Boulevard	Chinon (B Street) to Merit	70.5	90	194	418
217	Irvine Boulevard	SR-261 NB Off-Ramp to Central Park	70.2	87	188	405
218	Irvine Boulevard	Pueblo Norte to Independence Way (The Groves)/ Parkwood	70.1	85	183	395
219	Irvine Boulevard	Yale Avenue to Pueblo Norte	70.1	85	183	394
220	Irvine Boulevard	Modjeska to Pusan Way	70.2	87	188	404
221	Irvine Boulevard	Central Park Avenue to Culver Drive	69.6	RW	171	369
222	Irvine Boulevard	Parker to Bake Parkway	69.6	RW	170	366
223	Irvine Boulevard	Alton Parkway to Fairbanks	68.6	RW	146	315
224	Irvine Center Drive	Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp	72.5	118	254	548
225	Irvine Center Drive	Orange Tree to Valley Oak Drive	71.4	105	225	486
226	Irvine Center Drive	I-405 SB Off-Ramp to Research	72.1	111	238	513
227	Irvine Center Drive	Irvine Valley College to Orange Tree	71.3	103	221	476
228	Irvine Center Drive	Fontaine Avenue to Jeffrey Road	71.0	99	212	458
229	Irvine Center Drive	Culver Drive to Deerwood	71.0	98	211	455
230	Irvine Center Drive	Deerwood to Yale Avenue	71.0	97	210	451
231	Irvine Center Drive	Yale Avenue to Fontaine Avenue	70.9	97	208	449
232	Irvine Center Drive	Jeffrey Road to Irvine Valley College	71.1	99	213	458
233	Irvine Center Drive	Alton Parkway to Spectrum	70.4	90	193	416
234	Irvine Center Drive	Spectrum to Pacifica	70.3	88	191	411
235	Irvine Center Drive	Hearthstone to Culver Drive	70.6	93	200	430
236	Irvine Center Drive	Charter to Barranca Parkway	70.2	87	187	402
237	Irvine Center Drive	Jamboree Road to Harvard Avenue	70.3	88	189	407
238	Irvine Center Drive	Pacifica to Entertainment (Enterprise/Fortune)	70.3	88	189	408
239	Irvine Center Drive	Valley Oak Drive to Sand Canyon Avenue	70.0	84	181	391
240	Irvine Center Drive	Harvard Avenue to Hearthstone	70.0	RW	180	387
241	Irvine Center Drive	Research to Hubble	69.8	RW	176	379
242	Irvine Center Drive	Barranca Parkway to Gateway Boulevard	69.4	RW	165	356

Table 6

243	Irvine Center Drive	Bake Parkway to Muller	69.9	RW	179	386
244	Irvine Center Drive	Discovery to Charter	69.3	RW	163	350
245	Irvine Center Drive	Hubble to Bake Parkway	69.7	RW	173	373
246	Irvine Center Drive	Muller to Tesla	69.5	RW	167	359
247	Irvine Center Drive	Sand Canyon Avenue to Odyssey	69.0	RW	155	335
248	Irvine Center Drive	Tesla to Scientific Way	69.2	RW	160	345
249	Irvine Center Drive	Scientific Way to Lake Forest Drive	68.9	RW	154	331
250	Irvine Center Drive	Gateway Boulevard to Alton Parkway	68.3	RW	140	302
251	Irvine Center Drive	Laguna Canyon Road to Discovery	68.2	RW	137	295
252	Irvine Center Drive	Odyssey to Laguna Canyon Road	68.3	RW	140	301
253	Irvine Center Drive (Edinger)	Redhill Avenue to Jamboree Road	70.8	95	204	441
254	Jamboree Road	I-5 SB Off-Ramp to I-5 NB Off-Ramp	74.5	168	362	780
255	Jamboree Road	I-405 SB Off-Ramp to I-405 NB Off Ramp	75.4	183	395	851
256	Jamboree Road	Walnut Avenue to Michelle Drive	73.8	152	327	704
257	Jamboree Road	I-405 NB Off-Ramp to Main Street	76.9	288	619	1335
258	Jamboree Road	Michelle Drive to I-5 SB Off-Ramp	73.6	146	314	677
259	Jamboree Road	Main Street to Kelvin Avenue	76.2	257	554	1194
260	Jamboree Road	Michelson Drive to I-405 SB Off-Ramp	74.2	209	450	969
261	Jamboree Road	Kelvin Avenue to McGaw Avenue	75.8	245	528	1137
262	Jamboree Road	McGaw Avenue to Alton Parkway	75.8	243	523	1126
263	Jamboree Road	Birch Street to Campus Drive	72.6	125	269	581
264	Jamboree Road	Dupont Drive to Michelson Drive	73.5	138	297	639
265	Jamboree Road	Alton Parkway to Beckman	75.4	229	494	1064
266	Jamboree Road	Fairchild Road to Birch Street	73.2	130	281	605
267	Jamboree Road	Beckman to Barranca Parkway	75.2	222	478	1029
268	Jamboree Road	I-5 NB Off-Ramp to El Camino Real	75.1	218	470	1013
269	Jamboree Road	Campus Drive to Dupont Drive	72.7	122	263	566
270	Jamboree Road	El Camino Real to West Drive	75.1	218	470	1013
271	Jamboree Road	West Drive to Bryan Avenue	75.1	218	469	1011
272	Jamboree Road	Bryan Avenue to Irvine Boulevard	74.8	208	449	968
273	Jamboree Road	Koll Center to Fairchild Road	72.5	117	251	541

Table 6

274	Jamboree Road	MacArthur Boulevard to Koll Center	72.5	117	252	543
275	Jamboree Road	Irvine Boulevard to Portola Parkway	70.8	95	206	443
276	Jamboree Road	Warner Avenue to Edinger Avenue	79.1	257	554	1194
277	Jamboree Road	Barranca Parkway to Warner Avenue	78.2	227	488	1052
278	Jamboree Road	Edinger Avenue to Walnut Avenue	77.9	217	467	1006
279	Jeffrey Road	Walnut Avenue to I-5 NB Off-Ramp	71.3	102	220	474
280	Jeffrey Road	I-5 NB Off-Ramp to Roosevelt	72.2	113	242	522
281	Jeffrey Road	Poplar (Meadows) to Walnut Avenue	70.8	95	205	443
282	Jeffrey Road	Alton Parkway to Barranca Parkway	70.5	91	196	422
283	Jeffrey Road	Irvine Center Drive to Poplar (Meadows)	70.6	93	200	430
284	Jeffrey Road	I-405 NB Off-Ramp to Quail Creek	70.5	90	195	419
285	Jeffrey Road	Barranca Parkway to Irvine Valley College	70.4	90	194	418
286	Jeffrey Road	Quail Creek to Alton Parkway	70.5	91	195	420
287	Jeffrey Road	Irvine Valley College to Irvine Center Drive	70.3	88	189	408
288	Jeffrey Road	Trabuco Road to Hideaway	69.7	RW	173	372
289	Jeffrey Road	Hideaway to Bryan Avenue	69.7	RW	172	371
290	Jeffrey Road	Roosevelt to Grove	70.4	84	182	392
291	Jeffrey Road	Grove to Trabuco Road	70.3	84	181	390
292	Jeffrey Road	Bryan Avenue to Irvine Boulevard	68.5	RW	144	310
293	Jeffrey Road	Encore to Portola Parkway	66.1	RW	99	213
294	Jeffrey Road	Irvine Boulevard to Encore	65.6	RW	93	200
295	Jeronimo Road	Goodyear to Bake Parkway	64.8	RW	RW	130
296	Jeronimo Road	Alton Parkway to Goodyear	64.7	RW	RW	128
297	Laguna Canyon Road	Old Laguna Canyon Road to Lake Forest Drive	73.3	140	302	650
298	Laguna Canyon Road	Laguna Canyon Freeway to Quail Hill Parkway	70.0	RW	134	289
299	Laguna Canyon Road	Discovery to Sand Canyon Avenue	68.1	RW	101	217
300	Laguna Canyon Road	I-405 Overcrossing to Pasteur	68.0	RW	79	171
301	Laguna Canyon Road	Irvine Center Drive to Discovery	67.3	RW	89	192
302	Laguna Canyon Road	Quail Hill Parkway to I-405 Overcrossing	68.0	RW	79	171
303	Laguna Canyon Road	Pasteur to Alton Parkway	66.9	RW	84	181
304	Laguna Canyon Road	Waterworks to Irvine Center Drive	66.2	RW	75	162

Table 6

305	Laguna Canyon Road	Alton Parkway to Barranca Parkway	66.0	RW	73	158
306	Laguna Canyon Road	Barranca Parkway to Waterworks	65.6	RW	69	148
307	Lake Forest Drive	Hidden Canyon to Laguna Canyon Road	69.2	RW	119	257
308	Lake Forest Drive	Bake Parkway to Hidden Canyon (Romano)	69.2	RW	119	256
309	Lake Forest Drive	Tesla to Bake Parkway	66.2	RW	102	219
310	Lake Road	Alton Parkway to Barranca Parkway	59.2	RW	RW	RW
311	Lynx	Irvine Boulevard to Astor	53.5	RW	RW	RW
312	MacArthur Boulevard	I-405 SB Off-Ramp to Michelson Drive	76.4	267	576	1241
313	MacArthur Boulevard	Main Street to I-405 NB Off-Ramp	76.5	272	586	1262
314	MacArthur Boulevard	I-405 NB Off-Ramp and I-405 SB Off-Ramp	76.4	267	575	1240
315	MacArthur Boulevard	Jamboree Road to Fairchild Road	69.9	RW	178	382
316	MacArthur Boulevard	Fairchild Road to University Drive	69.8	RW	174	376
317	MacArthur Boulevard	Fitch to Red Hill Avenue	70.5	86	186	401
318	MacArthur Boulevard	Michelson Drive to Douglas	71.8	131	283	610
319	MacArthur Boulevard	Douglas to Campus Drive	71.9	133	286	617
320	MacArthur Boulevard	Skypark to Main Street	69.6	RW	161	347
321	MacArthur Boulevard	Redhill Avenue to Skypark	68.5	RW	143	308
322	MacArthur Boulevard	Birch Street to Jamboree Road	66.8	RW	111	239
323	MacArthur Boulevard	Campus Drive to Birch Street	69.1	RW	187	404
324	Main Street	Gillette Avenue to Von Karman Avenue	70.2	82	177	380
325	Main Street	MacArthur Boulevard to Mercantile	69.9	RW	170	366
326	Main Street	Executive Park to MacArthur Boulevard	68.2	RW	137	294
327	Main Street	Von Karman Avenue to Cartwright	67.8	RW	129	279
328	Main Street	McDurmott to Red Hill Avenue	68.0	RW	133	286
329	Main Street	Red Hill Avenue to Executive Circle	67.9	RW	131	283
330	Main Street	Jamboree Road to Union	67.7	RW	127	274
331	Main Street	Culver Drive to West Yale Loop	67.2	RW	88	190
332	Main Street	Siglo to Jamboree Road	67.4	RW	121	261
333	Main Street	Veneto to Harvard Avenue	67.6	RW	126	271
334	Main Street	Paseo Westpark to Culver Drive	66.4	RW	77	167
335	Main Street	Harvard Avenue to San Mateo	66.3	RW	76	164

Table 6

336	Marine Way	Sand Canyon Avenue to Ridge Valley (O Street)	72.1	69	149	320
337	Marine Way	Alton Parkway to Bake Parkway	69.0	RW	116	250
338	Marine Way	Lynx to Barranca Parkway	69.4	RW	123	264
339	Marine Way	County Access to Treble	65.3	RW	66	142
340	Marine Way	Ridge Valley (O Street) to Skyhawk	67.6	RW	92	199
341	Marine Way	Skyhawk to County Access	64.9	RW	RW	133
342	Marine Way	Barranca Parkway to Alton Parkway	66.3	RW	76	164
343	Marine Way	Treble to Lynx	67.1	RW	86	185
344	McGaw Avenue	Von Karman Avenue to Jamboree Road	63.6	RW	RW	109
345	McGaw Avenue	Red Hill Avenue to Von Karman Avenue	63.6	RW	RW	109
346	McGaw Avenue	Daimler to Red Hill Avenue	62.4	RW	RW	91
347	McGaw Avenue	Jamboree Road to Murphy Avenue	59.2	RW	RW	RW
348	Meadowood	Culver Drive to Canyonwood	59.8	RW	RW	RW
349	Meridian	Spectrum to Alton Parkway	54.9	RW	RW	RW
350	Meridian	Alton Parkway to Gateway Boulevard	54.1	RW	RW	RW
351	Merit	Irvine Boulevard to Cadence	57.3	RW	RW	RW
352	Michelson Drive	Riparian to Harvard Avenue	67.8	RW	97	208
353	Michelson Drive	Almond Tree Lane to Yale Avenue	66.7	RW	49	105
354	Michelson Drive	Von Karman Avenue to Obsidian	67.8	RW	95	206
355	Michelson Drive	Parkside to Culver Drive	66.8	RW	83	178
356	Michelson Drive	Gillman to Seton/Sandburg Way	66.5	RW	47	102
357	Michelson Drive	Carlson to Prince	67.0	RW	101	218
358	Michelson Drive	MacArthur Boulevard to Dupont Drive	67.0	RW	84	182
359	Michelson Drive	Harvard Avenue to Parkside	66.8	RW	83	178
360	Michelson Drive	Bixby to Von Karman Avenue	66.3	RW	76	165
361	Michelson Drive	Jamboree Road to Carlson	69.5	RW	119	256
362	Michelson Drive	Teller to Jamboree Road	69.5	RW	119	256
363	Michelson Drive	Jordan East to University Drive	66.8	RW	39	85
364	Michelson Drive	Culver Drive to Angell	66.1	RW	47	102
365	Modjeska (A Street)	Portola Springs to Irvine Boulevard	71.7	39	83	180
366	Modjeska (A Street)	South of Irvine Boulevard	60.6	RW	RW	41

Table 6

367	Muirlands Boulevard	Bake Parkway to City Limits	67.2	RW	87	188
368	Muirlands Boulevard	Alton Parkway to Sterling	66.3	RW	76	165
369	Muirlands Boulevard	Wrigley to Bake Parkway	66.2	RW	75	162
370	Newport Coast Drive	SR-73 NB Off-Ramp to Turtle Ridge	66.7	RW	81	174
371	Newport Coast Drive	Turtle Crest to Bonita Canyon Drive	65.2	RW	64	139
372	Nightmist	Sand Canyon Avenue to Tulip (Road C)	62.1	RW	RW	86
373	Northwood	Yale Avenue to Savannah	62.4	RW	RW	54
374	Northwood	Goldrush to Yale Avenue	61.3	RW	RW	46
375	Oak Canyon Drive	Valley Oak Drive to Sand Canyon Avenue	67.4	RW	54	117
376	Pacifica	Gateway to Barranca Parkway	64.6	RW	RW	127
377	Pacifica	Alton Parkway to Gateway	63.2	RW	RW	102
378	Pacifica	Irvine Center Drive to Fortune Drive (Spectrum Center Drive)	63.2	RW	RW	102
379	Pacifica	Meridian to Alton Parkway	60.0	RW	RW	RW
380	Park Place	Christamon South to Yale Avenue	57.0	RW	RW	RW
381	Portola Parkway	Bee Canyon Access Road to Sand Canyon Avenue	71.3	76	164	353
382	Portola Parkway	Jeffrey Road to Bee Canyon Access Road	71.3	76	164	353
383	Portola Parkway	Arrowhead to Ridge Valley Parkway	71.3	76	164	353
384	Portola Parkway	Sand Canyon Avenue to Arrowhead	70.9	72	155	334
385	Portola Parkway	Portola Springs to SR-241 SB Off-Ramp	70.0	63	135	291
386	Portola Parkway	Gatepark to Culver Drive	70.3	87	188	405
387	Portola Parkway	ETC-6 (SR-261) NB Off-Ramp to Gatepark	70.2	87	188	404
388	Portola Parkway	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.1	85	184	396
389	Portola Parkway	Jamboree Road to Bellevue	70.1	85	182	393
390	Portola Parkway	Bellevue to ETC-6 (SR-261) SB Off-Ramp	70.0	84	181	391
391	Portola Parkway	Yale Avenue to Jeffrey Road	69.8	RW	177	381
392	Portola Parkway	Culver Drive to Yale Avenue	69.4	RW	165	356
393	Portola Parkway	Silverado to Portola Springs	68.5	RW	107	231
394	Pusan	Irvine Boulevard to Cadence	56.1	RW	RW	RW
395	Quail Hill Parkway	Shady Canyon Drive to Passage	67.6	RW	93	199
396	Quail Hill Parkway	East Knollcrest to Laguna Canyon Road	65.6	RW	69	148
397	Quassar Drive (Spectrum)	Irvine Center Drive to Spectrum Center Drive (Fortune)	54.9	RW	RW	RW

Table 6

398	Red Hill Avenue	MacArthur Boulevard to McGaw Avenue	71.3	102	219	472
399	Red Hill Avenue	I-405 Over Crossing to Main Street	69.9	RW	132	284
400	Red Hill Avenue	Alton Parkway to Deere Avenue	69.9	RW	179	385
401	Red Hill Avenue	McGaw Avenue to Alton Parkway	69.7	RW	174	375
402	Red Hill Avenue	Deere Avenue to Barranca Parkway	69.7	RW	174	374
403	Red Hill Avenue	Skypark East to MacArthur Boulevard	71.0	70	150	323
404	Red Hill Avenue	Main Street to Skypark East	70.4	63	136	294
405	Research Drive	Hubble to Bake Parkway	69.5	RW	124	267
406	Research Drive	Scientific to Lake Forest Drive	67.6	RW	93	200
407	Research Drive	Bake Parkway to Muller	66.5	RW	79	170
408	Research Drive	Irvine Center Drive to Bunsen	65.5	RW	67	144
409	Ridge Valley (O Street)	Irvine Boulevard to Trabuco Road (Great Park Boulevard)	67.4	RW	91	196
410	Ridge Valley (O Street)	Portola Parkway to Irvine Boulevard	66.5	RW	79	170
411	Ridge Valley (O Street)	Trabuco Road (Great Park Boulevard) to Marine Way	66.0	RW	73	157
412	Ridge Valley (O Street)	Ranchland to Portola Parkway	58.1	RW	RW	RW
413	Ridgeline Drive	Concordia East to University Drive	68.6	RW	69	149
414	Ridgeline Drive	Turtle Rock Drive to San Simeon	68.2	RW	65	141
415	Rockfield Avenue	Whatney to McLaren	67.5	RW	92	199
416	Rockfield Avenue	Bake Parkway to Whatney	63.8	RW	RW	112
417	Rockfield Avenue	Thomas to Bake Parkway	62.6	RW	RW	94
418	Roosevelt	Jeffrey Road to Vision	66.1	RW	75	161
419	Roosevelt	Yale Avenue to Van Buren	68.1	RW	48	104
420	Roosevelt	Vision to Bay Tree	65.9	RW	72	155
421	Roosevelt	Nimitz to Jeffrey Road	65.8	RW	70	152
422	Roosevelt	Tulip (Road C) to Sand Canyon Avenue	65.6	RW	69	149
423	Royal Oak	Alton Parkway to Eaglecreek	64.0	RW	RW	56
424	Sand Canyon Avenue	Oak Canyon Drive to Burt Road	71.9	112	241	520
425	Sand Canyon Avenue	Irvine Center Drive to Oak Canyon Drive	71.6	107	232	499
426	Sand Canyon Avenue	I-405 NB Off-Ramp to Alton Parkway	74.4	119	256	551
427	Sand Canyon Avenue	Burt Road to I-5 SB Off-Ramp	72.6	118	255	550
428	Sand Canyon Avenue	Marine to I-5 NB Off-Ramp	74.6	202	434	935



Table 6

429	Sand Canyon Avenue	Trabuco Road to Towngate	71.3	102	220	474
430	Sand Canyon Avenue	Barranca Parkway to Waterworks	70.6	92	199	429
431	Sand Canyon Avenue	I-5 SB Off-Ramp to Marine	73.8	178	384	828
432	Sand Canyon Avenue	Hospital to Barranca Parkway	70.4	89	191	412
433	Sand Canyon Avenue	Nightmist to Roosevelt	73.4	170	366	788
434	Sand Canyon Avenue	I-405 SB Off-Ramp to I-405 NB Off-Ramp	73.4	101	217	469
435	Sand Canyon Avenue	I-5 NB Off-Ramp to Nightmist	73.5	171	368	792
436	Sand Canyon Avenue	Towngate to Irvine Boulevard	70.6	92	198	427
437	Sand Canyon Avenue	Waterworks to Irvine Center Drive	70.0	84	181	390
438	Sand Canyon Avenue	Irvine Boulevard to Portola Parkway	69.3	RW	120	259
439	Sand Canyon Avenue	Roosevelt to Trabuco Road	72.8	153	331	712
440	Sand Canyon Avenue	Alton Parkway to Hospital	70.5	86	185	399
441	Sand Canyon/Shady Canyon	Quail Hill Parkway to I-405 SB Ramps	71.6	76	164	354
442	Scientific Way	Irvine Center Drive to Wald	54.9	RW	RW	RW
443	Shady Canyon Drive	Culver Drive/Bonita Canyon Drive to Cloverfield	68.8	RW	67	145
444	Shady Canyon Drive	Bommer Canyon Road to Sunnyhill	67.3	RW	71	153
445	Skyhawk	Great Park Boulevard to Marine Way	60.2	14	30	64
446	Southwood	Yale Avenue to Colt	60.5	9	19	40
447	Southwood	Challenger to Yale Avenue	60.3	8	18	39
448	Spectrum Center Drive (Fortune Drive)	Pacifica to Quassar Drive (Spectrum )	61.9	18	39	84
449	Spectrum Center Drive (FortuneDrive)	Quassar Drive (Spectrum ) to Gatewayb	62.4	20	42	91
450	Sunnyhill	Shady Canyon Drive to Turtle Rock Drive	57.0	9	18	40
451	Technology Drive	Barranca Parkway to Alton Parkway	69.9	62	133	286
452	Technology Drive	Old Laguna Canyon Road to I-5/SR-133 Undercrossing	67.1	40	87	186
453	Technology Drive	I-5/SR-133 to Barranca Parkway	66.1	34	74	160
454	Technology Drive	Ada to Alton Parkway	59.9	13	29	62
455	Toledo Way	Bake Parkway to City Limits	65.8	33	70	151
456	Toledo Way	Goodyear to Bake Parkway	64.9	28	61	132
457	Toledo Way	Alton Parkway to Parker	64.5	27	58	126
458	Trabuco Road	Keystone to Sand Canyon Avenue	67.0	39	85	183
459	Trabuco Road	Jeffrey Road to Keystone	66.9	39	84	181

Table 6

460	Trabuco Road	Culver Drive to I-5 NB Off-Ramp	66.6	37	80	173
461	Trabuco Road	Monroe to Yale Avenue	66.5	37	79	170
462	Trabuco Road	I-5 NB Off-Ramp to Monroe	66.5	37	79	170
463	Trabuco Road	Yale Avenue to Remington	66.0	34	72	156
464	Trabuco Road	Remington to Jeffrey Road	66.0	34	72	156
465	Turtle Ridge Drive	Federation Way to Bonita Canyon	68.8	52	112	241
466	Turtle Rock Drive	Ridgeline to Willowleaf	67.5	26	55	119
467	Turtle Rock Drive	Silkwood to Sunnyhill	67.4	25	54	116
468	Turtle Rock Drive	Canyon Park to Ridgeline	66.8	23	50	107
469	Turtle Rock Drive	Sunnyhill to Southernwood	64.0	15	32	69
470	Turtle Rock Drive	Campus Drive to Hillgate	64.0	25	54	116
471	Turtle Rock Drive	Paseo Segovia to Campus Drive	65.4	20	43	92
472	University Drive	Golden Glow to Yale Avenue	72.6	94	202	435
473	University Drive	Ridgeline to Michelson Drive	72.3	107	231	497
474	University Drive	Culver Drive to Golden Glow	72.5	92	198	427
475	University Drive	Yale Avenue to Ridgeline	72.2	87	188	404
476	University Drive	Michelson Drive to I-405 SB Off-Ramp	72.4	122	262	564
477	University Drive	Mesa to Campus Drive	74.2	115	247	532
478	University Drive	MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	74.2	115	247	533
479	University Drive	California Avenue to Mesa	74.1	113	243	523
480	University Drive	Campus Drive to Harvard Avenue	70.3	88	190	409
481	University Drive	SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	71.3	61	132	284
482	University Drive	SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps	70.0	84	180	389
483	University Drive	San Joaquin to Culver Drive	69.4	76	165	354
484	University Drive	Harvard Avenue to San Joaquin	69.4	76	164	353
485	Valley Oak Drive	Hawkcreek to Barranca Parkway	68.0	46	100	215
486	Valley Oak Drive	Irvine Center Drive to Oak Canyon Drive	67.6	34	74	160
487	Valley Oak Drive	Barranca Parkway to Irvine Center Drive	65.7	32	70	151
488	Valley Oak Drive	Alton Parkway to Hawkcreek	65.0	29	62	134
489	Von Karman Avenue	Marriott to Morse Avenue	70.6	69	148	318
490	Von Karman Avenue	Michelson Drive to Quartz	70.4	66	143	308

Table 6

491	Von Karman Avenue	McGaw Avenue to Alton Parkway	70.1	64	137	296
492	Von Karman Avenue	Alton Parkway to Barranca Parkway	69.7	72	155	334
493	Von Karman Avenue	Main Street to Anchor	69.9	62	134	288
494	Von Karman Avenue	Anchor to McGaw Avenue	69.9	61	132	284
495	Von Karman Avenue	Morse to Main Street	69.9	61	132	285
496	Von Karman Avenue	Martin to Dupont Drive	69.2	55	119	257
497	Von Karman Avenue	Campus Drive to Martin	69.2	55	118	255
498	Von Karman Avenue	Dupont Drive to Michelson Drive	69.2	55	119	255
499	Walnut Avenue	Jeffrey Road to I-5 SB Off-Ramp	70.5	68	146	315
500	Walnut Avenue	Myford Road to Jamboree Road SB Off-Ramp	68.9	53	114	245
501	Walnut Avenue	The Mall Street to Culver Drive	68.5	49	106	229
502	Walnut Avenue	Harvard Avenue to The Mall Street	68.4	49	106	228
503	Walnut Avenue	Franciscan Street to Ravenwood Street	68.1	47	101	217
504	Walnut Avenue	Ravenwood Street to Yale Avenue	68.1	47	101	218
505	Walnut Avenue	Culver Drive to Franciscan Street	68.1	47	101	217
506	Walnut Avenue	Peters Canyon Road to Harvard Avenue	67.6	58	125	270
507	Walnut Avenue	Jamboree Road NB Off-Ramp to Peters Canyon Road	67.5	57	123	266
508	Walnut Avenue	Yale Avenue to Kazan Street	67.0	39	84	182
509	Walnut Avenue	Wisteria to Jeffrey Road	67.0	39	85	183
510	Warner Avenue	Jamboree Road SB Off-ramp to Construction North	70.1	63	136	293
511	Warner Avenue	Construction North to Harvard Avenue	68.4	49	105	227
512	Warner Avenue	Harvard Avenue to Paseo Westpark	66.8	38	82	177
513	Warner Avenue	Santa Ynez to Culver Drive	65.6	32	69	149
514	Warner Avenue	Culver Drive to West Yale Loop	65.1	30	64	137
515	West Yale Loop	Alton Parkway to Blue Lake North	64.0	25	53	115
516	West Yale Loop	Eagle Run to Main Street	63.8	24	52	112
517	West Yale Loop	Thunder Run to Yale Avenue	63.6	23	50	109
518	West Yale Loop	Main Street to Timber Run	62.9	21	45	98
519	West Yale Loop	Yale Avenue to Shorebird	62.1	19	40	87
520	West Yale Loop	Warner Avenue to Stonecreek South	62.4	19	42	90
521	West Yale Loop	Barranca Parkway to Alton Parkway	62.4	19	42	90

Table 6

522	West Yale Loop	Stonecreek North to Warner Avenue	62.0	18	39	85
523	West Yale Loop	Birdsong to Barranca Parkway	62.2	19	41	88
524	Westwood	Yorktown to Bryan Avenue	63.6	14	30	65
525	Westwood	Bryan Avenue to Leaf	61.6	10	22	48
526	Yale Avenue	Deerfield Avenue to Winvale Avenue	68.6	30	65	141
527	Yale Avenue	Hicks Canyon Drive to Meadowood	67.4	25	54	116
528	Yale Avenue	Walnut Avenue to Roosevelt	70.9	46	100	215
529	Yale Avenue	Roosevelt to Trabuco Road	67.1	40	86	185
530	Yale Avenue	Irvine Center Drive to Deerfield Avenue	67.0	40	85	183
531	Yale Avenue	West Yale Loop to Irvine Center Drive	65.8	33	70	152
532	Yale Avenue	Winvale Avenue to Karen Ann Lane	65.7	33	70	151
533	Yale Avenue	Karen Ann Lane to Walnut Avenue	65.7	33	70	151
534	Yale Avenue	Trabuco Road to Southwood	65.6	32	69	148
535	Yale Avenue	Southwood to Bryan Avenue	65.6	32	68	147
536	Yale Avenue	Northwood to Irvine Boulevard	65.3	30	65	141
537	Yale Avenue	Bryan Avenue to Monticello	65.2	30	65	140
538	Yale Avenue	Irvine Boulevard to Park Place	64.3	26	56	121
539	Yale Avenue	University Drive to Royce	63.0	17	37	80
540	Yale Court	Arborwood to Portola Parkway	60.3	8	18	39

<sup>1</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest receiving land use.  
 "RW" = Location of the respective noise contour falls within the right-of-way of the road.

Table 7

Table 7: Conservative Plan Conditions Noise Contours

ID	Road	Segment	CNEL at Nearest Receiving Land Use (dBA) <sup>1</sup>	Distance to Contour from Centerline (Feet)		
				70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Ada	Barranca Parway to Marine Way	70.8	42	91	196
2	Ada	Alton Parkway to Barranca Parkway	69.3	RW	120	259
3	Alton Parkway	Enterprise to I-5 NB Off-Ramp	74.1	159	342	736
4	Alton Parkway	I-5 NB Off-Ramp to Technology Drive West	74.8	167	360	775
5	Alton Parkway	East Yale Loop to Jeffrey Road	71.8	83	178	383
6	Alton Parkway	Gateway Boulevard to Enterprise	72.0	114	245	529
7	Alton Parkway	Jeffrey Road to Royal Oak	70.9	72	154	333
8	Alton Parkway	Daimler Street to Red Hill Avenue	70.7	69	149	322
9	Alton Parkway	Culver Drive to West Yale Loop	70.7	69	149	322
10	Alton Parkway	West Yale Loop to Lake Road	70.7	69	149	321
11	Alton Parkway	Technology Drive West to Ada	72.6	120	258	556
12	Alton Parkway	Creek Road to East Yale Loop	70.6	69	148	319
13	Alton Parkway	Red Hill Avenue to Von Karman Avenue	70.5	68	146	314
14	Alton Parkway	Lake Road to Creek Road	70.4	66	143	308
15	Alton Parkway	Telemetry to Banting	70.4	67	144	309
16	Alton Parkway	Irvine Boulevard to Commercentre	70.8	95	205	441
17	Alton Parkway	Jenner to Telemetry	70.4	66	142	306
18	Alton Parkway	Irvine Center Drive to Gateway Boulevard	71.2	102	219	471
19	Alton Parkway	Sand Canyon Avenue to Hospital	73.7	105	226	488
20	Alton Parkway	Laguna Canyon Road to Jenner	70.3	65	140	302
21	Alton Parkway	Technology Drive East to Barranca Pkwy/Muirlands Blvd	71.2	101	217	468
22	Alton Parkway	Royal Oak to Valley Oak Drive	70.1	63	136	294
23	Alton Parkway	Banting to Pacifica	70.0	63	135	291
24	Alton Parkway	Barranca Pkwy/Muirlands Blvd to Jeronimo Road	70.9	97	209	450
25	Alton Parkway	Ada to Technology Drive East	70.7	93	201	432

Table 7

26	Alton Parkway	Von Karman Avenue to Jamboree Road	69.7	RW	130	279
27	Alton Parkway	Jeronimo Road to Hughes	69.9	RW	178	383
28	Alton Parkway	Hughes to Morgan	69.8	RW	174	376
29	Alton Parkway	Morgan to Toledo Way	69.1	RW	157	338
30	Alton Parkway	San Marino to Culver Drive	69.2	RW	159	343
31	Alton Parkway	Jamboree Road to Murphy Avenue	69.0	RW	156	336
32	Alton Parkway	Hospital to Laguna Canyon Road	72.0	82	177	381
33	Alton Parkway	Valley Oak Drive to Sand Canyon Avenue	71.8	80	171	369
34	Alton Parkway	Murphy Avenue to Harvard Avenue	68.8	RW	151	326
35	Alton Parkway	Foster to Irvine Boulevard	68.7	RW	148	319
36	Alton Parkway	Fairbanks to Foster	68.5	RW	144	311
37	Alton Parkway	Toledo Way to Berteza	68.4	RW	142	306
38	Alton Parkway	Pacifica to Meridian	71.7	77	167	359
39	Alton Parkway	Berteza to Fairbanks	68.3	RW	140	301
40	Alton Parkway	Meridian to Irvine Center Drive	68.3	RW	138	298
41	Alton Parkway	Paseo Westpark to San Marino	68.3	RW	139	298
42	Alton Parkway	Harvard Avenue to Paseo Westpark	67.7	RW	127	274
43	Astor	Lynx to Fairbanks	67.1	RW	52	111
44	Astor	Cadence to Lynx	65.9	RW	43	92
45	Bake Parkway	I-5 NB Off-Ramp to Rockfield Boulevard	76.7	281	606	1306
46	Bake Parkway	Muirlands Boulevard to Jeronimo Road	73.0	134	288	620
47	Bake Parkway	Rockfield Boulevard to Muirlands Boulevard	75.1	219	472	1017
48	Bake Parkway	Jeronimo Road to Toledo Way	72.1	116	251	540
49	Bake Parkway	Toledo Way to Cromwell	71.7	109	235	507
50	Bake Parkway	Cromwell to Irvine Boulevard	71.6	107	230	496
51	Bake Parkway	Research Drive to I-5 SB Off-Ramp	69.6	RW	171	369
52	Bake Parkway	Irvine Center Drive to Research Drive	64.9	RW	RW	178
53	Bake Parkway	Lake Forest Drive to Irvine Center Drive	63.4	RW	RW	141
54	Banting	Alton Parkway to Barranca Parkway	60.3	RW	RW	65
55	Barranca Parkway	Pacifica to Irvine Center Drive	73.3	104	224	482
56	Barranca Parkway	Banting to Pacifica	72.8	96	207	446

Table 7

57	Barranca Parkway	I-5 HOV Ramp to Technology Drive West	73.0	99	213	459
58	Barranca Parkway	Technology Drive West to Ada	72.7	94	203	438
59	Barranca Parkway	Irvine Center Drive to I-5 HOV Ramp	72.6	93	201	433
60	Barranca Parkway	Culver Drive to West Yale Loop	72.3	89	191	411
61	Barranca Parkway	East Yale Loop to Jeffrey Road	72.2	88	189	407
62	Barranca Parkway	West Yale Loop to Lake Road	72.1	86	185	398
63	Barranca Parkway	Ada to Alton Parkway	72.1	87	187	403
64	Barranca Parkway	Lake Road to Creek Road	71.8	82	177	382
65	Barranca Parkway	Red Hill Avenue to Armstrong Avenue	74.7	207	447	962
66	Barranca Parkway	Discovery/Herchel to Banting	71.6	80	173	373
67	Barranca Parkway	Lyon to East Yale Loop	71.6	79	171	369
68	Barranca Parkway	Creek Road to Lyon	71.5	79	169	365
69	Barranca Parkway	Von Karman Avenue to Jamboree Road	72.8	123	264	569
70	Barranca Parkway	Sand Canyon Avenue to Laguna Canyon Road	71.1	74	160	344
71	Barranca Parkway	Armstrong Avenue to Von Karman Avenue	72.5	117	251	541
72	Barranca Parkway	Valley Oak Drive to Sand Canyon Avenue	70.8	70	152	326
73	Barranca Parkway	Jamboree Road to Construction Circle	71.2	100	216	466
74	Barranca Parkway	Santa Rosa to Culver Drive	71.0	98	211	454
75	Barranca Parkway	FedEx to Discovery/Herchel	70.5	68	146	314
76	Barranca Parkway	Jeffrey Road to Valley Oak Drive	70.4	66	143	308
77	Barranca Parkway	Laguna Canyon Road to FedEx	70.4	66	143	308
78	Barranca Parkway	Pullman Street to Red Hill Avenue	73.7	175	378	814
79	Barranca Parkway	Construction Circle to Fire Station	70.6	92	199	429
80	Barranca Parkway	Fire Station to Harvard Avenue	70.6	92	199	429
81	Barranca Parkway	Paseo Westpark to Santa Rosa	70.6	92	197	425
82	Barranca Parkway	Harvard Avenue to Paseo Westpark	70.2	87	187	403
83	Bay Tree	Trabuco Road to Roosevelt	57.1	RW	RW	RW
84	Beacon	Ridge Valley to Benchmark	59.7	RW	RW	RW
85	Benchmark (LN Street)	Ridge Valley (O Street) to Bosque	56.5	RW	RW	RW
86	Bison Avenue	SR-73 NB Off-Ramp to California Avenue	69.6	RW	127	274
87	Bonita Canyon Drive	MacArthur Boulevard to SR-73	70.3	78	169	364

Table 7

88	Bonita Canyon Drive	Turtle Ridge to Shady Canyon Drive	68.6	RW	130	280
89	Bonita Canyon Drive	Newport Coast Drive to Turtle Ridge	68.2	RW	123	265
90	Bonita Canyon Drive	SR-73 NB Off-Ramp to Newport Coast Drive	68.0	RW	119	257
91	Bosque	Cadence to Great Park Boulevard	65.2	RW	39	83
92	Bosque	Irvine Boulevard to Benchmark (LN Street)	63.6	RW	RW	65
93	Bosque	Benchmark to Cadence	63.2	RW	RW	61
94	Bosque	Great Park Boulevard to Beacon	56.8	RW	RW	RW
95	Bosque	Beacon to S 5th Street	56.2	RW	RW	RW
96	Bryan Avenue	Jamboree Road to Market Place	69.0	RW	116	250
97	Bryan Avenue	Market Place to El Camino Real	68.9	RW	114	246
98	Bryan Avenue	Rubicon to Culver Drive	68.8	RW	113	242
99	Bryan Avenue	El Camino Real to Rubicon	68.8	RW	112	241
100	Bryan Avenue	Eastwood to Jeffrey Road	67.1	RW	87	187
101	Bryan Avenue	Westwood to Yale Avenue	66.8	RW	82	176
102	Bryan Avenue	Culver Drive to Westwood	66.7	RW	81	174
103	Bryan Avenue	Yale Avenue to Eastwood	66.7	RW	81	174
104	Cadence	Pusan to Chinon	65.6	RW	41	89
105	Cadence	Bosque to Pusan	65.3	RW	39	85
106	Cadence	Ridge Valley (O Street) to Bosque	64.0	RW	RW	70
107	Cadence	Chinon to Merit	62.3	RW	RW	54
108	Cadence	Merit to Astor	59.4	RW	RW	RW
109	California Avenue	University Drive to Academy Way	66.2	RW	76	163
110	California Avenue	Campus Drive to Harvard Avenue	64.2	RW	RW	119
111	California Avenue	Theory to Bison Avenue	63.9	RW	RW	113
112	Campus Drive	Carlson Avenue to University Drive	73.2	82	177	382
113	Campus Drive	University Drive to Bridge Road	71.8	83	178	384
114	Campus Drive	Jamboree Road to Carlson Avenue	71.5	79	170	366
115	Campus Drive	Stanford Court to Berkeley Avenue	71.1	74	159	343
116	Campus Drive	California Avenue to Culver Drive	70.9	72	155	334
117	Campus Drive	Berkeley Avenue to Cornell	70.0	RW	135	290
118	Campus Drive	Martin to Von Karman Avenue	69.1	RW	117	251



Table 7

119	Campus Drive	Culver Drive to Paseo Montoya (Turtle Rock Drive)	68.7	RW	111	239
120	Campus Drive	Von Karman Avenue to Teller Avenue	68.4	RW	105	227
121	Campus Drive	MacArthur Boulevard to Martin	68.2	RW	103	221
122	Campus Drive	Teller Avenue to Jamboree Road	67.5	RW	92	198
123	Carlson Avenue	Michelson Drive to Campus Drive	67.9	RW	98	210
124	Chinon	Irvine Boulevard to Cadence	58.8	RW	RW	RW
125	Creek Road	Alton Parkway to Barranca Parkway	56.3	RW	RW	RW
126	Culver Drive	Michelson Drive to I-405 SB Off-Ramp	74.0	154	332	715
127	Culver Drive	I-405 SB Off-Ramp to I-405 NB Off Ramp	73.9	152	327	705
128	Culver Drive	I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)	73.9	154	331	713
129	Culver Drive	Scottsdale Drive to I-5 SB Off- Ramp	73.8	151	325	701
130	Culver Drive	I-405 NB Off-Ramp to San Leandro	73.6	146	314	677
131	Culver Drive	San Leandro to Main Street	73.3	140	301	649
132	Culver Drive	Harvard Avenue to University Drive	73.4	141	303	652
133	Culver Drive	Trabuco Road to Farwell Avenue	74.2	153	329	709
134	Culver Drive	Alton Parkway to Barranca Parkway	73.2	137	296	637
135	Culver Drive	Main Street to Alton Parkway	73.1	134	289	623
136	Culver Drive	Warner Avenue to Irvine Center Drive	73.0	133	286	615
137	Culver Drive	Walnut Avenue to Scottsdale Dive	72.9	130	281	605
138	Culver Drive	Barranca Parkway to Warner Avenue	72.8	130	280	604
139	Culver Drive	Shady Canyon Drive to Palo Verde	72.0	84	182	392
140	Culver Drive	Deerfield Avenue to Walnut Avenue	72.5	124	267	574
141	Culver Drive	Sandburg Way to Michelson Drive	72.5	124	267	575
142	Culver Drive	Irvine Center Drive to Deerfield Avenue	72.4	122	262	565
143	Culver Drive	Palo Verde to Campus Drive	71.6	80	172	370
144	Culver Drive	University Drive to Sandburg Way	72.2	118	253	546
145	Culver Drive	Farwell Avenue to Bryan Avenue	73.2	130	281	605
146	Culver Drive	Campus Drive to High School	72.1	116	249	536
147	Culver Drive	High School to Harvard Avenue	72.0	114	246	530
148	Culver Drive	Bryan Avenue to Florence	71.8	110	238	512
149	Culver Drive	Portola Parkway to Settlers	71.2	75	162	348

Table 7

150	Culver Drive	Florence to Irvine Boulevard	71.7	109	234	504
151	Culver Drive	Irvine Boulevard to Viewpark	70.5	91	196	422
152	Culver Drive	Viewpark to Meadowood	70.4	89	191	413
153	Culver Drive	Settlers to Furrow	68.5	RW	107	230
154	Culver Drive	Meadowood to Portola Parkway	69.0	RW	154	332
155	Discovery Drive	Irvine Center Drive to Laguna Canyon Road	65.5	RW	68	146
156	Discovery Drive	Waterworks Way to Irvine Center Drive	63.6	RW	RW	109
157	East Yale Loop	Alton Parkway to Witherspoon	65.6	RW	68	147
158	East Yale Loop	Osborn Street to Barranca Parkway	65.4	RW	66	143
159	East Yale Loop	Yale Avenue to Springbrook South	65.0	RW	63	135
160	East Yale Loop	Springbrook North to Alton Parkway	63.6	RW	RW	108
161	East Yale Loop	Woodspring to Yale Avenue	62.8	RW	RW	97
162	East Yale Loop	Barranca Parkway to Eastshore	62.4	RW	RW	90
163	Eastwood	Bryan Avenue to Monticello	60.8	RW	RW	43
164	Eastwood	Columbus to Bryan Avenue	58.8	RW	RW	RW
165	El Camino Real	Jamboree Road to Alliance (SR-261 Bridge)	67.1	RW	87	187
166	El Camino Real North	El Camino Real to Bryan Avenue	62.4	RW	RW	91
167	Fairbanks	Alton Parkway to Astor	69.8	RW	79	170
168	Fairbanks	Irvine Boulevard to Alton Parkway	66.9	RW	50	108
169	Fairchild Road	MacArthur Boulevard to Jamboree Road	64.0	RW	RW	116
170	Gateway Boulevard	Alton Parkway to Irvine Center Drive	63.5	RW	RW	108
171	Gateway Boulevard	Spectrum Center Drive (Fortune Drive) to Alton Parkway	62.3	RW	RW	88
172	Gateway Boulevard	Irvine Center Drive to Meridian	59.2	RW	RW	RW
173	Great Park Boulevard	Sand Canyon to Ridge Valley	74.6	121	260	561
174	Great Park Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	70.3	66	142	305
175	Great Park Boulevard (EB)	Bosque to Skyhawk	69.0	RW	69	150
176	Great Park Boulevard (WB)	Bosque to Skyhawk	68.4	RW	63	136
177	Harvard Avenue	University Drive to Michelson Drive	72.0	51	110	237
178	Harvard Avenue	Michelson Drive to Coronado	70.4	67	144	311
179	Harvard Avenue	San Marino to Alton Parkway	70.2	64	138	298
180	Harvard Avenue	Coronado to Main Street	70.1	64	137	296

Table 7

181	Harvard Avenue	San Carlo to San Marino	70.1	63	136	293
182	Harvard Avenue	Main Street to San Carlo	70.0	RW	134	290
183	Harvard Avenue	Alton Parkway to San Leon	68.8	RW	111	239
184	Harvard Avenue	San Juan to Barranca Parkway	68.8	RW	111	239
185	Harvard Avenue	San Leon to San Juan	68.6	RW	108	233
186	Harvard Avenue	Irvine Center Drive to Deerfield Avenue	67.5	RW	92	198
187	Harvard Avenue	Deerfield Avenue to Poplar Street	67.4	RW	91	195
188	Harvard Avenue	Barranca Parkway to Warner Avenue	67.9	RW	97	209
189	Harvard Avenue	Bridge Road to University Drive	67.9	RW	97	209
190	Harvard Avenue	Paseo Westpark to Irvine Center Drive	67.8	RW	97	208
191	Harvard Avenue	Poplar Street to Walnut Avenue	68.8	RW	90	194
192	Harvard Avenue	California Avenue to Berkeley Avenue	67.4	RW	90	193
193	Harvard Avenue	Culver Drive to California Avenue	67.3	RW	89	191
194	Harvard Avenue	Berkeley to Bridge Road	67.2	RW	87	187
195	Harvard Avenue	Warner Avenue to Paseo Westpark	66.7	RW	82	176
196	Hicks Canyon Drive	Delamesa to Yale Avenue	58.2	RW	RW	RW
197	Hornet (5th St)	Ridge Valley (O Street) to Bosque	57.5	RW	RW	RW
198	Hubble	Irvine Center Drive to Bunsen	55.9	RW	RW	RW
199	Irvine Boulevard	SR-133 NB Off- Ramp to Ridge Valley (O Street)	72.2	118	255	549
200	Irvine Boulevard	SR-133 SB Off-Ramp to SR-133 NB Off-Ramp	72.2	117	253	545
201	Irvine Boulevard	Sand Canyon to SR-133 SB Off-Ramp	73.0	127	273	587
202	Irvine Boulevard	Merit to Alton	71.6	108	232	500
203	Irvine Boulevard	Journey to Sand Canyon Avenue	71.6	107	230	496
204	Irvine Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	71.1	100	215	464
205	Irvine Boulevard	Pusan Way to Chinon (B Street)	71.0	98	211	455
206	Irvine Boulevard	Palo Lado to Yale Avenue	71.2	102	219	471
207	Irvine Boulevard	Culver Drive to Palo Lado	71.2	101	217	468
208	Irvine Boulevard	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	71.1	99	213	459
209	Irvine Boulevard	Old Myford Road to Market Place	71.1	99	214	461
210	Irvine Boulevard	Bosque (LY Street) to Modjeska	71.1	100	216	465
211	Irvine Boulevard	Jamboree Road to Old Myford Road	71.0	98	211	455

Table 7

212	Irvine Boulevard	Market Place to SR-261 SB Off-Ramp	71.0	98	210	453
213	Irvine Boulevard	Jeffrey Road to Groveland	70.9	96	208	448
214	Irvine Boulevard	Bake Parkway to Lake Forest Drive	70.5	91	196	423
215	Irvine Boulevard	Independence Way (The Groves)/The Groves to Jeffrey Road	70.7	94	202	434
216	Irvine Boulevard	Chinon (B Street) to Merit	70.5	90	194	418
217	Irvine Boulevard	SR-261 NB Off-Ramp to Central Park	70.6	92	198	427
218	Irvine Boulevard	Pueblo Norte to Independence Way (The Groves)/ Parkwood	70.5	90	194	419
219	Irvine Boulevard	Yale Avenue to Pueblo Norte	70.4	90	194	417
220	Irvine Boulevard	Modjeska to Pusan Way	70.2	87	188	404
221	Irvine Boulevard	Central Park Avenue to Culver Drive	70.0	84	180	388
222	Irvine Boulevard	Parker to Bake Parkway	69.6	RW	171	368
223	Irvine Boulevard	Alton Parkway to Fairbanks	68.6	RW	146	315
224	Irvine Center Drive	Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp	72.7	121	260	560
225	Irvine Center Drive	Orange Tree to Valley Oak Drive	72.0	114	246	530
226	Irvine Center Drive	I-405 SB Off-Ramp to Research	72.2	112	241	520
227	Irvine Center Drive	Irvine Valley College to Orange Tree	71.9	113	243	523
228	Irvine Center Drive	Fontaine Avenue to Jeffrey Road	71.7	108	234	503
229	Irvine Center Drive	Culver Drive to Deerwood	71.6	108	232	500
230	Irvine Center Drive	Deerwood to Yale Avenue	71.6	107	231	497
231	Irvine Center Drive	Yale Avenue to Fontaine Avenue	71.6	108	232	500
232	Irvine Center Drive	Jeffrey Road to Irvine Valley College	71.5	106	228	492
233	Irvine Center Drive	Alton Parkway to Spectrum	71.3	103	221	476
234	Irvine Center Drive	Spectrum to Pacifica	71.3	102	219	472
235	Irvine Center Drive	Hearthstone to Culver Drive	71.0	98	211	454
236	Irvine Center Drive	Charter to Barranca Parkway	70.9	97	208	449
237	Irvine Center Drive	Jamboree Road to Harvard Avenue	70.6	92	197	425
238	Irvine Center Drive	Pacifica to Entertainment (Enterprise/Fortune)	70.7	93	201	433
239	Irvine Center Drive	Valley Oak Drive to Sand Canyon Avenue	70.7	93	201	433
240	Irvine Center Drive	Harvard Avenue to Hearthstone	70.3	88	191	410
241	Irvine Center Drive	Research to Hubble	69.8	RW	175	376
242	Irvine Center Drive	Barranca Parkway to Gateway Boulevard	70.1	85	184	396

Table 7

243	Irvine Center Drive	Bake Parkway to Muller	69.7	RW	173	373
244	Irvine Center Drive	Discovery to Charter	70.2	87	186	402
245	Irvine Center Drive	Hubble to Bake Parkway	69.5	RW	167	361
246	Irvine Center Drive	Muller to Tesla	69.3	RW	162	350
247	Irvine Center Drive	Sand Canyon Avenue to Odyssey	69.4	RW	165	355
248	Irvine Center Drive	Tesla to Scientific Way	68.9	RW	153	329
249	Irvine Center Drive	Scientific Way to Lake Forest Drive	68.7	RW	148	319
250	Irvine Center Drive	Gateway Boulevard to Alton Parkway	68.8	RW	151	325
251	Irvine Center Drive	Laguna Canyon Road to Discovery	68.8	RW	151	326
252	Irvine Center Drive	Odyssey to Laguna Canyon Road	68.8	RW	151	326
253	Irvine Center Drive (Edinger)	Redhill Avenue to Jamboree Road	71.0	98	211	454
254	Jamboree Road	I-5 SB Off-Ramp to I-5 NB Off-Ramp	74.5	168	362	780
255	Jamboree Road	I-405 SB Off-Ramp to I-405 NB Off Ramp	75.6	190	409	881
256	Jamboree Road	Walnut Avenue to Michelle Drive	73.9	153	329	709
257	Jamboree Road	I-405 NB Off-Ramp to Main Street	77.0	293	631	1359
258	Jamboree Road	Michelle Drive to I-5 SB Off-Ramp	73.6	146	314	677
259	Jamboree Road	Main Street to Kelvin Avenue	76.4	266	573	1235
260	Jamboree Road	Michelson Drive to I-405 SB Off-Ramp	74.4	216	466	1003
261	Jamboree Road	Kelvin Avenue to McGaw Avenue	76.0	253	545	1174
262	Jamboree Road	McGaw Avenue to Alton Parkway	76.0	251	540	1164
263	Jamboree Road	Birch Street to Campus Drive	73.0	134	288	621
264	Jamboree Road	Dupont Drive to Michelson Drive	73.9	146	316	680
265	Jamboree Road	Alton Parkway to Beckman	75.6	236	508	1094
266	Jamboree Road	Fairchild Road to Birch Street	73.5	138	297	640
267	Jamboree Road	Beckman to Barranca Parkway	75.3	224	483	1040
268	Jamboree Road	I-5 NB Off-Ramp to El Camino Real	75.1	218	470	1013
269	Jamboree Road	Campus Drive to Dupont Drive	73.2	130	280	603
270	Jamboree Road	El Camino Real to West Drive	75.0	214	461	993
271	Jamboree Road	West Drive to Bryan Avenue	74.9	214	461	992
272	Jamboree Road	Bryan Avenue to Irvine Boulevard	74.6	204	438	945
273	Jamboree Road	Koll Center to Fairchild Road	72.8	124	266	574

Table 7

274	Jamboree Road	MacArthur Boulevard to Koll Center	72.8	123	265	571
275	Jamboree Road	Irvine Boulevard to Portola Parkway	70.7	94	202	434
276	Jamboree Road	Warner Avenue to Edinger Avenue	79.2	261	563	1212
277	Jamboree Road	Barranca Parkway to Warner Avenue	78.3	230	495	1066
278	Jamboree Road	Edinger Avenue to Walnut Avenue	78.0	218	469	1010
279	Jeffrey Road	Walnut Avenue to I-5 NB Off-Ramp	71.4	104	224	483
280	Jeffrey Road	I-5 NB Off-Ramp to Roosevelt	72.3	114	245	529
281	Jeffrey Road	Poplar (Meadows) to Walnut Avenue	70.9	97	209	450
282	Jeffrey Road	Alton Parkway to Barranca Parkway	70.9	97	209	450
283	Jeffrey Road	Irvine Center Drive to Poplar (Meadows)	70.7	94	203	437
284	Jeffrey Road	I-405 NB Off-Ramp to Quail Creek	70.9	97	209	450
285	Jeffrey Road	Barranca Parkway to Irvine Valley College	70.7	93	201	434
286	Jeffrey Road	Quail Creek to Alton Parkway	70.8	95	204	439
287	Jeffrey Road	Irvine Valley College to Irvine Center Drive	70.5	90	194	418
288	Jeffrey Road	Trabuco Road to Hideaway	69.6	RW	171	369
289	Jeffrey Road	Hideaway to Bryan Avenue	69.6	RW	171	369
290	Jeffrey Road	Roosevelt to Grove	70.4	85	184	396
291	Jeffrey Road	Grove to Trabuco Road	70.2	82	177	382
292	Jeffrey Road	Bryan Avenue to Irvine Boulevard	68.5	RW	143	309
293	Jeffrey Road	Encore to Portola Parkway	65.8	RW	94	203
294	Jeffrey Road	Irvine Boulevard to Encore	65.5	RW	90	195
295	Jeronimo Road	Goodyear to Bake Parkway	64.6	RW	RW	127
296	Jeronimo Road	Alton Parkway to Goodyear	64.3	RW	RW	121
297	Laguna Canyon Road	Old Laguna Canyon Road to Lake Forest Drive	73.3	139	299	645
298	Laguna Canyon Road	Laguna Canyon Freeway to Quail Hill Parkway	69.9	RW	133	287
299	Laguna Canyon Road	Discovery to Sand Canyon Avenue	69.5	RW	125	270
300	Laguna Canyon Road	I-405 Overcrossing to Pasteur	67.9	RW	79	169
301	Laguna Canyon Road	Irvine Center Drive to Discovery	69.0	RW	115	249
302	Laguna Canyon Road	Quail Hill Parkway to I-405 Overcrossing	67.9	RW	79	169
303	Laguna Canyon Road	Pasteur to Alton Parkway	67.0	RW	85	184
304	Laguna Canyon Road	Waterworks to Irvine Center Drive	67.5	RW	92	198

Table 7

305	Laguna Canyon Road	Alton Parkway to Barranca Parkway	66.3	RW	77	166
306	Laguna Canyon Road	Barranca Parkway to Waterworks	66.2	RW	75	162
307	Lake Forest Drive	Hidden Canyon to Laguna Canyon Road	69.4	RW	122	264
308	Lake Forest Drive	Bake Parkway to Hidden Canyon (Romano)	69.3	RW	122	262
309	Lake Forest Drive	Tesla to Bake Parkway	66.4	RW	104	225
310	Lake Road	Alton Parkway to Barranca Parkway	59.2	RW	RW	RW
311	Lynx	Irvine Boulevard to Astor	53.2	RW	RW	RW
312	MacArthur Boulevard	I-405 SB Off-Ramp to Michelson Drive	76.7	282	607	1308
313	MacArthur Boulevard	Main Street to I-405 NB Off-Ramp	76.7	278	599	1291
314	MacArthur Boulevard	I-405 NB Off-Ramp and I-405 SB Off-Ramp	76.6	276	594	1279
315	MacArthur Boulevard	Jamboree Road to Fairchild Road	69.9	RW	178	382
316	MacArthur Boulevard	Fairchild Road to University Drive	69.8	RW	176	380
317	MacArthur Boulevard	Fitch to Red Hill Avenue	70.5	87	187	403
318	MacArthur Boulevard	Michelson Drive to Douglas	72.2	140	302	650
319	MacArthur Boulevard	Douglas to Campus Drive	72.1	139	299	644
320	MacArthur Boulevard	Skypark to Main Street	69.5	RW	159	343
321	MacArthur Boulevard	Redhill Avenue to Skypark	68.3	RW	140	302
322	MacArthur Boulevard	Birch Street to Jamboree Road	67.1	RW	115	248
323	MacArthur Boulevard	Campus Drive to Birch Street	69.3	RW	194	418
324	Main Street	Gillette Avenue to Von Karman Avenue	70.9	92	197	425
325	Main Street	MacArthur Boulevard to Mercantile	70.3	84	180	388
326	Main Street	Executive Park to MacArthur Boulevard	68.4	RW	142	307
327	Main Street	Von Karman Avenue to Cartwright	68.5	RW	143	308
328	Main Street	McDermott to Red Hill Avenue	68.1	RW	135	291
329	Main Street	Red Hill Avenue to Executive Circle	68.0	RW	133	287
330	Main Street	Jamboree Road to Union	67.8	RW	130	280
331	Main Street	Culver Drive to West Yale Loop	67.2	RW	87	188
332	Main Street	Siglo to Jamboree Road	67.7	RW	128	275
333	Main Street	Veneto to Harvard Avenue	67.5	RW	124	268
334	Main Street	Paseo Westpark to Culver Drive	66.3	RW	77	165
335	Main Street	Harvard Avenue to San Mateo	66.3	RW	76	164

Table 7

336	Marine Way	Sand Canyon Avenue to Ridge Valley (O Street)	72.3	71	154	332
337	Marine Way	Alton Parkway to Bake Parkway	69.4	RW	124	266
338	Marine Way	Lynx to Barranca Parkway	69.3	RW	121	261
339	Marine Way	County Access to Treble	68.5	RW	106	229
340	Marine Way	Ridge Valley (O Street) to Skyhawk	68.3	RW	104	224
341	Marine Way	Skyhawk to County Access	67.4	RW	90	194
342	Marine Way	Barranca Parkway to Alton Parkway	66.8	RW	82	177
343	Marine Way	Treble to Lynx	66.5	RW	79	170
344	McGaw Avenue	Von Karman Avenue to Jamboree Road	64.5	RW	RW	124
345	McGaw Avenue	Red Hill Avenue to Von Karman Avenue	64.3	RW	RW	122
346	McGaw Avenue	Daimler to Red Hill Avenue	62.4	RW	RW	91
347	McGaw Avenue	Jamboree Road to Murphy Avenue	59.6	RW	RW	RW
348	Meadowood	Culver Drive to Canyonwood	59.8	RW	RW	RW
349	Meridian	Spectrum to Alton Parkway	55.6	RW	RW	RW
350	Meridian	Alton Parkway to Gateway Boulevard	54.7	RW	RW	RW
351	Merit	Irvine Boulevard to Cadence	58.0	RW	RW	RW
352	Michelson Drive	Riparian to Harvard Avenue	68.3	RW	104	223
353	Michelson Drive	Almond Tree Lane to Yale Avenue	67.2	RW	52	113
354	Michelson Drive	Von Karman Avenue to Obsidian	68.2	RW	101	218
355	Michelson Drive	Parkside to Culver Drive	67.8	RW	96	206
356	Michelson Drive	Gillman to Seton/Sandburg Way	66.9	RW	50	108
357	Michelson Drive	Carlson to Prince	67.3	RW	107	231
358	Michelson Drive	MacArthur Boulevard to Dupont Drive	67.5	RW	92	197
359	Michelson Drive	Harvard Avenue to Parkside	66.8	RW	83	178
360	Michelson Drive	Bixby to Von Karman Avenue	66.8	RW	83	179
361	Michelson Drive	Jamboree Road to Carlson	69.6	RW	122	263
362	Michelson Drive	Teller to Jamboree Road	69.6	RW	122	262
363	Michelson Drive	Jordan East to University Drive	67.1	RW	41	89
364	Michelson Drive	Culver Drive to Angell	66.3	RW	49	105
365	Modjeska (A Street)	Portola Springs to Irvine Boulevard	71.7	39	84	181
366	Modjeska (A Street)	South of Irvine Boulevard	61.1	RW	RW	44



Table 7

367	Muirlands Boulevard	Bake Parkway to City Limits	67.2	RW	88	189
368	Muirlands Boulevard	Alton Parkway to Sterling	66.3	RW	76	165
369	Muirlands Boulevard	Wrigley to Bake Parkway	66.3	RW	76	165
370	Newport Coast Drive	SR-73 NB Off-Ramp to Turtle Ridge	66.6	RW	80	173
371	Newport Coast Drive	Turtle Crest to Bonita Canyon Drive	65.1	RW	63	137
372	Nightmist	Sand Canyon Avenue to Tulip (Road C)	61.8	RW	RW	82
373	Northwood	Yale Avenue to Savannah	62.5	RW	RW	55
374	Northwood	Goldrush to Yale Avenue	61.5	RW	RW	47
375	Oak Canyon Drive	Valley Oak Drive to Sand Canyon Avenue	69.7	RW	77	165
376	Pacifica	Gateway to Barranca Parkway	65.3	RW	65	140
377	Pacifica	Alton Parkway to Gateway	64.1	RW	RW	117
378	Pacifica	Irvine Center Drive to Fortune Drive (Spectrum Center Drive)	62.7	RW	RW	94
379	Pacifica	Meridian to Alton Parkway	60.9	RW	RW	71
380	Park Place	Christamon South to Yale Avenue	57.0	RW	RW	RW
381	Portola Parkway	Bee Canyon Access Road to Sand Canyon Avenue	71.7	81	175	377
382	Portola Parkway	Jeffrey Road to Bee Canyon Access Road	71.7	81	175	376
383	Portola Parkway	Arrowhead to Ridge Valley Parkway	71.4	78	168	361
384	Portola Parkway	Sand Canyon Avenue to Arrowhead	71.1	73	158	341
385	Portola Parkway	Portola Springs to SR-241 SB Off-Ramp	70.1	63	136	293
386	Portola Parkway	Gatepark to Culver Drive	70.7	94	203	437
387	Portola Parkway	ETC-6 (SR-261) NB Off-Ramp to Gatepark	70.7	93	201	433
388	Portola Parkway	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.6	91	197	424
389	Portola Parkway	Jamboree Road to Bellevue	70.5	91	195	421
390	Portola Parkway	Bellevue to ETC-6 (SR-261) SB Off-Ramp	70.5	90	194	418
391	Portola Parkway	Yale Avenue to Jeffrey Road	70.2	87	188	405
392	Portola Parkway	Culver Drive to Yale Avenue	69.7	RW	172	371
393	Portola Parkway	Silverado to Portola Springs	68.6	RW	108	233
394	Pusan	Irvine Boulevard to Cadence	56.2	RW	RW	RW
395	Quail Hill Parkway	Shady Canyon Drive to Passage	67.5	RW	91	197
396	Quail Hill Parkway	East Knollcrest to Laguna Canyon Road	65.4	RW	67	143
397	Quassar Drive (Spectrum)	Irvine Center Drive to Spectrum Center Drive (Fortune)	54.9	RW	RW	RW

Table 7

398	Red Hill Avenue	MacArthur Boulevard to McGaw Avenue	71.6	107	230	495
399	Red Hill Avenue	I-405 Over Crossing to Main Street	70.2	65	139	300
400	Red Hill Avenue	Alton Parkway to Deere Avenue	70.1	85	183	394
401	Red Hill Avenue	McGaw Avenue to Alton Parkway	69.9	RW	180	387
402	Red Hill Avenue	Deere Avenue to Barranca Parkway	69.8	RW	175	377
403	Red Hill Avenue	Skypark East to MacArthur Boulevard	71.4	74	160	345
404	Red Hill Avenue	Main Street to Skypark East	70.8	67	145	313
405	Research Drive	Hubble to Bake Parkway	69.6	RW	127	273
406	Research Drive	Scientific to Lake Forest Drive	67.4	RW	90	194
407	Research Drive	Bake Parkway to Muller	66.7	RW	81	173
408	Research Drive	Irvine Center Drive to Bunsen	65.7	RW	70	150
409	Ridge Valley (O Street)	Irvine Boulevard to Trabuco Road (Great Park Boulevard)	67.3	RW	89	192
410	Ridge Valley (O Street)	Portola Parkway to Irvine Boulevard	66.4	RW	77	166
411	Ridge Valley (O Street)	Trabuco Road (Great Park Boulevard) to Marine Way	66.0	RW	73	157
412	Ridge Valley (O Street)	Ranchland to Portola Parkway	58.1	RW	RW	RW
413	Ridgeline Drive	Concordia East to University Drive	68.8	RW	71	154
414	Ridgeline Drive	Turtle Rock Drive to San Simeon	68.5	RW	68	146
415	Rockfield Avenue	Whatney to McLaren	67.7	RW	95	204
416	Rockfield Avenue	Bake Parkway to Whatney	64.3	RW	RW	121
417	Rockfield Avenue	Thomas to Bake Parkway	63.1	RW	RW	101
418	Roosevelt	Jeffrey Road to Vision	66.6	RW	80	172
419	Roosevelt	Yale Avenue to Van Buren	68.3	RW	50	107
420	Roosevelt	Vision to Bay Tree	66.3	RW	77	166
421	Roosevelt	Nimitz to Jeffrey Road	65.9	RW	71	154
422	Roosevelt	Tulip (Road C) to Sand Canyon Avenue	65.6	RW	69	148
423	Royal Oak	Alton Parkway to Eaglecreek	64.0	RW	RW	56
424	Sand Canyon Avenue	Oak Canyon Drive to Burt Road	72.2	117	252	543
425	Sand Canyon Avenue	Irvine Center Drive to Oak Canyon Drive	72.0	113	244	526
426	Sand Canyon Avenue	I-405 NB Off-Ramp to Alton Parkway	74.7	123	264	569
427	Sand Canyon Avenue	Burt Road to I-5 SB Off-Ramp	72.7	122	263	566
428	Sand Canyon Avenue	Marine to I-5 NB Off-Ramp	74.6	204	440	947

Table 7

429	Sand Canyon Avenue	Trabuco Road to Towngate	71.0	98	211	454
430	Sand Canyon Avenue	Barranca Parkway to Waterworks	70.9	97	209	450
431	Sand Canyon Avenue	I-5 SB Off-Ramp to Marine	73.9	181	389	838
432	Sand Canyon Avenue	Hospital to Barranca Parkway	70.8	95	205	441
433	Sand Canyon Avenue	Nightmist to Roosevelt	73.5	172	371	799
434	Sand Canyon Avenue	I-405 SB Off-Ramp to I-405 NB Off-Ramp	73.6	104	224	482
435	Sand Canyon Avenue	I-5 NB Off-Ramp to Nightmist	73.5	171	368	793
436	Sand Canyon Avenue	Towngate to Irvine Boulevard	70.3	89	191	411
437	Sand Canyon Avenue	Waterworks to Irvine Center Drive	70.2	87	187	404
438	Sand Canyon Avenue	Irvine Boulevard to Portola Parkway	69.2	RW	118	255
439	Sand Canyon Avenue	Roosevelt to Trabuco Road	72.8	153	331	712
440	Sand Canyon Avenue	Alton Parkway to Hospital	70.8	90	195	420
441	Sand Canyon/Shady Canyon	Quail Hill Parkway to I-405 SB Ramps	71.8	79	170	366
442	Scientific Way	Irvine Center Drive to Wald	55.0	RW	RW	RW
443	Shady Canyon Drive	Culver Drive/Bonita Canyon Drive to Cloverfield	69.3	RW	73	156
444	Shady Canyon Drive	Bommer Canyon Road to Sunnyhill	67.7	RW	76	163
445	Skyhawk	Great Park Boulevard to Marine Way	59.6	13	27	58
446	Southwood	Yale Avenue to Colt	60.6	9	19	41
447	Southwood	Challenger to Yale Avenue	60.4	9	18	40
448	Spectrum Center Drive (Fortune Drive)	Pacifica to Quassar Drive (Spectrum )	62.0	18	39	85
449	Spectrum Center Drive (FortuneDrive)	Quassar Drive (Spectrum ) to Gatewayb	62.5	20	42	91
450	Sunnyhill	Shady Canyon Drive to Turtle Rock Drive	57.7	9	20	44
451	Technology Drive	Barranca Parkway to Alton Parkway	70.8	71	152	327
452	Technology Drive	Old Laguna Canyon Road to I-5/SR-133 Undercrossing	69.6	59	126	272
453	Technology Drive	I-5/SR-133 to Barranca Parkway	69.4	57	123	265
454	Technology Drive	Ada to Alton Parkway	63.7	24	51	110
455	Toledo Way	Bake Parkway to City Limits	65.6	32	69	148
456	Toledo Way	Goodyear to Bake Parkway	64.7	28	60	129
457	Toledo Way	Alton Parkway to Parker	64.5	27	57	124
458	Trabuco Road	Keystone to Sand Canyon Avenue	67.2	41	88	189
459	Trabuco Road	Jeffrey Road to Keystone	67.1	40	86	185

Table 7

460	Trabuco Road	Culver Drive to I-5 NB Off-Ramp	66.8	38	83	178
461	Trabuco Road	Monroe to Yale Avenue	66.8	38	83	178
462	Trabuco Road	I-5 NB Off-Ramp to Monroe	66.7	38	81	175
463	Trabuco Road	Yale Avenue to Remington	66.4	36	78	167
464	Trabuco Road	Remington to Jeffrey Road	66.1	35	74	160
465	Turtle Ridge Drive	Federation Way to Bonita Canyon	68.7	51	111	239
466	Turtle Rock Drive	Ridgeline to Willowleaf	67.9	27	58	125
467	Turtle Rock Drive	Silkwood to Sunnyhill	67.8	27	58	124
468	Turtle Rock Drive	Canyon Park to Ridgeline	67.1	24	52	111
469	Turtle Rock Drive	Sunnyhill to Southernwood	64.0	15	32	70
470	Turtle Rock Drive	Campus Drive to Hillgate	64.1	25	55	118
471	Turtle Rock Drive	Paseo Segovia to Campus Drive	65.5	20	43	92
472	University Drive	Golden Glow to Yale Avenue	73.0	99	214	461
473	University Drive	Ridgeline to Michelson Drive	72.6	112	240	518
474	University Drive	Culver Drive to Golden Glow	72.9	97	210	452
475	University Drive	Yale Avenue to Ridgeline	72.4	90	194	418
476	University Drive	Michelson Drive to I-405 SB Off-Ramp	72.7	128	276	594
477	University Drive	Mesa to Campus Drive	74.5	120	259	559
478	University Drive	MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	74.4	119	255	550
479	University Drive	California Avenue to Mesa	74.4	119	256	551
480	University Drive	Campus Drive to Harvard Avenue	70.7	94	202	436
481	University Drive	SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	71.6	64	137	295
482	University Drive	SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps	70.2	87	187	402
483	University Drive	San Joaquin to Culver Drive	69.8	82	177	381
484	University Drive	Harvard Avenue to San Joaquin	69.8	82	176	380
485	Valley Oak Drive	Hawkcreek to Barranca Parkway	68.1	47	101	217
486	Valley Oak Drive	Irvine Center Drive to Oak Canyon Drive	69.6	47	101	217
487	Valley Oak Drive	Barranca Parkway to Irvine Center Drive	67.1	40	87	186
488	Valley Oak Drive	Alton Parkway to Hawkcreek	64.9	29	62	133
489	Von Karman Avenue	Marriott to Morse Avenue	71.0	73	157	338
490	Von Karman Avenue	Michelson Drive to Quartz	70.9	71	153	331

Table 7

491	Von Karman Avenue	McGaw Avenue to Alton Parkway	70.8	70	152	327
492	Von Karman Avenue	Alton Parkway to Barranca Parkway	70.4	80	172	369
493	Von Karman Avenue	Main Street to Anchor	70.7	69	149	322
494	Von Karman Avenue	Anchor to McGaw Avenue	70.5	68	146	314
495	Von Karman Avenue	Morse to Main Street	70.3	65	140	303
496	Von Karman Avenue	Martin to Dupont Drive	69.6	59	127	274
497	Von Karman Avenue	Campus Drive to Martin	69.5	58	125	270
498	Von Karman Avenue	Dupont Drive to Michelson Drive	69.5	58	125	269
499	Walnut Avenue	Jeffrey Road to I-5 SB Off-Ramp	70.9	72	156	335
500	Walnut Avenue	Myford Road to Jamboree Road SB Off-Ramp	69.1	55	118	254
501	Walnut Avenue	The Mall Street to Culver Drive	68.8	52	112	242
502	Walnut Avenue	Harvard Avenue to The Mall Street	68.8	52	112	242
503	Walnut Avenue	Franciscan Street to Ravenwood Street	68.5	49	106	229
504	Walnut Avenue	Ravenwood Street to Yale Avenue	68.5	50	107	230
505	Walnut Avenue	Culver Drive to Franciscan Street	68.4	49	105	225
506	Walnut Avenue	Peters Canyon Road to Harvard Avenue	68.0	62	134	289
507	Walnut Avenue	Jamboree Road NB Off-Ramp to Peters Canyon Road	67.9	61	130	281
508	Walnut Avenue	Yale Avenue to Kazan Street	67.3	41	89	191
509	Walnut Avenue	Wisteria to Jeffrey Road	67.2	41	88	189
510	Warner Avenue	Jamboree Road SB Off-ramp to Construction North	70.2	64	139	299
511	Warner Avenue	Construction North to Harvard Avenue	68.6	51	109	235
512	Warner Avenue	Harvard Avenue to Paseo Westpark	67.1	40	86	185
513	Warner Avenue	Santa Ynez to Culver Drive	66.2	35	75	161
514	Warner Avenue	Culver Drive to West Yale Loop	65.8	33	71	153
515	West Yale Loop	Alton Parkway to Blue Lake North	64.0	25	54	116
516	West Yale Loop	Eagle Run to Main Street	63.9	24	52	113
517	West Yale Loop	Thunder Run to Yale Avenue	64.0	25	53	115
518	West Yale Loop	Main Street to Timber Run	62.8	21	45	97
519	West Yale Loop	Yale Avenue to Shorebird	63.2	22	47	102
520	West Yale Loop	Warner Avenue to Stonecreek South	62.7	20	44	94
521	West Yale Loop	Barranca Parkway to Alton Parkway	62.4	20	42	91

Table 7

522	West Yale Loop	Stonecreek North to Warner Avenue	62.6	20	43	93
523	West Yale Loop	Birdsong to Barranca Parkway	62.4	19	42	90
524	Westwood	Yorktown to Bryan Avenue	63.5	14	30	64
525	Westwood	Bryan Avenue to Leaf	61.6	10	22	48
526	Yale Avenue	Deerfield Avenue to Winvale Avenue	68.6	30	65	141
527	Yale Avenue	Hicks Canyon Drive to Meadowood	67.3	25	54	116
528	Yale Avenue	Walnut Avenue to Roosevelt	71.1	47	102	219
529	Yale Avenue	Roosevelt to Trabuco Road	67.1	40	86	185
530	Yale Avenue	Irvine Center Drive to Deerfield Avenue	66.9	39	83	179
531	Yale Avenue	West Yale Loop to Irvine Center Drive	66.5	36	78	169
532	Yale Avenue	Winvale Avenue to Karen Ann Lane	65.7	32	70	150
533	Yale Avenue	Karen Ann Lane to Walnut Avenue	65.7	32	70	150
534	Yale Avenue	Trabuco Road to Southwood	65.6	32	69	148
535	Yale Avenue	Southwood to Bryan Avenue	65.4	31	66	143
536	Yale Avenue	Northwood to Irvine Boulevard	65.1	30	64	137
537	Yale Avenue	Bryan Avenue to Monticello	65.0	29	62	134
538	Yale Avenue	Irvine Boulevard to Park Place	64.2	26	56	120
539	Yale Avenue	University Drive to Royce	63.6	19	40	87
540	Yale Court	Arborwood to Portola Parkway	60.4	9	18	40

<sup>1</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest receiving land use.

"RW" = Location of the respective noise contour falls within the right-of-way of the road.

Table 8

Table 8: Conservative Cumulative Plan Conditions Noise Contours

ID	Road	Segment	CNEL at Nearest Receiving Land Use (dBA) <sup>1</sup>	Distance to Contour from Centerline (Feet)		
				70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Ada	Barranca Parway to Marine Way	70.8	42	91	196
2	Ada	Alton Parkway to Barranca Parkway	69.3	RW	120	259
3	Alton Parkway	Enterprise to I-5 NB Off-Ramp	74.1	159	342	737
4	Alton Parkway	I-5 NB Off-Ramp to Technology Drive West	74.8	167	360	776
5	Alton Parkway	East Yale Loop to Jeffrey Road	71.8	83	179	385
6	Alton Parkway	Gateway Boulevard to Enterprise	72.0	114	246	529
7	Alton Parkway	Jeffrey Road to Royal Oak	70.9	72	155	335
8	Alton Parkway	Daimler Street to Red Hill Avenue	70.7	69	149	322
9	Alton Parkway	Culver Drive to West Yale Loop	70.7	69	150	322
10	Alton Parkway	West Yale Loop to Lake Road	70.7	70	150	323
11	Alton Parkway	Technology Drive West to Ada	72.6	120	259	558
12	Alton Parkway	Creek Road to East Yale Loop	70.7	69	149	321
13	Alton Parkway	Red Hill Avenue to Von Karman Avenue	70.6	69	148	319
14	Alton Parkway	Lake Road to Creek Road	70.4	67	144	310
15	Alton Parkway	Telemetry to Banting	70.5	67	144	311
16	Alton Parkway	Irvine Boulevard to Commercentre	70.8	96	206	444
17	Alton Parkway	Jenner to Telemetry	70.4	66	143	308
18	Alton Parkway	Irvine Center Drive to Gateway Boulevard	71.3	102	220	475
19	Alton Parkway	Sand Canyon Avenue to Hospital	73.7	106	227	490
20	Alton Parkway	Laguna Canyon Road to Jenner	70.3	65	141	303
21	Alton Parkway	Technology Drive East to Barranca Pkwy/Muirlands Blvd	71.2	101	219	471
22	Alton Parkway	Royal Oak to Valley Oak Drive	70.1	64	137	295
23	Alton Parkway	Banting to Pacifica	70.1	63	136	293
24	Alton Parkway	Barranca Pkwy/Muirlands Blvd to Jeronimo Road	71.0	97	210	452
25	Alton Parkway	Ada to Technology Drive East	70.7	94	202	435

Table 8

26	Alton Parkway	Von Karman Avenue to Jamboree Road	69.8	RW	130	281
27	Alton Parkway	Jeronimo Road to Hughes	69.9	RW	178	384
28	Alton Parkway	Hughes to Morgan	69.8	RW	174	376
29	Alton Parkway	Morgan to Toledo Way	69.1	RW	157	339
30	Alton Parkway	San Marino to Culver Drive	69.2	RW	160	345
31	Alton Parkway	Jamboree Road to Murphy Avenue	69.2	RW	161	347
32	Alton Parkway	Hospital to Laguna Canyon Road	72.1	83	178	384
33	Alton Parkway	Valley Oak Drive to Sand Canyon Avenue	71.9	80	172	371
34	Alton Parkway	Murphy Avenue to Harvard Avenue	69.0	RW	156	335
35	Alton Parkway	Foster to Irvine Boulevard	68.7	RW	149	321
36	Alton Parkway	Fairbanks to Foster	68.6	RW	145	313
37	Alton Parkway	Toledo Way to Bertea	68.4	RW	142	306
38	Alton Parkway	Pacifica to Meridian	71.7	78	169	364
39	Alton Parkway	Bertea to Fairbanks	68.3	RW	140	301
40	Alton Parkway	Meridian to Irvine Center Drive	68.3	RW	139	300
41	Alton Parkway	Paseo Westpark to San Marino	68.3	RW	139	300
42	Alton Parkway	Harvard Avenue to Paseo Westpark	67.9	RW	130	280
43	Astor	Lynx to Fairbanks	67.1	RW	52	112
44	Astor	Cadence to Lynx	65.9	RW	43	93
45	Bake Parkway	I-5 NB Off-Ramp to Rockfield Boulevard	76.7	282	607	1307
46	Bake Parkway	Muirlands Boulevard to Jeronimo Road	73.1	134	289	624
47	Bake Parkway	Rockfield Boulevard to Muirlands Boulevard	75.1	220	474	1020
48	Bake Parkway	Jeronimo Road to Toledo Way	72.2	117	252	543
49	Bake Parkway	Toledo Way to Cromwell	71.7	110	236	509
50	Bake Parkway	Cromwell to Irvine Boulevard	71.6	107	231	498
51	Bake Parkway	Research Drive to I-5 SB Off-Ramp	69.7	RW	173	372
52	Bake Parkway	Irvine Center Drive to Research Drive	65.1	RW	85	184
53	Bake Parkway	Lake Forest Drive to Irvine Center Drive	63.7	RW	RW	149
54	Banting	Alton Parkway to Barranca Parkway	60.3	RW	RW	65
55	Barranca Parkway	Pacifica to Irvine Center Drive	73.3	104	224	483
56	Barranca Parkway	Banting to Pacifica	72.8	97	208	448



Table 8

57	Barranca Parkway	I-5 HOV Ramp to Technology Drive West	73.0	99	213	460
58	Barranca Parkway	Technology Drive West to Ada	72.7	95	204	440
59	Barranca Parkway	Irvine Center Drive to I-5 HOV Ramp	72.6	94	202	434
60	Barranca Parkway	Culver Drive to West Yale Loop	72.3	89	191	412
61	Barranca Parkway	East Yale Loop to Jeffrey Road	72.3	88	190	410
62	Barranca Parkway	West Yale Loop to Lake Road	72.1	86	185	399
63	Barranca Parkway	Ada to Alton Parkway	72.2	87	188	404
64	Barranca Parkway	Lake Road to Creek Road	71.8	83	178	383
65	Barranca Parkway	Red Hill Avenue to Armstrong Avenue	74.8	209	451	972
66	Barranca Parkway	Discovery/Herchel to Banting	71.7	81	174	375
67	Barranca Parkway	Lyon to East Yale Loop	71.6	80	172	371
68	Barranca Parkway	Creek Road to Lyon	71.5	79	170	367
69	Barranca Parkway	Von Karman Avenue to Jamboree Road	72.8	123	264	569
70	Barranca Parkway	Sand Canyon Avenue to Laguna Canyon Road	71.1	75	161	346
71	Barranca Parkway	Armstrong Avenue to Von Karman Avenue	72.5	118	254	546
72	Barranca Parkway	Valley Oak Drive to Sand Canyon Avenue	70.8	71	153	329
73	Barranca Parkway	Jamboree Road to Construction Circle	71.2	101	217	467
74	Barranca Parkway	Santa Rosa to Culver Drive	71.1	99	213	459
75	Barranca Parkway	FedEx to Discovery/Herchel	70.6	68	147	316
76	Barranca Parkway	Jeffrey Road to Valley Oak Drive	70.5	67	145	313
77	Barranca Parkway	Laguna Canyon Road to FedEx	70.4	67	144	310
78	Barranca Parkway	Pullman Street to Red Hill Avenue	73.6	175	377	812
79	Barranca Parkway	Construction Circle to Fire Station	70.6	93	200	430
80	Barranca Parkway	Fire Station to Harvard Avenue	70.6	93	200	430
81	Barranca Parkway	Paseo Westpark to Santa Rosa	70.6	93	200	430
82	Barranca Parkway	Harvard Avenue to Paseo Westpark	70.3	88	191	411
83	Bay Tree	Trabuco Road to Roosevelt	57.1	RW	RW	RW
84	Beacon	Ridge Valley to Benchmark	59.7	RW	RW	RW
85	Benchmark (LN Street)	Ridge Valley (O Street) to Bosque	56.5	RW	RW	RW
86	Bison Avenue	SR-73 NB Off-Ramp to California Avenue	69.7	RW	128	276
87	Bonita Canyon Drive	MacArthur Boulevard to SR-73	70.3	79	169	364

Table 8

88	Bonita Canyon Drive	Turtle Ridge to Shady Canyon Drive	68.6	RW	130	281
89	Bonita Canyon Drive	Newport Coast Drive to Turtle Ridge	68.2	RW	123	266
90	Bonita Canyon Drive	SR-73 NB Off-Ramp to Newport Coast Drive	68.1	RW	120	258
91	Bosque	Cadence to Great Park Boulevard	65.2	RW	39	84
92	Bosque	Irvine Boulevard to Benchmark (LN Street)	63.6	RW	RW	65
93	Bosque	Benchmark to Cadence	63.2	RW	RW	61
94	Bosque	Great Park Boulevard to Beacon	56.8	RW	RW	RW
95	Bosque	Beacon to S 5th Street	56.2	RW	RW	RW
96	Bryan Avenue	Jamboree Road to Market Place	69.1	RW	117	252
97	Bryan Avenue	Market Place to El Camino Real	68.8	RW	113	243
98	Bryan Avenue	Rubicon to Culver Drive	68.9	RW	114	245
99	Bryan Avenue	El Camino Real to Rubicon	68.9	RW	113	243
100	Bryan Avenue	Eastwood to Jeffrey Road	67.2	RW	88	189
101	Bryan Avenue	Westwood to Yale Avenue	66.8	RW	82	178
102	Bryan Avenue	Culver Drive to Westwood	66.7	RW	81	175
103	Bryan Avenue	Yale Avenue to Eastwood	66.8	RW	82	176
104	Cadence	Pusan to Chinon	65.6	RW	41	89
105	Cadence	Bosque to Pusan	65.3	RW	39	85
106	Cadence	Ridge Valley (O Street) to Bosque	64.0	RW	RW	69
107	Cadence	Chinon to Merit	62.4	RW	RW	54
108	Cadence	Merit to Astor	59.4	RW	RW	RW
109	California Avenue	University Drive to Academy Way	67.3	RW	89	191
110	California Avenue	Campus Drive to Harvard Avenue	64.2	RW	RW	119
111	California Avenue	Theory to Bison Avenue	64.0	RW	RW	115
112	Campus Drive	Carlson Avenue to University Drive	73.3	83	180	387
113	Campus Drive	University Drive to Bridge Road	71.8	82	177	381
114	Campus Drive	Jamboree Road to Carlson Avenue	71.6	80	172	371
115	Campus Drive	Stanford Court to Berkeley Avenue	71.1	74	159	342
116	Campus Drive	California Avenue to Culver Drive	70.9	72	155	334
117	Campus Drive	Berkeley Avenue to Cornell	69.9	RW	133	287
118	Campus Drive	Martin to Von Karman Avenue	69.2	RW	120	258

Table 8

119	Campus Drive	Culver Drive to Paseo Montoya (Turtle Rock Drive)	68.7	RW	111	239
120	Campus Drive	Von Karman Avenue to Teller Avenue	68.5	RW	107	231
121	Campus Drive	MacArthur Boulevard to Martin	68.3	RW	104	224
122	Campus Drive	Teller Avenue to Jamboree Road	67.6	RW	93	201
123	Carlson Avenue	Michelson Drive to Campus Drive	67.9	RW	98	211
124	Chinon	Irvine Boulevard to Cadence	58.8	RW	RW	RW
125	Creek Road	Alton Parkway to Barranca Parkway	56.3	RW	RW	RW
126	Culver Drive	Michelson Drive to I-405 SB Off-Ramp	73.9	154	331	713
127	Culver Drive	I-405 SB Off-Ramp to I-405 NB Off Ramp	73.8	151	326	703
128	Culver Drive	I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)	73.9	154	331	714
129	Culver Drive	Scottsdale Drive to I-5 SB Off- Ramp	73.8	151	325	701
130	Culver Drive	I-405 NB Off-Ramp to San Leandro	73.6	146	315	679
131	Culver Drive	San Leandro to Main Street	73.3	140	301	649
132	Culver Drive	Harvard Avenue to University Drive	73.4	140	303	652
133	Culver Drive	Trabuco Road to Farwell Avenue	74.2	153	329	708
134	Culver Drive	Alton Parkway to Barranca Parkway	73.2	137	295	637
135	Culver Drive	Main Street to Alton Parkway	73.1	135	290	625
136	Culver Drive	Warner Avenue to Irvine Center Drive	73.0	133	287	618
137	Culver Drive	Walnut Avenue to Scottsdale Dive	72.8	130	280	604
138	Culver Drive	Barranca Parkway to Warner Avenue	72.9	131	282	607
139	Culver Drive	Shady Canyon Drive to Palo Verde	72.0	84	182	392
140	Culver Drive	Deerfield Avenue to Walnut Avenue	72.5	124	267	574
141	Culver Drive	Sandburg Way to Michelson Drive	72.5	124	267	575
142	Culver Drive	Irvine Center Drive to Deerfield Avenue	72.4	122	263	567
143	Culver Drive	Palo Verde to Campus Drive	71.6	80	172	370
144	Culver Drive	University Drive to Sandburg Way	72.2	118	253	545
145	Culver Drive	Farwell Avenue to Bryan Avenue	73.2	131	281	606
146	Culver Drive	Campus Drive to High School	72.1	116	250	539
147	Culver Drive	High School to Harvard Avenue	72.0	114	246	530
148	Culver Drive	Bryan Avenue to Florence	71.8	111	238	513
149	Culver Drive	Portola Parkway to Settlers	71.2	76	163	350

Table 8

150	Culver Drive	Florence to Irvine Boulevard	71.7	109	235	505
151	Culver Drive	Irvine Boulevard to Viewpark	70.5	91	196	422
152	Culver Drive	Viewpark to Meadowood	70.4	89	191	412
153	Culver Drive	Settlers to Furrow	68.6	RW	108	233
154	Culver Drive	Meadowood to Portola Parkway	69.0	RW	154	333
155	Discovery Drive	Irvine Center Drive to Laguna Canyon Road	65.5	RW	68	146
156	Discovery Drive	Waterworks Way to Irvine Center Drive	63.6	RW	RW	109
157	East Yale Loop	Alton Parkway to Witherspoon	65.6	RW	69	148
158	East Yale Loop	Osborn Street to Barranca Parkway	65.4	RW	66	143
159	East Yale Loop	Yale Avenue to Springbrook South	65.0	RW	63	136
160	East Yale Loop	Springbrook North to Alton Parkway	63.6	RW	RW	109
161	East Yale Loop	Woodspring to Yale Avenue	62.9	RW	RW	97
162	East Yale Loop	Barranca Parkway to Eastshore	62.5	RW	RW	92
163	Eastwood	Bryan Avenue to Monticello	60.9	RW	RW	43
164	Eastwood	Columbus to Bryan Avenue	58.9	RW	RW	RW
165	El Camino Real	Jamboree Road to Alliance (SR-261 Bridge)	67.2	RW	87	188
166	El Camino Real North	El Camino Real to Bryan Avenue	62.4	RW	RW	90
167	Fairbanks	Alton Parkway to Astor	69.9	RW	79	171
168	Fairbanks	Irvine Boulevard to Alton Parkway	66.9	RW	50	108
169	Fairchild Road	MacArthur Boulevard to Jamboree Road	64.0	RW	RW	116
170	Gateway Boulevard	Alton Parkway to Irvine Center Drive	63.5	RW	RW	107
171	Gateway Boulevard	Spectrum Center Drive (Fortune Drive) to Alton Parkway	62.2	RW	RW	88
172	Gateway Boulevard	Irvine Center Drive to Meridian	59.2	RW	RW	RW
173	Great Park Boulevard	Sand Canyon to Ridge Valley	74.6	121	261	562
174	Great Park Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	70.4	66	143	307
175	Great Park Boulevard (EB)	Bosque to Skyhawk	69.1	RW	71	152
176	Great Park Boulevard (WB)	Bosque to Skyhawk	68.4	RW	63	136
177	Harvard Avenue	University Drive to Michelson Drive	72.1	51	111	239
178	Harvard Avenue	Michelson Drive to Coronado	70.5	67	145	313
179	Harvard Avenue	San Marino to Alton Parkway	70.3	65	140	302
180	Harvard Avenue	Coronado to Main Street	70.2	64	138	298

Table 8

181	Harvard Avenue	San Carlo to San Marino	70.2	64	138	297
182	Harvard Avenue	Main Street to San Carlo	70.1	63	136	293
183	Harvard Avenue	Alton Parkway to San Leon	68.6	RW	109	234
184	Harvard Avenue	San Juan to Barranca Parkway	68.7	RW	110	236
185	Harvard Avenue	San Leon to San Juan	68.6	RW	108	233
186	Harvard Avenue	Irvine Center Drive to Deerfield Avenue	67.5	RW	92	197
187	Harvard Avenue	Deerfield Avenue to Poplar Street	67.4	RW	91	195
188	Harvard Avenue	Barranca Parkway to Warner Avenue	67.9	RW	97	210
189	Harvard Avenue	Bridge Road to University Drive	67.8	RW	97	208
190	Harvard Avenue	Paseo Westpark to Irvine Center Drive	67.8	RW	96	207
191	Harvard Avenue	Poplar Street to Walnut Avenue	68.9	RW	90	195
192	Harvard Avenue	California Avenue to Berkeley Avenue	67.3	RW	89	193
193	Harvard Avenue	Culver Drive to California Avenue	67.3	RW	88	191
194	Harvard Avenue	Berkeley to Bridge Road	67.2	RW	87	188
195	Harvard Avenue	Warner Avenue to Paseo Westpark	66.8	RW	82	176
196	Hicks Canyon Drive	Delamesa to Yale Avenue	58.2	RW	RW	RW
197	Hornet (5th St)	Ridge Valley (O Street) to Bosque	57.5	RW	RW	RW
198	Hubble	Irvine Center Drive to Bunsen	56.1	RW	RW	RW
199	Irvine Boulevard	SR-133 NB Off- Ramp to Ridge Valley (O Street)	72.3	119	256	552
200	Irvine Boulevard	SR-133 SB Off-Ramp to SR-133 NB Off-Ramp	72.2	118	254	547
201	Irvine Boulevard	Sand Canyon to SR-133 SB Off-Ramp	73.0	128	275	592
202	Irvine Boulevard	Merit to Alton	71.6	108	232	500
203	Irvine Boulevard	Journey to Sand Canyon Avenue	71.7	109	236	507
204	Irvine Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	71.2	100	216	466
205	Irvine Boulevard	Pusan Way to Chinon (B Street)	71.0	98	211	455
206	Irvine Boulevard	Palo Lado to Yale Avenue	71.3	103	223	480
207	Irvine Boulevard	Culver Drive to Palo Lado	71.3	103	221	476
208	Irvine Boulevard	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	71.1	100	215	464
209	Irvine Boulevard	Old Myford Road to Market Place	71.2	101	217	467
210	Irvine Boulevard	Bosque (LY Street) to Modjeska	71.2	101	217	468
211	Irvine Boulevard	Jamboree Road to Old Myford Road	71.1	99	214	461

Table 8

212	Irvine Boulevard	Market Place to SR-261 SB Off-Ramp	71.1	99	213	459
213	Irvine Boulevard	Jeffrey Road to Groveland	71.1	100	215	464
214	Irvine Boulevard	Bake Parkway to Lake Forest Drive	70.6	92	198	426
215	Irvine Boulevard	Independence Way (The Groves)/The Groves to Jeffrey Road	70.8	94	204	438
216	Irvine Boulevard	Chinon (B Street) to Merit	70.5	90	194	418
217	Irvine Boulevard	SR-261 NB Off-Ramp to Central Park	70.7	93	200	431
218	Irvine Boulevard	Pueblo Norte to Independence Way (The Groves)/ Parkwood	70.6	92	197	425
219	Irvine Boulevard	Yale Avenue to Pueblo Norte	70.5	91	197	423
220	Irvine Boulevard	Modjeska to Pusan Way	70.2	87	188	404
221	Irvine Boulevard	Central Park Avenue to Culver Drive	70.0	84	182	392
222	Irvine Boulevard	Parker to Bake Parkway	69.7	RW	173	372
223	Irvine Boulevard	Alton Parkway to Fairbanks	68.6	RW	146	315
224	Irvine Center Drive	Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp	72.8	122	263	567
225	Irvine Center Drive	Orange Tree to Valley Oak Drive	72.0	115	247	532
226	Irvine Center Drive	I-405 SB Off-Ramp to Research	72.3	114	246	529
227	Irvine Center Drive	Irvine Valley College to Orange Tree	71.9	113	244	525
228	Irvine Center Drive	Fontaine Avenue to Jeffrey Road	71.7	109	236	507
229	Irvine Center Drive	Culver Drive to Deerwood	71.6	108	233	502
230	Irvine Center Drive	Deerwood to Yale Avenue	71.6	108	232	499
231	Irvine Center Drive	Yale Avenue to Fontaine Avenue	71.7	109	234	504
232	Irvine Center Drive	Jeffrey Road to Irvine Valley College	71.5	106	229	493
233	Irvine Center Drive	Alton Parkway to Spectrum	71.4	103	223	480
234	Irvine Center Drive	Spectrum to Pacifica	71.3	103	221	476
235	Irvine Center Drive	Hearthstone to Culver Drive	71.0	98	211	455
236	Irvine Center Drive	Charter to Barranca Parkway	71.0	97	210	452
237	Irvine Center Drive	Jamboree Road to Harvard Avenue	70.6	92	198	426
238	Irvine Center Drive	Pacifica to Entertainment (Enterprise/Fortune)	70.7	94	203	437
239	Irvine Center Drive	Valley Oak Drive to Sand Canyon Avenue	70.7	94	202	435
240	Irvine Center Drive	Harvard Avenue to Hearthstone	70.3	89	191	411
241	Irvine Center Drive	Research to Hubble	70.0	84	180	389
242	Irvine Center Drive	Barranca Parkway to Gateway Boulevard	70.2	86	185	399

Table 8

243	Irvine Center Drive	Bake Parkway to Muller	69.8	RW	176	380
244	Irvine Center Drive	Discovery to Charter	70.2	87	188	405
245	Irvine Center Drive	Hubble to Bake Parkway	69.6	RW	170	365
246	Irvine Center Drive	Muller to Tesla	69.4	RW	165	355
247	Irvine Center Drive	Sand Canyon Avenue to Odyssey	69.4	RW	165	356
248	Irvine Center Drive	Tesla to Scientific Way	69.1	RW	156	337
249	Irvine Center Drive	Scientific Way to Lake Forest Drive	68.9	RW	152	328
250	Irvine Center Drive	Gateway Boulevard to Alton Parkway	68.9	RW	153	330
251	Irvine Center Drive	Laguna Canyon Road to Discovery	68.9	RW	153	329
252	Irvine Center Drive	Odyssey to Laguna Canyon Road	68.9	RW	152	327
253	Irvine Center Drive (Edinger)	Redhill Avenue to Jamboree Road	71.1	99	213	458
254	Jamboree Road	I-5 SB Off-Ramp to I-5 NB Off-Ramp	74.5	168	362	780
255	Jamboree Road	I-405 SB Off-Ramp to I-405 NB Off Ramp	75.7	191	411	885
256	Jamboree Road	Walnut Avenue to Michelle Drive	73.9	153	329	709
257	Jamboree Road	I-405 NB Off-Ramp to Main Street	77.0	293	632	1362
258	Jamboree Road	Michelle Drive to I-5 SB Off-Ramp	73.6	146	314	676
259	Jamboree Road	Main Street to Kelvin Avenue	76.4	268	577	1244
260	Jamboree Road	Michelson Drive to I-405 SB Off-Ramp	74.4	217	467	1007
261	Jamboree Road	Kelvin Avenue to McGaw Avenue	76.1	255	549	1183
262	Jamboree Road	McGaw Avenue to Alton Parkway	76.0	253	545	1174
263	Jamboree Road	Birch Street to Campus Drive	73.1	135	291	626
264	Jamboree Road	Dupont Drive to Michelson Drive	74.0	148	318	685
265	Jamboree Road	Alton Parkway to Beckman	75.7	238	513	1106
266	Jamboree Road	Fairchild Road to Birch Street	73.6	139	300	646
267	Jamboree Road	Beckman to Barranca Parkway	75.3	226	487	1049
268	Jamboree Road	I-5 NB Off-Ramp to El Camino Real	75.1	218	470	1013
269	Jamboree Road	Campus Drive to Dupont Drive	73.2	131	283	610
270	Jamboree Road	El Camino Real to West Drive	74.9	213	458	988
271	Jamboree Road	West Drive to Bryan Avenue	74.9	213	460	991
272	Jamboree Road	Bryan Avenue to Irvine Boulevard	74.6	202	436	939
273	Jamboree Road	Koll Center to Fairchild Road	72.9	125	269	580

Table 8

274	Jamboree Road	MacArthur Boulevard to Koll Center	72.8	124	267	575
275	Jamboree Road	Irvine Boulevard to Portola Parkway	70.7	93	201	433
276	Jamboree Road	Warner Avenue to Edinger Avenue	79.2	261	563	1213
277	Jamboree Road	Barranca Parkway to Warner Avenue	78.4	231	497	1072
278	Jamboree Road	Edinger Avenue to Walnut Avenue	78.0	218	470	1012
279	Jeffrey Road	Walnut Avenue to I-5 NB Off-Ramp	71.4	104	225	485
280	Jeffrey Road	I-5 NB Off-Ramp to Roosevelt	72.3	115	247	532
281	Jeffrey Road	Poplar (Meadows) to Walnut Avenue	71.0	97	210	452
282	Jeffrey Road	Alton Parkway to Barranca Parkway	70.9	97	209	451
283	Jeffrey Road	Irvine Center Drive to Poplar (Meadows)	70.8	94	203	438
284	Jeffrey Road	I-405 NB Off-Ramp to Quail Creek	71.0	97	210	452
285	Jeffrey Road	Barranca Parkway to Irvine Valley College	70.7	93	201	434
286	Jeffrey Road	Quail Creek to Alton Parkway	70.8	95	205	442
287	Jeffrey Road	Irvine Valley College to Irvine Center Drive	70.5	90	194	419
288	Jeffrey Road	Trabuco Road to Hideaway	69.7	RW	173	372
289	Jeffrey Road	Hideaway to Bryan Avenue	69.7	RW	173	372
290	Jeffrey Road	Roosevelt to Grove	70.4	85	184	396
291	Jeffrey Road	Grove to Trabuco Road	70.2	82	177	382
292	Jeffrey Road	Bryan Avenue to Irvine Boulevard	68.6	RW	145	312
293	Jeffrey Road	Encore to Portola Parkway	65.5	RW	91	196
294	Jeffrey Road	Irvine Boulevard to Encore	65.4	RW	89	191
295	Jeronimo Road	Goodyear to Bake Parkway	64.6	RW	RW	127
296	Jeronimo Road	Alton Parkway to Goodyear	64.3	RW	RW	121
297	Laguna Canyon Road	Old Laguna Canyon Road to Lake Forest Drive	73.4	141	304	655
298	Laguna Canyon Road	Laguna Canyon Freeway to Quail Hill Parkway	70.0	RW	134	289
299	Laguna Canyon Road	Discovery to Sand Canyon Avenue	69.5	RW	125	270
300	Laguna Canyon Road	I-405 Overcrossing to Pasteur	68.0	RW	79	171
301	Laguna Canyon Road	Irvine Center Drive to Discovery	69.0	RW	115	248
302	Laguna Canyon Road	Quail Hill Parkway to I-405 Overcrossing	68.0	RW	79	171
303	Laguna Canyon Road	Pasteur to Alton Parkway	67.1	RW	86	185
304	Laguna Canyon Road	Waterworks to Irvine Center Drive	67.5	RW	92	197



Table 8

305	Laguna Canyon Road	Alton Parkway to Barranca Parkway	66.4	RW	77	166
306	Laguna Canyon Road	Barranca Parkway to Waterworks	66.3	RW	76	164
307	Lake Forest Drive	Hidden Canyon to Laguna Canyon Road	69.6	RW	126	271
308	Lake Forest Drive	Bake Parkway to Hidden Canyon (Romano)	69.5	RW	125	269
309	Lake Forest Drive	Tesla to Bake Parkway	66.6	RW	108	233
310	Lake Road	Alton Parkway to Barranca Parkway	59.2	RW	RW	RW
311	Lynx	Irvine Boulevard to Astor	53.2	RW	RW	RW
312	MacArthur Boulevard	I-405 SB Off-Ramp to Michelson Drive	76.8	284	612	1318
313	MacArthur Boulevard	Main Street to I-405 NB Off-Ramp	76.7	280	603	1299
314	MacArthur Boulevard	I-405 NB Off-Ramp and I-405 SB Off-Ramp	76.6	277	597	1287
315	MacArthur Boulevard	Jamboree Road to Fairchild Road	69.9	RW	178	382
316	MacArthur Boulevard	Fairchild Road to University Drive	69.8	RW	176	379
317	MacArthur Boulevard	Fitch to Red Hill Avenue	70.5	87	187	403
318	MacArthur Boulevard	Michelson Drive to Douglas	72.3	143	308	664
319	MacArthur Boulevard	Douglas to Campus Drive	72.3	141	305	656
320	MacArthur Boulevard	Skypark to Main Street	69.5	RW	160	346
321	MacArthur Boulevard	Redhill Avenue to Skypark	68.4	RW	141	304
322	MacArthur Boulevard	Birch Street to Jamboree Road	67.2	RW	118	254
323	MacArthur Boulevard	Campus Drive to Birch Street	69.5	RW	200	430
324	Main Street	Gillette Avenue to Von Karman Avenue	70.9	92	199	428
325	Main Street	MacArthur Boulevard to Mercantile	70.3	84	181	391
326	Main Street	Executive Park to MacArthur Boulevard	68.5	RW	143	308
327	Main Street	Von Karman Avenue to Cartwright	68.5	RW	143	308
328	Main Street	McDermott to Red Hill Avenue	68.1	RW	135	292
329	Main Street	Red Hill Avenue to Executive Circle	68.0	RW	134	288
330	Main Street	Jamboree Road to Union	67.9	RW	131	282
331	Main Street	Culver Drive to West Yale Loop	67.2	RW	87	188
332	Main Street	Siglo to Jamboree Road	67.7	RW	128	275
333	Main Street	Veneto to Harvard Avenue	67.6	RW	125	269
334	Main Street	Paseo Westpark to Culver Drive	66.4	RW	77	166
335	Main Street	Harvard Avenue to San Mateo	66.3	RW	76	165

Table 8

336	Marine Way	Sand Canyon Avenue to Ridge Valley (O Street)	72.3	72	154	332
337	Marine Way	Alton Parkway to Bake Parkway	69.5	RW	124	267
338	Marine Way	Lynx to Barranca Parkway	69.3	RW	122	262
339	Marine Way	County Access to Treble	68.5	RW	107	230
340	Marine Way	Ridge Valley (O Street) to Skyhawk	68.3	RW	104	224
341	Marine Way	Skyhawk to County Access	67.4	RW	90	194
342	Marine Way	Barranca Parkway to Alton Parkway	66.8	RW	82	177
343	Marine Way	Treble to Lynx	66.6	RW	79	171
344	McGaw Avenue	Von Karman Avenue to Jamboree Road	64.5	RW	RW	125
345	McGaw Avenue	Red Hill Avenue to Von Karman Avenue	64.4	RW	RW	123
346	McGaw Avenue	Daimler to Red Hill Avenue	62.4	RW	RW	91
347	McGaw Avenue	Jamboree Road to Murphy Avenue	59.5	RW	RW	RW
348	Meadowood	Culver Drive to Canyonwood	59.6	RW	RW	RW
349	Meridian	Spectrum to Alton Parkway	55.7	RW	RW	RW
350	Meridian	Alton Parkway to Gateway Boulevard	54.8	RW	RW	RW
351	Merit	Irvine Boulevard to Cadence	58.0	RW	RW	RW
352	Michelson Drive	Riparian to Harvard Avenue	68.3	RW	104	224
353	Michelson Drive	Almond Tree Lane to Yale Avenue	67.2	RW	53	113
354	Michelson Drive	Von Karman Avenue to Obsidian	68.1	RW	101	218
355	Michelson Drive	Parkside to Culver Drive	67.8	RW	96	206
356	Michelson Drive	Gillman to Seton/Sandburg Way	66.9	RW	50	108
357	Michelson Drive	Carlson to Prince	67.3	RW	107	231
358	Michelson Drive	MacArthur Boulevard to Dupont Drive	67.5	RW	92	198
359	Michelson Drive	Harvard Avenue to Parkside	66.8	RW	83	178
360	Michelson Drive	Bixby to Von Karman Avenue	66.9	RW	83	179
361	Michelson Drive	Jamboree Road to Carlson	69.6	RW	122	262
362	Michelson Drive	Teller to Jamboree Road	69.6	RW	122	263
363	Michelson Drive	Jordan East to University Drive	67.1	RW	41	89
364	Michelson Drive	Culver Drive to Angell	66.3	RW	49	105
365	Modjeska (A Street)	Portola Springs to Irvine Boulevard	71.7	39	84	182
366	Modjeska (A Street)	South of Irvine Boulevard	61.0	RW	RW	44

Table 8

367	Muirlands Boulevard	Bake Parkway to City Limits	67.3	RW	89	192
368	Muirlands Boulevard	Alton Parkway to Sterling	66.2	RW	75	162
369	Muirlands Boulevard	Wrigley to Bake Parkway	66.3	RW	76	165
370	Newport Coast Drive	SR-73 NB Off-Ramp to Turtle Ridge	66.7	RW	81	174
371	Newport Coast Drive	Turtle Crest to Bonita Canyon Drive	65.1	RW	64	137
372	Nightmist	Sand Canyon Avenue to Tulip (Road C)	61.7	RW	RW	81
373	Northwood	Yale Avenue to Savannah	62.5	RW	RW	55
374	Northwood	Goldrush to Yale Avenue	61.6	RW	RW	48
375	Oak Canyon Drive	Valley Oak Drive to Sand Canyon Avenue	69.7	RW	77	165
376	Pacifica	Gateway to Barranca Parkway	65.3	RW	66	142
377	Pacifica	Alton Parkway to Gateway	64.2	RW	RW	118
378	Pacifica	Irvine Center Drive to Fortune Drive (Spectrum Center Drive)	62.7	RW	RW	95
379	Pacifica	Meridian to Alton Parkway	60.9	RW	RW	71
380	Park Place	Christamon South to Yale Avenue	57.0	RW	RW	RW
381	Portola Parkway	Bee Canyon Access Road to Sand Canyon Avenue	71.8	83	179	385
382	Portola Parkway	Jeffrey Road to Bee Canyon Access Road	71.8	83	178	384
383	Portola Parkway	Arrowhead to Ridge Valley Parkway	71.5	79	170	366
384	Portola Parkway	Sand Canyon Avenue to Arrowhead	71.1	74	160	346
385	Portola Parkway	Portola Springs to SR-241 SB Off-Ramp	70.1	64	137	296
386	Portola Parkway	Gatepark to Culver Drive	70.9	96	207	445
387	Portola Parkway	ETC-6 (SR-261) NB Off-Ramp to Gatepark	70.8	95	205	441
388	Portola Parkway	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.7	93	201	432
389	Portola Parkway	Jamboree Road to Bellevue	70.6	93	199	430
390	Portola Parkway	Bellevue to ETC-6 (SR-261) SB Off-Ramp	70.6	92	198	427
391	Portola Parkway	Yale Avenue to Jeffrey Road	70.4	89	193	415
392	Portola Parkway	Culver Drive to Yale Avenue	69.8	RW	175	377
393	Portola Parkway	Silverado to Portola Springs	68.7	RW	110	236
394	Pusan	Irvine Boulevard to Cadence	56.1	RW	RW	RW
395	Quail Hill Parkway	Shady Canyon Drive to Passage	67.5	RW	92	198
396	Quail Hill Parkway	East Knollcrest to Laguna Canyon Road	65.4	RW	67	144
397	Quassar Drive (Spectrum)	Irvine Center Drive to Spectrum Center Drive (Fortune)	55.0	RW	RW	RW

Table 8

398	Red Hill Avenue	MacArthur Boulevard to McGaw Avenue	71.7	108	233	503
399	Red Hill Avenue	I-405 Over Crossing to Main Street	70.3	65	141	303
400	Red Hill Avenue	Alton Parkway to Deere Avenue	70.1	86	185	398
401	Red Hill Avenue	McGaw Avenue to Alton Parkway	70.1	85	183	394
402	Red Hill Avenue	Deere Avenue to Barranca Parkway	69.9	RW	177	382
403	Red Hill Avenue	Skypark East to MacArthur Boulevard	71.5	76	163	352
404	Red Hill Avenue	Main Street to Skypark East	70.9	69	148	320
405	Research Drive	Hubble to Bake Parkway	69.7	RW	128	276
406	Research Drive	Scientific to Lake Forest Drive	67.8	RW	95	206
407	Research Drive	Bake Parkway to Muller	66.8	RW	82	177
408	Research Drive	Irvine Center Drive to Bunsen	65.8	RW	70	151
409	Ridge Valley (O Street)	Irvine Boulevard to Trabuco Road (Great Park Boulevard)	67.3	RW	89	191
410	Ridge Valley (O Street)	Portola Parkway to Irvine Boulevard	66.4	RW	78	167
411	Ridge Valley (O Street)	Trabuco Road (Great Park Boulevard) to Marine Way	66.0	RW	73	157
412	Ridge Valley (O Street)	Ranchland to Portola Parkway	58.1	RW	RW	RW
413	Ridgeline Drive	Concordia East to University Drive	68.8	RW	71	154
414	Ridgeline Drive	Turtle Rock Drive to San Simeon	68.5	RW	68	147
415	Rockfield Avenue	Whatney to McLaren	67.8	RW	96	206
416	Rockfield Avenue	Bake Parkway to Whatney	64.4	RW	RW	122
417	Rockfield Avenue	Thomas to Bake Parkway	63.2	RW	RW	101
418	Roosevelt	Jeffrey Road to Vision	66.7	RW	81	175
419	Roosevelt	Yale Avenue to Van Buren	68.3	RW	50	108
420	Roosevelt	Vision to Bay Tree	66.5	RW	79	170
421	Roosevelt	Nimitz to Jeffrey Road	65.9	RW	72	155
422	Roosevelt	Tulip (Road C) to Sand Canyon Avenue	65.7	RW	70	150
423	Royal Oak	Alton Parkway to Eaglecreek	64.0	RW	RW	56
424	Sand Canyon Avenue	Oak Canyon Drive to Burt Road	72.2	118	254	547
425	Sand Canyon Avenue	Irvine Center Drive to Oak Canyon Drive	72.0	115	247	532
426	Sand Canyon Avenue	I-405 NB Off-Ramp to Alton Parkway	74.7	123	265	571
427	Sand Canyon Avenue	Burt Road to I-5 SB Off-Ramp	72.8	123	265	571
428	Sand Canyon Avenue	Marine to I-5 NB Off-Ramp	74.8	208	448	965

Table 8

429	Sand Canyon Avenue	Trabuco Road to Towngate	71.2	101	217	468
430	Sand Canyon Avenue	Barranca Parkway to Waterworks	71.0	98	211	454
431	Sand Canyon Avenue	I-5 SB Off-Ramp to Marine	74.0	184	396	854
432	Sand Canyon Avenue	Hospital to Barranca Parkway	70.9	96	207	445
433	Sand Canyon Avenue	Nightmist to Roosevelt	73.6	173	372	801
434	Sand Canyon Avenue	I-405 SB Off-Ramp to I-405 NB Off-Ramp	73.6	104	224	483
435	Sand Canyon Avenue	I-5 NB Off-Ramp to Nightmist	73.6	174	375	808
436	Sand Canyon Avenue	Towngate to Irvine Boulevard	70.6	92	199	429
437	Sand Canyon Avenue	Waterworks to Irvine Center Drive	70.3	88	189	408
438	Sand Canyon Avenue	Irvine Boulevard to Portola Parkway	70.3	66	141	304
439	Sand Canyon Avenue	Roosevelt to Trabuco Road	72.8	153	331	712
440	Sand Canyon Avenue	Alton Parkway to Hospital	70.9	91	197	424
441	Sand Canyon/Shady Canyon	Quail Hill Parkway to I-405 SB Ramps	71.8	79	170	366
442	Scientific Way	Irvine Center Drive to Wald	55.0	RW	RW	RW
443	Shady Canyon Drive	Culver Drive/Bonita Canyon Drive to Cloverfield	69.4	RW	73	158
444	Shady Canyon Drive	Bommer Canyon Road to Sunnyhill	67.8	RW	77	165
445	Skyhawk	Great Park Boulevard to Marine Way	59.5	13	27	58
446	Southwood	Yale Avenue to Colt	60.6	9	19	41
447	Southwood	Challenger to Yale Avenue	60.4	9	18	40
448	Spectrum Center Drive (Fortune Drive)	Pacifica to Quassar Drive (Spectrum )	61.9	18	39	84
449	Spectrum Center Drive (FortuneDrive)	Quassar Drive (Spectrum ) to Gatewayb	62.5	20	42	92
450	Sunnyhill	Shady Canyon Drive to Turtle Rock Drive	57.8	10	21	44
451	Technology Drive	Barranca Parkway to Alton Parkway	70.8	71	152	327
452	Technology Drive	Old Laguna Canyon Road to I-5/SR-133 Undercrossing	69.6	59	127	273
453	Technology Drive	I-5/SR-133 to Barranca Parkway	69.4	57	123	266
454	Technology Drive	Ada to Alton Parkway	63.7	24	51	111
455	Toledo Way	Bake Parkway to City Limits	65.6	32	69	149
456	Toledo Way	Goodyear to Bake Parkway	64.7	28	60	129
457	Toledo Way	Alton Parkway to Parker	64.5	27	58	124
458	Trabuco Road	Keystone to Sand Canyon Avenue	67.3	41	88	191
459	Trabuco Road	Jeffrey Road to Keystone	67.1	40	87	186

Table 8

460	Trabuco Road	Culver Drive to I-5 NB Off-Ramp	66.9	39	83	179
461	Trabuco Road	Monroe to Yale Avenue	66.9	39	84	181
462	Trabuco Road	I-5 NB Off-Ramp to Monroe	66.8	38	82	178
463	Trabuco Road	Yale Avenue to Remington	66.5	37	79	170
464	Trabuco Road	Remington to Jeffrey Road	66.2	35	76	163
465	Turtle Ridge Drive	Federation Way to Bonita Canyon	68.7	52	111	239
466	Turtle Rock Drive	Ridgeline to Willowleaf	67.9	27	58	126
467	Turtle Rock Drive	Silkwood to Sunnyhill	67.8	27	58	125
468	Turtle Rock Drive	Canyon Park to Ridgeline	67.1	24	52	111
469	Turtle Rock Drive	Sunnyhill to Southernwood	64.0	15	32	70
470	Turtle Rock Drive	Campus Drive to Hillgate	64.2	26	55	118
471	Turtle Rock Drive	Paseo Segovia to Campus Drive	65.4	20	43	92
472	University Drive	Golden Glow to Yale Avenue	73.1	100	215	464
473	University Drive	Ridgeline to Michelson Drive	72.6	113	243	522
474	University Drive	Culver Drive to Golden Glow	72.9	98	211	455
475	University Drive	Yale Avenue to Ridgeline	72.4	91	196	422
476	University Drive	Michelson Drive to I-405 SB Off-Ramp	72.8	129	278	599
477	University Drive	Mesa to Campus Drive	74.6	122	263	567
478	University Drive	MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	74.7	123	266	572
479	University Drive	California Avenue to Mesa	74.5	120	259	558
480	University Drive	Campus Drive to Harvard Avenue	70.8	95	205	443
481	University Drive	SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	71.8	65	141	304
482	University Drive	SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps	70.4	89	193	415
483	University Drive	San Joaquin to Culver Drive	69.9	83	178	384
484	University Drive	Harvard Avenue to San Joaquin	69.9	82	178	383
485	Valley Oak Drive	Hawkcreek to Barranca Parkway	68.1	47	100	216
486	Valley Oak Drive	Irvine Center Drive to Oak Canyon Drive	69.5	47	100	216
487	Valley Oak Drive	Barranca Parkway to Irvine Center Drive	67.2	41	88	189
488	Valley Oak Drive	Alton Parkway to Hawkcreek	64.9	28	61	132
489	Von Karman Avenue	Marriott to Morse Avenue	71.0	73	158	340
490	Von Karman Avenue	Michelson Drive to Quartz	70.9	72	154	332

Table 8

491	Von Karman Avenue	McGaw Avenue to Alton Parkway	70.8	71	152	328
492	Von Karman Avenue	Alton Parkway to Barranca Parkway	70.4	80	173	373
493	Von Karman Avenue	Main Street to Anchor	70.7	70	150	324
494	Von Karman Avenue	Anchor to McGaw Avenue	70.6	68	147	316
495	Von Karman Avenue	Morse to Main Street	70.3	66	141	304
496	Von Karman Avenue	Martin to Dupont Drive	69.7	59	128	276
497	Von Karman Avenue	Campus Drive to Martin	69.6	58	126	271
498	Von Karman Avenue	Dupont Drive to Michelson Drive	69.6	58	126	271
499	Walnut Avenue	Jeffrey Road to I-5 SB Off-Ramp	71.0	72	156	336
500	Walnut Avenue	Myford Road to Jamboree Road SB Off-Ramp	69.2	55	120	258
501	Walnut Avenue	The Mall Street to Culver Drive	68.9	52	113	244
502	Walnut Avenue	Harvard Avenue to The Mall Street	68.8	52	113	243
503	Walnut Avenue	Franciscan Street to Ravenwood Street	68.6	50	108	233
504	Walnut Avenue	Ravenwood Street to Yale Avenue	68.5	49	107	230
505	Walnut Avenue	Culver Drive to Franciscan Street	68.4	49	106	228
506	Walnut Avenue	Peters Canyon Road to Harvard Avenue	68.1	63	135	291
507	Walnut Avenue	Jamboree Road NB Off-Ramp to Peters Canyon Road	67.9	61	131	283
508	Walnut Avenue	Yale Avenue to Kazan Street	67.3	42	90	193
509	Walnut Avenue	Wisteria to Jeffrey Road	67.2	41	88	190
510	Warner Avenue	Jamboree Road SB Off-ramp to Construction North	70.1	64	138	297
511	Warner Avenue	Construction North to Harvard Avenue	68.6	50	108	233
512	Warner Avenue	Harvard Avenue to Paseo Westpark	67.1	40	86	185
513	Warner Avenue	Santa Ynez to Culver Drive	66.2	35	75	162
514	Warner Avenue	Culver Drive to West Yale Loop	65.9	33	72	155
515	West Yale Loop	Alton Parkway to Blue Lake North	64.0	25	53	115
516	West Yale Loop	Eagle Run to Main Street	63.8	24	52	112
517	West Yale Loop	Thunder Run to Yale Avenue	64.0	25	54	116
518	West Yale Loop	Main Street to Timber Run	62.9	21	45	97
519	West Yale Loop	Yale Avenue to Shorebird	63.3	22	48	104
520	West Yale Loop	Warner Avenue to Stonecreek South	62.7	20	44	95
521	West Yale Loop	Barranca Parkway to Alton Parkway	62.4	20	42	91

Table 8

522	West Yale Loop	Stonecreek North to Warner Avenue	62.6	20	43	94
523	West Yale Loop	Birdsong to Barranca Parkway	62.5	20	42	91
524	Westwood	Yorktown to Bryan Avenue	63.5	14	30	64
525	Westwood	Bryan Avenue to Leaf	61.6	10	22	48
526	Yale Avenue	Deerfield Avenue to Winvale Avenue	68.6	30	65	141
527	Yale Avenue	Hicks Canyon Drive to Meadowood	67.3	25	54	116
528	Yale Avenue	Walnut Avenue to Roosevelt	71.2	48	103	222
529	Yale Avenue	Roosevelt to Trabuco Road	67.1	40	86	185
530	Yale Avenue	Irvine Center Drive to Deerfield Avenue	66.8	38	82	178
531	Yale Avenue	West Yale Loop to Irvine Center Drive	66.6	37	79	171
532	Yale Avenue	Winvale Avenue to Karen Ann Lane	65.8	33	70	151
533	Yale Avenue	Karen Ann Lane to Walnut Avenue	65.8	33	70	151
534	Yale Avenue	Trabuco Road to Southwood	65.7	32	69	149
535	Yale Avenue	Southwood to Bryan Avenue	65.4	31	67	144
536	Yale Avenue	Northwood to Irvine Boulevard	65.2	30	64	138
537	Yale Avenue	Bryan Avenue to Monticello	65.0	29	63	135
538	Yale Avenue	Irvine Boulevard to Park Place	64.2	26	56	120
539	Yale Avenue	University Drive to Royce	63.5	18	40	86
540	Yale Court	Arborwood to Portola Parkway	60.4	9	18	40

<sup>1</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest receiving land use.  
 "RW" = Location of the respective noise contour falls within the right-of-way of the road.



Table 9

Table 9: Preferred Plan Conditions Noise Contours

ID	Road	Segment	CNEL at Nearest Receiving Land Use (dBA) <sup>1</sup>	Distance to Contour from Centerline (Feet)		
				70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Ada	Barranca Parway to Marine Way	70.8	42	91	196
2	Ada	Alton Parkway to Barranca Parkway	69.2	RW	120	258
3	Alton Parkway	Enterprise to I-5 NB Off-Ramp	73.9	152	328	706
4	Alton Parkway	I-5 NB Off-Ramp to Technology Drive West	74.5	160	345	742
5	Alton Parkway	East Yale Loop to Jeffrey Road	71.8	82	176	380
6	Alton Parkway	Gateway Boulevard to Enterprise	71.7	109	235	507
7	Alton Parkway	Jeffrey Road to Royal Oak	70.7	70	151	324
8	Alton Parkway	Daimler Street to Red Hill Avenue	70.6	69	148	320
9	Alton Parkway	Culver Drive to West Yale Loop	70.6	68	147	318
10	Alton Parkway	West Yale Loop to Lake Road	70.6	68	147	317
11	Alton Parkway	Technology Drive West to Ada	72.4	116	250	539
12	Alton Parkway	Creek Road to East Yale Loop	70.5	68	146	314
13	Alton Parkway	Red Hill Avenue to Von Karman Avenue	70.4	66	143	308
14	Alton Parkway	Lake Road to Creek Road	70.3	65	141	303
15	Alton Parkway	Telemetry to Banting	70.3	66	142	305
16	Alton Parkway	Irvine Boulevard to Commercentre	70.8	95	205	443
17	Alton Parkway	Jenner to Telemetry	70.3	65	140	302
18	Alton Parkway	Irvine Center Drive to Gateway Boulevard	71.0	97	210	452
19	Alton Parkway	Sand Canyon Avenue to Hospital	73.7	105	227	489
20	Alton Parkway	Laguna Canyon Road to Jenner	70.2	64	138	298
21	Alton Parkway	Technology Drive East to Barranca Pkwy/Muirlands Blvd	70.8	95	205	441
22	Alton Parkway	Royal Oak to Valley Oak Drive	70.0	RW	134	288
23	Alton Parkway	Banting to Pacifica	69.9	RW	133	286
24	Alton Parkway	Barranca Pkwy/Muirlands Blvd to Jeronimo Road	70.3	88	189	407
25	Alton Parkway	Ada to Technology Drive East	70.3	88	191	411

Table 9

26	Alton Parkway	Von Karman Avenue to Jamboree Road	69.6	RW	127	273
27	Alton Parkway	Jeronimo Road to Hughes	70.0	84	181	390
28	Alton Parkway	Hughes to Morgan	69.8	RW	174	376
29	Alton Parkway	Morgan to Toledo Way	69.0	RW	156	336
30	Alton Parkway	San Marino to Culver Drive	69.1	RW	157	338
31	Alton Parkway	Jamboree Road to Murphy Avenue	68.9	RW	154	332
32	Alton Parkway	Hospital to Laguna Canyon Road	71.9	81	174	374
33	Alton Parkway	Valley Oak Drive to Sand Canyon Avenue	71.8	79	169	364
34	Alton Parkway	Murphy Avenue to Harvard Avenue	68.7	RW	149	322
35	Alton Parkway	Foster to Irvine Boulevard	68.7	RW	148	318
36	Alton Parkway	Fairbanks to Foster	68.4	RW	142	307
37	Alton Parkway	Toledo Way to Berteza	68.4	RW	142	306
38	Alton Parkway	Pacifica to Meridian	71.5	76	164	353
39	Alton Parkway	Berteza to Fairbanks	68.3	RW	140	301
40	Alton Parkway	Meridian to Irvine Center Drive	68.2	RW	137	294
41	Alton Parkway	Paseo Westpark to San Marino	68.1	RW	136	293
42	Alton Parkway	Harvard Avenue to Paseo Westpark	67.5	RW	124	268
43	Astor	Lynx to Fairbanks	67.0	RW	51	110
44	Astor	Cadence to Lynx	65.8	RW	42	91
45	Bake Parkway	I-5 NB Off-Ramp to Rockfield Boulevard	76.6	276	595	1282
46	Bake Parkway	Muirlands Boulevard to Jeronimo Road	72.9	131	283	609
47	Bake Parkway	Rockfield Boulevard to Muirlands Boulevard	75.0	216	466	1004
48	Bake Parkway	Jeronimo Road to Toledo Way	72.0	114	245	528
49	Bake Parkway	Toledo Way to Cromwell	71.6	108	232	501
50	Bake Parkway	Cromwell to Irvine Boulevard	71.6	107	232	499
51	Bake Parkway	Research Drive to I-5 SB Off-Ramp	69.5	RW	168	362
52	Bake Parkway	Irvine Center Drive to Research Drive	64.8	RW	RW	176
53	Bake Parkway	Lake Forest Drive to Irvine Center Drive	63.4	RW	RW	141
54	Banting	Alton Parkway to Barranca Parkway	60.2	RW	RW	64
55	Barranca Parkway	Pacifica to Irvine Center Drive	73.1	100	216	465
56	Barranca Parkway	Banting to Pacifica	72.7	94	203	438

Table 9

57	Barranca Parkway	I-5 HOV Ramp to Technology Drive West	72.6	94	202	436
58	Barranca Parkway	Technology Drive West to Ada	72.6	93	199	430
59	Barranca Parkway	Irvine Center Drive to I-5 HOV Ramp	72.3	90	193	416
60	Barranca Parkway	Culver Drive to West Yale Loop	72.2	87	188	406
61	Barranca Parkway	East Yale Loop to Jeffrey Road	72.1	86	186	400
62	Barranca Parkway	West Yale Loop to Lake Road	72.0	85	183	394
63	Barranca Parkway	Ada to Alton Parkway	72.0	85	184	396
64	Barranca Parkway	Lake Road to Creek Road	71.7	81	175	376
65	Barranca Parkway	Red Hill Avenue to Armstrong Avenue	74.7	204	440	949
66	Barranca Parkway	Discovery/Herchel to Banting	71.6	79	171	368
67	Barranca Parkway	Lyon to East Yale Loop	71.5	78	168	363
68	Barranca Parkway	Creek Road to Lyon	71.4	77	166	358
69	Barranca Parkway	Von Karman Avenue to Jamboree Road	72.7	120	259	559
70	Barranca Parkway	Sand Canyon Avenue to Laguna Canyon Road	70.8	70	152	327
71	Barranca Parkway	Armstrong Avenue to Von Karman Avenue	72.3	115	247	532
72	Barranca Parkway	Valley Oak Drive to Sand Canyon Avenue	70.6	69	149	320
73	Barranca Parkway	Jamboree Road to Construction Circle	71.0	98	212	457
74	Barranca Parkway	Santa Rosa to Culver Drive	70.9	96	207	446
75	Barranca Parkway	FedEx to Discovery/Herchel	70.2	64	139	299
76	Barranca Parkway	Jeffrey Road to Valley Oak Drive	70.2	64	138	298
77	Barranca Parkway	Laguna Canyon Road to FedEx	70.1	63	136	294
78	Barranca Parkway	Pullman Street to Red Hill Avenue	73.6	174	374	807
79	Barranca Parkway	Construction Circle to Fire Station	70.5	90	194	418
80	Barranca Parkway	Fire Station to Harvard Avenue	70.5	90	194	418
81	Barranca Parkway	Paseo Westpark to Santa Rosa	70.4	90	193	416
82	Barranca Parkway	Harvard Avenue to Paseo Westpark	70.1	85	183	394
83	Bay Tree	Trabuco Road to Roosevelt	57.2	RW	RW	RW
84	Beacon	Ridge Valley to Benchmark	59.6	RW	RW	RW
85	Benchmark (LN Street)	Ridge Valley (O Street) to Bosque	56.5	RW	RW	RW
86	Bison Avenue	SR-73 NB Off-Ramp to California Avenue	69.6	RW	127	274
87	Bonita Canyon Drive	MacArthur Boulevard to SR-73	70.3	78	168	363

Table 9

88	Bonita Canyon Drive	Turtle Ridge to Shady Canyon Drive	68.6	RW	129	279
89	Bonita Canyon Drive	Newport Coast Drive to Turtle Ridge	68.2	RW	123	264
90	Bonita Canyon Drive	SR-73 NB Off-Ramp to Newport Coast Drive	68.0	RW	118	255
91	Bosque	Cadence to Great Park Boulevard	65.2	RW	39	83
92	Bosque	Irvine Boulevard to Benchmark (LN Street)	63.5	RW	RW	64
93	Bosque	Benchmark to Cadence	63.1	RW	RW	60
94	Bosque	Great Park Boulevard to Beacon	56.7	RW	RW	RW
95	Bosque	Beacon to S 5th Street	56.1	RW	RW	RW
96	Bryan Avenue	Jamboree Road to Market Place	68.9	RW	115	247
97	Bryan Avenue	Market Place to El Camino Real	68.9	RW	113	244
98	Bryan Avenue	Rubicon to Culver Drive	68.9	RW	113	244
99	Bryan Avenue	El Camino Real to Rubicon	68.8	RW	113	243
100	Bryan Avenue	Eastwood to Jeffrey Road	66.9	RW	84	181
101	Bryan Avenue	Westwood to Yale Avenue	66.6	RW	80	173
102	Bryan Avenue	Culver Drive to Westwood	66.6	RW	79	171
103	Bryan Avenue	Yale Avenue to Eastwood	66.4	RW	77	167
104	Cadence	Pusan to Chinon	65.6	RW	41	88
105	Cadence	Bosque to Pusan	65.3	RW	39	85
106	Cadence	Ridge Valley (O Street) to Bosque	63.9	RW	RW	68
107	Cadence	Chinon to Merit	62.2	RW	RW	52
108	Cadence	Merit to Astor	59.4	RW	RW	RW
109	California Avenue	University Drive to Academy Way	66.2	RW	76	163
110	California Avenue	Campus Drive to Harvard Avenue	64.2	RW	RW	120
111	California Avenue	Theory to Bison Avenue	63.9	RW	RW	114
112	Campus Drive	Carlson Avenue to University Drive	73.2	82	176	379
113	Campus Drive	University Drive to Bridge Road	71.8	82	177	380
114	Campus Drive	Jamboree Road to Carlson Avenue	71.5	78	169	363
115	Campus Drive	Stanford Court to Berkeley Avenue	71.1	74	159	342
116	Campus Drive	California Avenue to Culver Drive	70.9	72	155	334
117	Campus Drive	Berkeley Avenue to Cornell	70.0	RW	134	288
118	Campus Drive	Martin to Von Karman Avenue	69.0	RW	115	247

Table 9

119	Campus Drive	Culver Drive to Paseo Montoya (Turtle Rock Drive)	68.7	RW	110	238
120	Campus Drive	Von Karman Avenue to Teller Avenue	68.3	RW	104	224
121	Campus Drive	MacArthur Boulevard to Martin	68.2	RW	102	220
122	Campus Drive	Teller Avenue to Jamboree Road	67.5	RW	91	196
123	Carlson Avenue	Michelson Drive to Campus Drive	67.9	RW	97	210
124	Chinon	Irvine Boulevard to Cadence	59.0	RW	RW	RW
125	Creek Road	Alton Parkway to Barranca Parkway	56.1	RW	RW	RW
126	Culver Drive	Michelson Drive to I-405 SB Off-Ramp	73.9	154	331	713
127	Culver Drive	I-405 SB Off-Ramp to I-405 NB Off Ramp	73.8	151	326	703
128	Culver Drive	I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)	73.9	153	330	711
129	Culver Drive	Scottsdale Drive to I-5 SB Off- Ramp	73.9	152	327	704
130	Culver Drive	I-405 NB Off-Ramp to San Leandro	73.6	146	315	678
131	Culver Drive	San Leandro to Main Street	73.3	140	302	650
132	Culver Drive	Harvard Avenue to University Drive	73.3	140	302	651
133	Culver Drive	Trabuco Road to Farwell Avenue	74.3	154	331	713
134	Culver Drive	Alton Parkway to Barranca Parkway	73.2	137	295	637
135	Culver Drive	Main Street to Alton Parkway	73.1	135	290	625
136	Culver Drive	Warner Avenue to Irvine Center Drive	73.0	133	286	615
137	Culver Drive	Walnut Avenue to Scottsdale Dive	72.9	131	283	609
138	Culver Drive	Barranca Parkway to Warner Avenue	72.8	130	280	603
139	Culver Drive	Shady Canyon Drive to Palo Verde	72.0	85	183	394
140	Culver Drive	Deerfield Avenue to Walnut Avenue	72.5	124	268	577
141	Culver Drive	Sandburg Way to Michelson Drive	72.5	124	267	575
142	Culver Drive	Irvine Center Drive to Deerfield Avenue	72.4	122	262	564
143	Culver Drive	Palo Verde to Campus Drive	71.6	80	172	370
144	Culver Drive	University Drive to Sandburg Way	72.2	118	253	546
145	Culver Drive	Farwell Avenue to Bryan Avenue	73.2	131	282	607
146	Culver Drive	Campus Drive to High School	72.1	116	249	537
147	Culver Drive	High School to Harvard Avenue	72.0	114	247	531
148	Culver Drive	Bryan Avenue to Florence	71.8	110	238	513
149	Culver Drive	Portola Parkway to Settlers	71.1	74	161	346

Table 9

150	Culver Drive	Florence to Irvine Boulevard	71.7	109	235	505
151	Culver Drive	Irvine Boulevard to Viewpark	70.5	91	196	423
152	Culver Drive	Viewpark to Meadowood	70.4	90	193	415
153	Culver Drive	Settlers to Furrow	68.4	RW	106	228
154	Culver Drive	Meadowood to Portola Parkway	69.0	RW	154	333
155	Discovery Drive	Irvine Center Drive to Laguna Canyon Road	64.0	RW	RW	115
156	Discovery Drive	Waterworks Way to Irvine Center Drive	61.2	RW	RW	75
157	East Yale Loop	Alton Parkway to Witherspoon	65.5	RW	67	145
158	East Yale Loop	Osborn Street to Barranca Parkway	65.3	RW	65	140
159	East Yale Loop	Yale Avenue to Springbrook South	64.8	RW	RW	131
160	East Yale Loop	Springbrook North to Alton Parkway	63.5	RW	RW	108
161	East Yale Loop	Woodspring to Yale Avenue	62.7	RW	RW	95
162	East Yale Loop	Barranca Parkway to Eastshore	62.4	RW	RW	91
163	Eastwood	Bryan Avenue to Monticello	60.8	RW	RW	42
164	Eastwood	Columbus to Bryan Avenue	58.7	RW	RW	RW
165	El Camino Real	Jamboree Road to Alliance (SR-261 Bridge)	67.1	RW	86	186
166	El Camino Real North	El Camino Real to Bryan Avenue	62.4	RW	RW	90
167	Fairbanks	Alton Parkway to Astor	69.7	RW	77	167
168	Fairbanks	Irvine Boulevard to Alton Parkway	66.9	RW	50	108
169	Fairchild Road	MacArthur Boulevard to Jamboree Road	64.1	RW	RW	117
170	Gateway Boulevard	Alton Parkway to Irvine Center Drive	63.3	RW	RW	103
171	Gateway Boulevard	Spectrum Center Drive (Fortune Drive) to Alton Parkway	62.1	RW	RW	86
172	Gateway Boulevard	Irvine Center Drive to Meridian	59.1	RW	RW	RW
173	Great Park Boulevard	Sand Canyon to Ridge Valley	74.4	119	256	551
174	Great Park Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	70.2	64	139	299
175	Great Park Boulevard (EB)	Bosque to Skyhawk	68.8	RW	67	144
176	Great Park Boulevard (WB)	Bosque to Skyhawk	68.3	RW	62	134
177	Harvard Avenue	University Drive to Michelson Drive	72.0	51	109	236
178	Harvard Avenue	Michelson Drive to Coronado	70.4	67	144	310
179	Harvard Avenue	San Marino to Alton Parkway	70.1	64	138	297
180	Harvard Avenue	Coronado to Main Street	70.1	64	137	295

Table 9

181	Harvard Avenue	San Carlo to San Marino	70.0	63	136	292
182	Harvard Avenue	Main Street to San Carlo	70.0	RW	134	289
183	Harvard Avenue	Alton Parkway to San Leon	68.8	RW	111	239
184	Harvard Avenue	San Juan to Barranca Parkway	68.8	RW	111	239
185	Harvard Avenue	San Leon to San Juan	68.6	RW	108	233
186	Harvard Avenue	Irvine Center Drive to Deerfield Avenue	67.4	RW	91	195
187	Harvard Avenue	Deerfield Avenue to Poplar Street	67.3	RW	90	193
188	Harvard Avenue	Barranca Parkway to Warner Avenue	67.8	RW	97	208
189	Harvard Avenue	Bridge Road to University Drive	67.8	RW	96	207
190	Harvard Avenue	Paseo Westpark to Irvine Center Drive	67.8	RW	96	208
191	Harvard Avenue	Poplar Street to Walnut Avenue	68.7	RW	88	191
192	Harvard Avenue	California Avenue to Berkeley Avenue	67.2	RW	88	190
193	Harvard Avenue	Culver Drive to California Avenue	67.2	RW	88	189
194	Harvard Avenue	Berkeley to Bridge Road	67.1	RW	87	187
195	Harvard Avenue	Warner Avenue to Paseo Westpark	66.8	RW	82	176
196	Hicks Canyon Drive	Delamesa to Yale Avenue	58.2	RW	RW	RW
197	Hornet (5th St)	Ridge Valley (O Street) to Bosque	57.5	RW	RW	RW
198	Hubble	Irvine Center Drive to Bunsen	55.9	RW	RW	RW
199	Irvine Boulevard	SR-133 NB Off- Ramp to Ridge Valley (O Street)	72.3	120	258	557
200	Irvine Boulevard	SR-133 SB Off-Ramp to SR-133 NB Off-Ramp	72.2	118	254	547
201	Irvine Boulevard	Sand Canyon to SR-133 SB Off-Ramp	73.1	128	277	596
202	Irvine Boulevard	Merit to Alton	71.6	108	232	500
203	Irvine Boulevard	Journey to Sand Canyon Avenue	71.6	107	231	497
204	Irvine Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	71.2	100	216	466
205	Irvine Boulevard	Pusan Way to Chinon (B Street)	71.0	98	211	455
206	Irvine Boulevard	Palo Lado to Yale Avenue	71.1	99	213	459
207	Irvine Boulevard	Culver Drive to Palo Lado	71.0	98	212	457
208	Irvine Boulevard	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.9	97	209	451
209	Irvine Boulevard	Old Myford Road to Market Place	71.0	97	210	452
210	Irvine Boulevard	Bosque (LY Street) to Modjeska	70.9	97	209	450
211	Irvine Boulevard	Jamboree Road to Old Myford Road	70.9	96	207	445

Table 9

212	Irvine Boulevard	Market Place to SR-261 SB Off-Ramp	70.9	96	206	444
213	Irvine Boulevard	Jeffrey Road to Groveland	70.8	94	203	438
214	Irvine Boulevard	Bake Parkway to Lake Forest Drive	70.6	92	199	429
215	Irvine Boulevard	Independence Way (The Groves)/The Groves to Jeffrey Road	70.6	92	199	429
216	Irvine Boulevard	Chinon (B Street) to Merit	70.5	90	194	418
217	Irvine Boulevard	SR-261 NB Off-Ramp to Central Park	70.5	90	195	420
218	Irvine Boulevard	Pueblo Norte to Independence Way (The Groves)/ Parkwood	70.3	89	191	411
219	Irvine Boulevard	Yale Avenue to Pueblo Norte	70.3	88	190	410
220	Irvine Boulevard	Modjeska to Pusan Way	70.2	87	188	404
221	Irvine Boulevard	Central Park Avenue to Culver Drive	69.9	RW	178	383
222	Irvine Boulevard	Parker to Bake Parkway	69.5	RW	169	364
223	Irvine Boulevard	Alton Parkway to Fairbanks	68.6	RW	146	315
224	Irvine Center Drive	Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp	72.6	119	256	550
225	Irvine Center Drive	Orange Tree to Valley Oak Drive	71.8	111	239	515
226	Irvine Center Drive	I-405 SB Off-Ramp to Research	72.1	111	239	515
227	Irvine Center Drive	Irvine Valley College to Orange Tree	71.7	109	235	507
228	Irvine Center Drive	Fontaine Avenue to Jeffrey Road	71.5	105	227	489
229	Irvine Center Drive	Culver Drive to Deerwood	71.4	105	226	486
230	Irvine Center Drive	Deerwood to Yale Avenue	71.4	104	224	483
231	Irvine Center Drive	Yale Avenue to Fontaine Avenue	71.4	104	225	484
232	Irvine Center Drive	Jeffrey Road to Irvine Valley College	71.3	103	222	479
233	Irvine Center Drive	Alton Parkway to Spectrum	71.0	98	211	456
234	Irvine Center Drive	Spectrum to Pacifica	71.0	97	210	452
235	Irvine Center Drive	Hearthstone to Culver Drive	70.9	96	207	446
236	Irvine Center Drive	Charter to Barranca Parkway	70.6	93	200	430
237	Irvine Center Drive	Jamboree Road to Harvard Avenue	70.5	90	195	419
238	Irvine Center Drive	Pacifica to Entertainment (Enterprise/Fortune)	70.5	90	195	419
239	Irvine Center Drive	Valley Oak Drive to Sand Canyon Avenue	70.5	90	195	419
240	Irvine Center Drive	Harvard Avenue to Hearthstone	70.2	87	187	403
241	Irvine Center Drive	Research to Hubble	69.7	RW	174	375
242	Irvine Center Drive	Barranca Parkway to Gateway Boulevard	69.8	RW	176	378



Table 9

243	Irvine Center Drive	Bake Parkway to Muller	69.7	RW	173	373
244	Irvine Center Drive	Discovery to Charter	69.8	RW	176	380
245	Irvine Center Drive	Hubble to Bake Parkway	69.5	RW	167	360
246	Irvine Center Drive	Muller to Tesla	69.3	RW	162	349
247	Irvine Center Drive	Sand Canyon Avenue to Odyssey	69.2	RW	159	343
248	Irvine Center Drive	Tesla to Scientific Way	68.9	RW	154	331
249	Irvine Center Drive	Scientific Way to Lake Forest Drive	68.7	RW	149	321
250	Irvine Center Drive	Gateway Boulevard to Alton Parkway	68.6	RW	146	314
251	Irvine Center Drive	Laguna Canyon Road to Discovery	68.6	RW	146	315
252	Irvine Center Drive	Odyssey to Laguna Canyon Road	68.5	RW	145	312
253	Irvine Center Drive (Edinger)	Redhill Avenue to Jamboree Road	70.9	97	208	448
254	Jamboree Road	I-5 SB Off-Ramp to I-5 NB Off-Ramp	74.5	168	362	780
255	Jamboree Road	I-405 SB Off-Ramp to I-405 NB Off Ramp	75.6	188	405	873
256	Jamboree Road	Walnut Avenue to Michelle Drive	73.9	152	328	707
257	Jamboree Road	I-405 NB Off-Ramp to Main Street	77.0	291	628	1353
258	Jamboree Road	Michelle Drive to I-5 SB Off-Ramp	73.6	146	314	676
259	Jamboree Road	Main Street to Kelvin Avenue	76.3	264	569	1226
260	Jamboree Road	Michelson Drive to I-405 SB Off-Ramp	74.3	214	460	992
261	Jamboree Road	Kelvin Avenue to McGaw Avenue	76.0	251	541	1166
262	Jamboree Road	McGaw Avenue to Alton Parkway	75.9	249	537	1157
263	Jamboree Road	Birch Street to Campus Drive	72.9	132	283	611
264	Jamboree Road	Dupont Drive to Michelson Drive	73.8	144	310	668
265	Jamboree Road	Alton Parkway to Beckman	75.5	234	504	1086
266	Jamboree Road	Fairchild Road to Birch Street	73.4	136	292	629
267	Jamboree Road	Beckman to Barranca Parkway	75.2	223	481	1036
268	Jamboree Road	I-5 NB Off-Ramp to El Camino Real	75.1	218	470	1013
269	Jamboree Road	Campus Drive to Dupont Drive	73.1	128	276	595
270	Jamboree Road	El Camino Real to West Drive	75.0	215	463	997
271	Jamboree Road	West Drive to Bryan Avenue	75.0	214	462	995
272	Jamboree Road	Bryan Avenue to Irvine Boulevard	74.7	204	440	948
273	Jamboree Road	Koll Center to Fairchild Road	72.7	121	260	561

Table 9

274	Jamboree Road	MacArthur Boulevard to Koll Center	72.6	120	258	557
275	Jamboree Road	Irvine Boulevard to Portola Parkway	70.7	94	202	436
276	Jamboree Road	Warner Avenue to Edinger Avenue	79.1	260	561	1208
277	Jamboree Road	Barranca Parkway to Warner Avenue	78.3	228	492	1059
278	Jamboree Road	Edinger Avenue to Walnut Avenue	78.0	217	468	1009
279	Jeffrey Road	Walnut Avenue to I-5 NB Off-Ramp	71.3	103	223	479
280	Jeffrey Road	I-5 NB Off-Ramp to Roosevelt	72.2	113	243	523
281	Jeffrey Road	Poplar (Meadows) to Walnut Avenue	70.9	97	208	448
282	Jeffrey Road	Alton Parkway to Barranca Parkway	70.8	95	204	441
283	Jeffrey Road	Irvine Center Drive to Poplar (Meadows)	70.7	94	202	435
284	Jeffrey Road	I-405 NB Off-Ramp to Quail Creek	70.7	94	203	436
285	Jeffrey Road	Barranca Parkway to Irvine Valley College	70.6	92	199	428
286	Jeffrey Road	Quail Creek to Alton Parkway	70.6	92	199	429
287	Jeffrey Road	Irvine Valley College to Irvine Center Drive	70.4	89	191	412
288	Jeffrey Road	Trabuco Road to Hideaway	69.6	RW	171	369
289	Jeffrey Road	Hideaway to Bryan Avenue	69.6	RW	171	369
290	Jeffrey Road	Roosevelt to Grove	70.4	85	182	392
291	Jeffrey Road	Grove to Trabuco Road	70.2	83	178	383
292	Jeffrey Road	Bryan Avenue to Irvine Boulevard	68.5	RW	143	308
293	Jeffrey Road	Encore to Portola Parkway	65.8	RW	95	205
294	Jeffrey Road	Irvine Boulevard to Encore	65.5	RW	91	196
295	Jeronimo Road	Goodyear to Bake Parkway	64.6	RW	RW	127
296	Jeronimo Road	Alton Parkway to Goodyear	64.3	RW	RW	121
297	Laguna Canyon Road	Old Laguna Canyon Road to Lake Forest Drive	73.3	139	300	645
298	Laguna Canyon Road	Laguna Canyon Freeway to Quail Hill Parkway	69.9	RW	134	288
299	Laguna Canyon Road	Discovery to Sand Canyon Avenue	69.1	RW	118	254
300	Laguna Canyon Road	I-405 Overcrossing to Pasteur	67.9	RW	78	169
301	Laguna Canyon Road	Irvine Center Drive to Discovery	67.5	RW	92	198
302	Laguna Canyon Road	Quail Hill Parkway to I-405 Overcrossing	67.9	RW	78	169
303	Laguna Canyon Road	Pasteur to Alton Parkway	66.9	RW	84	182
304	Laguna Canyon Road	Waterworks to Irvine Center Drive	66.4	RW	78	167

Table 9

305	Laguna Canyon Road	Alton Parkway to Barranca Parkway	66.1	RW	74	159
306	Laguna Canyon Road	Barranca Parkway to Waterworks	65.6	RW	69	149
307	Lake Forest Drive	Hidden Canyon to Laguna Canyon Road	69.3	RW	121	261
308	Lake Forest Drive	Bake Parkway to Hidden Canyon (Romano)	69.3	RW	121	260
309	Lake Forest Drive	Tesla to Bake Parkway	66.3	RW	103	222
310	Lake Road	Alton Parkway to Barranca Parkway	59.2	RW	RW	RW
311	Lynx	Irvine Boulevard to Astor	53.2	RW	RW	RW
312	MacArthur Boulevard	I-405 SB Off-Ramp to Michelson Drive	76.7	278	599	1291
313	MacArthur Boulevard	Main Street to I-405 NB Off-Ramp	76.6	277	596	1284
314	MacArthur Boulevard	I-405 NB Off-Ramp and I-405 SB Off-Ramp	76.6	274	590	1271
315	MacArthur Boulevard	Jamboree Road to Fairchild Road	69.9	RW	178	382
316	MacArthur Boulevard	Fairchild Road to University Drive	69.9	RW	177	382
317	MacArthur Boulevard	Fitch to Red Hill Avenue	70.5	87	187	402
318	MacArthur Boulevard	Michelson Drive to Douglas	72.1	137	296	637
319	MacArthur Boulevard	Douglas to Campus Drive	72.1	137	296	637
320	MacArthur Boulevard	Skypark to Main Street	69.5	RW	159	343
321	MacArthur Boulevard	Redhill Avenue to Skypark	68.3	RW	140	302
322	MacArthur Boulevard	Birch Street to Jamboree Road	67.0	RW	114	245
323	MacArthur Boulevard	Campus Drive to Birch Street	69.3	RW	193	415
324	Main Street	Gillette Avenue to Von Karman Avenue	70.7	90	193	416
325	Main Street	MacArthur Boulevard to Mercantile	70.2	83	178	384
326	Main Street	Executive Park to MacArthur Boulevard	68.4	RW	141	304
327	Main Street	Von Karman Avenue to Cartwright	68.3	RW	140	302
328	Main Street	McDermott to Red Hill Avenue	68.1	RW	134	290
329	Main Street	Red Hill Avenue to Executive Circle	68.0	RW	133	286
330	Main Street	Jamboree Road to Union	67.8	RW	129	279
331	Main Street	Culver Drive to West Yale Loop	67.1	RW	87	187
332	Main Street	Siglo to Jamboree Road	67.7	RW	126	272
333	Main Street	Veneto to Harvard Avenue	67.5	RW	124	267
334	Main Street	Paseo Westpark to Culver Drive	66.4	RW	77	167
335	Main Street	Harvard Avenue to San Mateo	66.4	RW	77	166

Table 9

336	Marine Way	Sand Canyon Avenue to Ridge Valley (O Street)	72.3	71	153	329
337	Marine Way	Alton Parkway to Bake Parkway	69.3	RW	120	259
338	Marine Way	Lynx to Barranca Parkway	69.3	RW	122	262
339	Marine Way	County Access to Treble	68.4	RW	105	227
340	Marine Way	Ridge Valley (O Street) to Skyhawk	68.2	RW	102	220
341	Marine Way	Skyhawk to County Access	67.1	RW	86	186
342	Marine Way	Barranca Parkway to Alton Parkway	66.8	RW	82	177
343	Marine Way	Treble to Lynx	66.4	RW	77	167
344	McGaw Avenue	Von Karman Avenue to Jamboree Road	64.3	RW	RW	120
345	McGaw Avenue	Red Hill Avenue to Von Karman Avenue	64.1	RW	RW	118
346	McGaw Avenue	Daimler to Red Hill Avenue	62.4	RW	RW	90
347	McGaw Avenue	Jamboree Road to Murphy Avenue	59.3	RW	RW	RW
348	Meadowood	Culver Drive to Canyonwood	59.8	RW	RW	RW
349	Meridian	Spectrum to Alton Parkway	55.3	RW	RW	RW
350	Meridian	Alton Parkway to Gateway Boulevard	54.6	RW	RW	RW
351	Merit	Irvine Boulevard to Cadence	57.9	RW	RW	RW
352	Michelson Drive	Riparian to Harvard Avenue	68.3	RW	103	223
353	Michelson Drive	Almond Tree Lane to Yale Avenue	67.1	RW	52	112
354	Michelson Drive	Von Karman Avenue to Obsidian	68.0	RW	99	213
355	Michelson Drive	Parkside to Culver Drive	67.8	RW	95	206
356	Michelson Drive	Gillman to Seton/Sandburg Way	66.8	RW	49	106
357	Michelson Drive	Carlson to Prince	67.3	RW	107	230
358	Michelson Drive	MacArthur Boulevard to Dupont Drive	67.3	RW	89	193
359	Michelson Drive	Harvard Avenue to Parkside	66.8	RW	82	177
360	Michelson Drive	Bixby to Von Karman Avenue	66.7	RW	81	175
361	Michelson Drive	Jamboree Road to Carlson	69.6	RW	122	263
362	Michelson Drive	Teller to Jamboree Road	69.6	RW	122	263
363	Michelson Drive	Jordan East to University Drive	66.9	RW	40	87
364	Michelson Drive	Culver Drive to Angell	66.2	RW	48	103
365	Modjeska (A Street)	Portola Springs to Irvine Boulevard	71.7	39	84	181
366	Modjeska (A Street)	South of Irvine Boulevard	61.1	RW	RW	45

Table 9

367	Muirlands Boulevard	Bake Parkway to City Limits	67.1	RW	86	186
368	Muirlands Boulevard	Alton Parkway to Sterling	66.3	RW	76	165
369	Muirlands Boulevard	Wrigley to Bake Parkway	66.3	RW	76	165
370	Newport Coast Drive	SR-73 NB Off-Ramp to Turtle Ridge	66.6	RW	80	173
371	Newport Coast Drive	Turtle Crest to Bonita Canyon Drive	65.1	RW	63	136
372	Nightmist	Sand Canyon Avenue to Tulip (Road C)	61.9	RW	RW	83
373	Northwood	Yale Avenue to Savannah	62.5	RW	RW	55
374	Northwood	Goldrush to Yale Avenue	61.5	RW	RW	47
375	Oak Canyon Drive	Valley Oak Drive to Sand Canyon Avenue	69.2	RW	72	155
376	Pacifica	Gateway to Barranca Parkway	65.2	RW	64	139
377	Pacifica	Alton Parkway to Gateway	64.0	RW	RW	116
378	Pacifica	Irvine Center Drive to Fortune Drive (Spectrum Center Drive)	62.7	RW	RW	94
379	Pacifica	Meridian to Alton Parkway	60.8	RW	RW	70
380	Park Place	Christamon South to Yale Avenue	57.0	RW	RW	RW
381	Portola Parkway	Bee Canyon Access Road to Sand Canyon Avenue	71.5	79	170	367
382	Portola Parkway	Jeffrey Road to Bee Canyon Access Road	71.5	79	170	367
383	Portola Parkway	Arrowhead to Ridge Valley Parkway	71.4	77	166	358
384	Portola Parkway	Sand Canyon Avenue to Arrowhead	71.0	73	157	339
385	Portola Parkway	Portola Springs to SR-241 SB Off-Ramp	70.1	63	136	292
386	Portola Parkway	Gatepark to Culver Drive	70.6	92	198	427
387	Portola Parkway	ETC-6 (SR-261) NB Off-Ramp to Gatepark	70.5	91	197	424
388	Portola Parkway	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.4	89	193	415
389	Portola Parkway	Jamboree Road to Bellevue	70.4	89	191	412
390	Portola Parkway	Bellevue to ETC-6 (SR-261) SB Off-Ramp	70.3	88	190	410
391	Portola Parkway	Yale Avenue to Jeffrey Road	70.1	85	183	394
392	Portola Parkway	Culver Drive to Yale Avenue	69.6	RW	169	364
393	Portola Parkway	Silverado to Portola Springs	68.5	RW	108	232
394	Pusan	Irvine Boulevard to Cadence	56.2	RW	RW	RW
395	Quail Hill Parkway	Shady Canyon Drive to Passage	67.4	RW	91	195
396	Quail Hill Parkway	East Knollcrest to Laguna Canyon Road	65.5	RW	67	145
397	Quassar Drive (Spectrum)	Irvine Center Drive to Spectrum Center Drive (Fortune)	54.8	RW	RW	RW

Table 9

398	Red Hill Avenue	MacArthur Boulevard to McGaw Avenue	71.5	105	227	489
399	Red Hill Avenue	I-405 Over Crossing to Main Street	70.1	64	137	295
400	Red Hill Avenue	Alton Parkway to Deere Avenue	70.0	84	181	390
401	Red Hill Avenue	McGaw Avenue to Alton Parkway	69.9	RW	178	384
402	Red Hill Avenue	Deere Avenue to Barranca Parkway	69.8	RW	174	375
403	Red Hill Avenue	Skypark East to MacArthur Boulevard	71.3	73	157	339
404	Red Hill Avenue	Main Street to Skypark East	70.6	66	142	307
405	Research Drive	Hubble to Bake Parkway	69.5	RW	125	269
406	Research Drive	Scientific to Lake Forest Drive	67.4	RW	90	194
407	Research Drive	Bake Parkway to Muller	66.6	RW	80	172
408	Research Drive	Irvine Center Drive to Bunsen	65.6	RW	69	148
409	Ridge Valley (O Street)	Irvine Boulevard to Trabuco Road (Great Park Boulevard)	67.3	RW	88	190
410	Ridge Valley (O Street)	Portola Parkway to Irvine Boulevard	66.4	RW	78	167
411	Ridge Valley (O Street)	Trabuco Road (Great Park Boulevard) to Marine Way	66.0	RW	73	157
412	Ridge Valley (O Street)	Ranchland to Portola Parkway	58.1	RW	RW	RW
413	Ridgeline Drive	Concordia East to University Drive	68.7	RW	71	152
414	Ridgeline Drive	Turtle Rock Drive to San Simeon	68.4	RW	67	145
415	Rockfield Avenue	Whatney to McLaren	67.6	RW	93	201
416	Rockfield Avenue	Bake Parkway to Whatney	64.1	RW	RW	118
417	Rockfield Avenue	Thomas to Bake Parkway	63.1	RW	RW	100
418	Roosevelt	Jeffrey Road to Vision	66.5	RW	78	169
419	Roosevelt	Yale Avenue to Van Buren	68.2	RW	49	105
420	Roosevelt	Vision to Bay Tree	66.2	RW	76	163
421	Roosevelt	Nimitz to Jeffrey Road	65.9	RW	71	154
422	Roosevelt	Tulip (Road C) to Sand Canyon Avenue	65.6	RW	69	148
423	Royal Oak	Alton Parkway to Eaglecreek	64.0	RW	RW	56
424	Sand Canyon Avenue	Oak Canyon Drive to Burt Road	72.1	115	248	535
425	Sand Canyon Avenue	Irvine Center Drive to Oak Canyon Drive	71.9	113	244	525
426	Sand Canyon Avenue	I-405 NB Off-Ramp to Alton Parkway	74.6	121	260	561
427	Sand Canyon Avenue	Burt Road to I-5 SB Off-Ramp	72.7	121	260	560
428	Sand Canyon Avenue	Marine to I-5 NB Off-Ramp	74.6	204	440	947

Table 9

429	Sand Canyon Avenue	Trabuco Road to Towngate	71.1	99	213	459
430	Sand Canyon Avenue	Barranca Parkway to Waterworks	70.8	95	206	443
431	Sand Canyon Avenue	I-5 SB Off-Ramp to Marine	73.8	181	389	838
432	Sand Canyon Avenue	Hospital to Barranca Parkway	70.6	92	198	426
433	Sand Canyon Avenue	Nightmist to Roosevelt	73.5	172	371	799
434	Sand Canyon Avenue	I-405 SB Off-Ramp to I-405 NB Off-Ramp	73.5	102	220	474
435	Sand Canyon Avenue	I-5 NB Off-Ramp to Nightmist	73.5	171	369	795
436	Sand Canyon Avenue	Towngate to Irvine Boulevard	70.4	89	193	415
437	Sand Canyon Avenue	Waterworks to Irvine Center Drive	70.2	87	187	403
438	Sand Canyon Avenue	Irvine Boulevard to Portola Parkway	69.2	RW	119	257
439	Sand Canyon Avenue	Roosevelt to Trabuco Road	72.8	153	331	712
440	Sand Canyon Avenue	Alton Parkway to Hospital	70.6	88	189	407
441	Sand Canyon/Shady Canyon	Quail Hill Parkway to I-405 SB Ramps	71.7	78	169	364
442	Scientific Way	Irvine Center Drive to Wald	55.0	RW	RW	RW
443	Shady Canyon Drive	Culver Drive/Bonita Canyon Drive to Cloverfield	69.2	RW	71	153
444	Shady Canyon Drive	Bommer Canyon Road to Sunnyhill	67.5	RW	74	159
445	Skyhawk	Great Park Boulevard to Marine Way	59.6	13	27	59
446	Southwood	Yale Avenue to Colt	60.5	9	19	41
447	Southwood	Challenger to Yale Avenue	60.2	8	18	39
448	Spectrum Center Drive (Fortune Drive)	Pacifica to Quassar Drive (Spectrum )	61.9	18	39	84
449	Spectrum Center Drive (FortuneDrive)	Quassar Drive (Spectrum ) to Gatewayb	62.4	19	42	90
450	Sunnyhill	Shady Canyon Drive to Turtle Rock Drive	57.6	9	20	43
451	Technology Drive	Barranca Parkway to Alton Parkway	70.6	68	147	317
452	Technology Drive	Old Laguna Canyon Road to I-5/SR-133 Undercrossing	69.2	56	120	258
453	Technology Drive	I-5/SR-133 to Barranca Parkway	69.1	54	117	251
454	Technology Drive	Ada to Alton Parkway	63.0	21	46	98
455	Toledo Way	Bake Parkway to City Limits	65.7	32	69	149
456	Toledo Way	Goodyear to Bake Parkway	64.7	28	60	128
457	Toledo Way	Alton Parkway to Parker	64.3	26	56	122
458	Trabuco Road	Keystone to Sand Canyon Avenue	67.1	40	87	187
459	Trabuco Road	Jeffrey Road to Keystone	66.9	39	84	180

Table 9

460	Trabuco Road	Culver Drive to I-5 NB Off-Ramp	66.7	38	82	176
461	Trabuco Road	Monroe to Yale Avenue	66.6	37	80	173
462	Trabuco Road	I-5 NB Off-Ramp to Monroe	66.5	37	79	170
463	Trabuco Road	Yale Avenue to Remington	66.2	35	75	161
464	Trabuco Road	Remington to Jeffrey Road	66.0	34	73	156
465	Turtle Ridge Drive	Federation Way to Bonita Canyon	68.8	52	111	240
466	Turtle Rock Drive	Ridgeline to Willowleaf	67.8	27	58	125
467	Turtle Rock Drive	Silkwood to Sunnyhill	67.7	27	57	123
468	Turtle Rock Drive	Canyon Park to Ridgeline	67.0	24	51	110
469	Turtle Rock Drive	Sunnyhill to Southernwood	64.0	15	32	69
470	Turtle Rock Drive	Campus Drive to Hillgate	64.1	25	54	116
471	Turtle Rock Drive	Paseo Segovia to Campus Drive	65.4	20	43	92
472	University Drive	Golden Glow to Yale Avenue	72.9	98	211	455
473	University Drive	Ridgeline to Michelson Drive	72.5	111	239	514
474	University Drive	Culver Drive to Golden Glow	72.8	96	207	446
475	University Drive	Yale Avenue to Ridgeline	72.3	89	192	414
476	University Drive	Michelson Drive to I-405 SB Off-Ramp	72.7	126	272	587
477	University Drive	Mesa to Campus Drive	74.5	119	256	552
478	University Drive	MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	74.4	117	253	545
479	University Drive	California Avenue to Mesa	74.3	117	252	543
480	University Drive	Campus Drive to Harvard Avenue	70.6	93	200	430
481	University Drive	SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	71.5	63	136	292
482	University Drive	SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps	70.1	86	185	399
483	University Drive	San Joaquin to Culver Drive	69.7	81	174	375
484	University Drive	Harvard Avenue to San Joaquin	69.7	80	173	374
485	Valley Oak Drive	Hawkcreek to Barranca Parkway	68.0	46	99	213
486	Valley Oak Drive	Irvine Center Drive to Oak Canyon Drive	69.0	43	93	201
487	Valley Oak Drive	Barranca Parkway to Irvine Center Drive	66.7	38	82	176
488	Valley Oak Drive	Alton Parkway to Hawkcreek	64.8	28	61	131
489	Von Karman Avenue	Marriott to Morse Avenue	70.9	72	155	333
490	Von Karman Avenue	Michelson Drive to Quartz	70.7	70	151	324



Table 9

491	Von Karman Avenue	McGaw Avenue to Alton Parkway	70.7	69	149	321
492	Von Karman Avenue	Alton Parkway to Barranca Parkway	70.3	79	170	366
493	Von Karman Avenue	Main Street to Anchor	70.6	68	147	317
494	Von Karman Avenue	Anchor to McGaw Avenue	70.4	67	144	310
495	Von Karman Avenue	Morse to Main Street	70.2	65	139	300
496	Von Karman Avenue	Martin to Dupont Drive	69.5	58	125	270
497	Von Karman Avenue	Campus Drive to Martin	69.5	57	124	267
498	Von Karman Avenue	Dupont Drive to Michelson Drive	69.5	57	124	267
499	Walnut Avenue	Jeffrey Road to I-5 SB Off-Ramp	70.9	71	154	331
500	Walnut Avenue	Myford Road to Jamboree Road SB Off-Ramp	69.1	54	117	251
501	Walnut Avenue	The Mall Street to Culver Drive	68.7	51	110	237
502	Walnut Avenue	Harvard Avenue to The Mall Street	68.7	51	110	237
503	Walnut Avenue	Franciscan Street to Ravenwood Street	68.4	49	105	225
504	Walnut Avenue	Ravenwood Street to Yale Avenue	68.4	49	105	225
505	Walnut Avenue	Culver Drive to Franciscan Street	68.3	48	104	223
506	Walnut Avenue	Peters Canyon Road to Harvard Avenue	67.9	61	131	283
507	Walnut Avenue	Jamboree Road NB Off-Ramp to Peters Canyon Road	67.8	59	128	276
508	Walnut Avenue	Yale Avenue to Kazan Street	67.1	40	86	186
509	Walnut Avenue	Wisteria to Jeffrey Road	67.1	40	86	185
510	Warner Avenue	Jamboree Road SB Off-ramp to Construction North	70.2	64	138	297
511	Warner Avenue	Construction North to Harvard Avenue	68.6	50	108	233
512	Warner Avenue	Harvard Avenue to Paseo Westpark	67.0	39	85	183
513	Warner Avenue	Santa Ynez to Culver Drive	66.0	34	73	157
514	Warner Avenue	Culver Drive to West Yale Loop	65.7	32	69	149
515	West Yale Loop	Alton Parkway to Blue Lake North	64.0	25	54	115
516	West Yale Loop	Eagle Run to Main Street	63.8	24	52	113
517	West Yale Loop	Thunder Run to Yale Avenue	63.9	24	53	113
518	West Yale Loop	Main Street to Timber Run	62.9	21	45	98
519	West Yale Loop	Yale Avenue to Shorebird	62.9	21	45	97
520	West Yale Loop	Warner Avenue to Stonecreek South	62.6	20	43	93
521	West Yale Loop	Barranca Parkway to Alton Parkway	62.4	20	42	91

Table 9

522	West Yale Loop	Stonecreek North to Warner Avenue	62.4	19	42	90
523	West Yale Loop	Birdsong to Barranca Parkway	62.3	19	41	89
524	Westwood	Yorktown to Bryan Avenue	63.6	14	30	65
525	Westwood	Bryan Avenue to Leaf	61.5	10	22	47
526	Yale Avenue	Deerfield Avenue to Winvale Avenue	68.6	30	65	141
527	Yale Avenue	Hicks Canyon Drive to Meadowood	67.3	25	54	116
528	Yale Avenue	Walnut Avenue to Roosevelt	71.0	46	100	216
529	Yale Avenue	Roosevelt to Trabuco Road	67.0	40	85	184
530	Yale Avenue	Irvine Center Drive to Deerfield Avenue	66.9	39	84	180
531	Yale Avenue	West Yale Loop to Irvine Center Drive	66.3	35	76	164
532	Yale Avenue	Winvale Avenue to Karen Ann Lane	65.7	32	69	149
533	Yale Avenue	Karen Ann Lane to Walnut Avenue	65.7	32	69	149
534	Yale Avenue	Trabuco Road to Southwood	65.6	32	68	147
535	Yale Avenue	Southwood to Bryan Avenue	65.4	31	67	144
536	Yale Avenue	Northwood to Irvine Boulevard	65.1	30	64	138
537	Yale Avenue	Bryan Avenue to Monticello	65.0	29	63	135
538	Yale Avenue	Irvine Boulevard to Park Place	64.3	26	56	120
539	Yale Avenue	University Drive to Royce	63.4	18	39	85
540	Yale Court	Arborwood to Portola Parkway	60.3	8	18	39

<sup>1</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest receiving land use.  
 "RW" = Location of the respective noise contour falls within the right-of-way of the road.

Table 10

Table 10: Preferred Cumulative Plan Conditions Noise Contours

ID	Road	Segment	CNEL at Nearest Receiving Land Use (dBA) <sup>1</sup>	Distance to Contour from Centerline (Feet)		
				70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Ada	Barranca Parway to Marine Way	70.8	42	91	196
2	Ada	Alton Parkway to Barranca Parkway	69.2	RW	119	257
3	Alton Parkway	Enterprise to I-5 NB Off-Ramp	73.9	152	328	707
4	Alton Parkway	I-5 NB Off-Ramp to Technology Drive West	74.5	160	345	743
5	Alton Parkway	East Yale Loop to Jeffrey Road	71.8	82	177	380
6	Alton Parkway	Gateway Boulevard to Enterprise	71.7	110	236	508
7	Alton Parkway	Jeffrey Road to Royal Oak	70.8	70	152	327
8	Alton Parkway	Daimler Street to Red Hill Avenue	70.6	69	149	320
9	Alton Parkway	Culver Drive to West Yale Loop	70.6	69	148	319
10	Alton Parkway	West Yale Loop to Lake Road	70.6	69	148	318
11	Alton Parkway	Technology Drive West to Ada	72.4	116	250	539
12	Alton Parkway	Creek Road to East Yale Loop	70.6	68	147	316
13	Alton Parkway	Red Hill Avenue to Von Karman Avenue	70.5	67	145	313
14	Alton Parkway	Lake Road to Creek Road	70.3	66	141	305
15	Alton Parkway	Telemetry to Banting	70.4	66	142	307
16	Alton Parkway	Irvine Boulevard to Commercentre	70.9	96	207	446
17	Alton Parkway	Jenner to Telemetry	70.3	65	141	303
18	Alton Parkway	Irvine Center Drive to Gateway Boulevard	71.0	98	210	453
19	Alton Parkway	Sand Canyon Avenue to Hospital	73.7	106	228	491
20	Alton Parkway	Laguna Canyon Road to Jenner	70.2	64	139	299
21	Alton Parkway	Technology Drive East to Barranca Pkwy/Muirlands Blvd	70.8	96	206	444
22	Alton Parkway	Royal Oak to Valley Oak Drive	70.0	63	135	291
23	Alton Parkway	Banting to Pacifica	69.9	RW	133	287
24	Alton Parkway	Barranca Pkwy/Muirlands Blvd to Jeronimo Road	70.3	88	190	409
25	Alton Parkway	Ada to Technology Drive East	70.3	88	191	411

Table 10

26	Alton Parkway	Von Karman Avenue to Jamboree Road	69.7	RW	128	275
27	Alton Parkway	Jeronimo Road to Hughes	70.0	84	181	390
28	Alton Parkway	Hughes to Morgan	69.8	RW	174	376
29	Alton Parkway	Morgan to Toledo Way	69.0	RW	156	336
30	Alton Parkway	San Marino to Culver Drive	69.1	RW	158	341
31	Alton Parkway	Jamboree Road to Murphy Avenue	69.1	RW	159	342
32	Alton Parkway	Hospital to Laguna Canyon Road	72.0	81	175	376
33	Alton Parkway	Valley Oak Drive to Sand Canyon Avenue	71.8	79	170	366
34	Alton Parkway	Murphy Avenue to Harvard Avenue	68.9	RW	154	332
35	Alton Parkway	Foster to Irvine Boulevard	68.7	RW	149	320
36	Alton Parkway	Fairbanks to Foster	68.5	RW	143	309
37	Alton Parkway	Toledo Way to Berteza	68.4	RW	142	306
38	Alton Parkway	Pacifica to Meridian	71.6	76	165	355
39	Alton Parkway	Berteza to Fairbanks	68.3	RW	140	301
40	Alton Parkway	Meridian to Irvine Center Drive	68.2	RW	137	295
41	Alton Parkway	Paseo Westpark to San Marino	68.2	RW	137	296
42	Alton Parkway	Harvard Avenue to Paseo Westpark	67.7	RW	127	273
43	Astor	Lynx to Fairbanks	67.0	RW	51	110
44	Astor	Cadence to Lynx	65.8	RW	43	92
45	Bake Parkway	I-5 NB Off-Ramp to Rockfield Boulevard	76.6	277	596	1284
46	Bake Parkway	Muirlands Boulevard to Jeronimo Road	72.9	132	284	612
47	Bake Parkway	Rockfield Boulevard to Muirlands Boulevard	75.0	217	468	1008
48	Bake Parkway	Jeronimo Road to Toledo Way	72.0	114	246	530
49	Bake Parkway	Toledo Way to Cromwell	71.7	108	233	503
50	Bake Parkway	Cromwell to Irvine Boulevard	71.6	108	232	500
51	Bake Parkway	Research Drive to I-5 SB Off-Ramp	69.6	RW	170	366
52	Bake Parkway	Irvine Center Drive to Research Drive	65.0	RW	84	181
53	Bake Parkway	Lake Forest Drive to Irvine Center Drive	63.7	RW	RW	148
54	Banting	Alton Parkway to Barranca Parkway	60.1	RW	RW	64
55	Barranca Parkway	Pacifica to Irvine Center Drive	73.1	101	217	467
56	Barranca Parkway	Banting to Pacifica	72.7	95	204	440

Table 10

57	Barranca Parkway	I-5 HOV Ramp to Technology Drive West	72.7	94	203	437
58	Barranca Parkway	Technology Drive West to Ada	72.6	93	201	433
59	Barranca Parkway	Irvine Center Drive to I-5 HOV Ramp	72.4	90	194	417
60	Barranca Parkway	Culver Drive to West Yale Loop	72.2	88	190	409
61	Barranca Parkway	East Yale Loop to Jeffrey Road	72.1	87	187	402
62	Barranca Parkway	West Yale Loop to Lake Road	72.0	85	184	396
63	Barranca Parkway	Ada to Alton Parkway	72.0	86	184	397
64	Barranca Parkway	Lake Road to Creek Road	71.7	82	176	378
65	Barranca Parkway	Red Hill Avenue to Armstrong Avenue	74.7	206	444	957
66	Barranca Parkway	Discovery/Herchel to Banting	71.6	80	172	371
67	Barranca Parkway	Lyon to East Yale Loop	71.5	78	169	364
68	Barranca Parkway	Creek Road to Lyon	71.4	78	167	360
69	Barranca Parkway	Von Karman Avenue to Jamboree Road	72.7	121	261	561
70	Barranca Parkway	Sand Canyon Avenue to Laguna Canyon Road	70.8	71	153	329
71	Barranca Parkway	Armstrong Avenue to Von Karman Avenue	72.4	116	249	537
72	Barranca Parkway	Valley Oak Drive to Sand Canyon Avenue	70.7	70	150	323
73	Barranca Parkway	Jamboree Road to Construction Circle	71.1	99	213	459
74	Barranca Parkway	Santa Rosa to Culver Drive	71.0	97	210	452
75	Barranca Parkway	FedEx to Discovery/Herchel	70.3	65	140	302
76	Barranca Parkway	Jeffrey Road to Valley Oak Drive	70.3	65	140	302
77	Barranca Parkway	Laguna Canyon Road to FedEx	70.1	64	138	297
78	Barranca Parkway	Pullman Street to Red Hill Avenue	73.6	173	373	804
79	Barranca Parkway	Construction Circle to Fire Station	70.5	91	195	420
80	Barranca Parkway	Fire Station to Harvard Avenue	70.5	91	195	420
81	Barranca Parkway	Paseo Westpark to Santa Rosa	70.5	91	197	423
82	Barranca Parkway	Harvard Avenue to Paseo Westpark	70.2	87	186	402
83	Bay Tree	Trabuco Road to Roosevelt	57.2	RW	RW	RW
84	Beacon	Ridge Valley to Benchmark	59.7	RW	RW	RW
85	Benchmark (LN Street)	Ridge Valley (O Street) to Bosque	56.5	RW	RW	RW
86	Bison Avenue	SR-73 NB Off-Ramp to California Avenue	69.7	RW	129	277
87	Bonita Canyon Drive	MacArthur Boulevard to SR-73	70.3	78	169	363

Table 10

88	Bonita Canyon Drive	Turtle Ridge to Shady Canyon Drive	68.6	RW	130	279
89	Bonita Canyon Drive	Newport Coast Drive to Turtle Ridge	68.2	RW	123	264
90	Bonita Canyon Drive	SR-73 NB Off-Ramp to Newport Coast Drive	68.0	RW	119	256
91	Bosque	Cadence to Great Park Boulevard	65.2	RW	39	83
92	Bosque	Irvine Boulevard to Benchmark (LN Street)	63.5	RW	RW	64
93	Bosque	Benchmark to Cadence	63.1	RW	RW	60
94	Bosque	Great Park Boulevard to Beacon	56.7	RW	RW	RW
95	Bosque	Beacon to S 5th Street	56.1	RW	RW	RW
96	Bryan Avenue	Jamboree Road to Market Place	69.0	RW	115	249
97	Bryan Avenue	Market Place to El Camino Real	68.9	RW	114	245
98	Bryan Avenue	Rubicon to Culver Drive	68.9	RW	114	245
99	Bryan Avenue	El Camino Real to Rubicon	68.9	RW	113	243
100	Bryan Avenue	Eastwood to Jeffrey Road	67.0	RW	85	183
101	Bryan Avenue	Westwood to Yale Avenue	66.7	RW	81	174
102	Bryan Avenue	Culver Drive to Westwood	66.6	RW	80	172
103	Bryan Avenue	Yale Avenue to Eastwood	66.5	RW	79	170
104	Cadence	Pusan to Chinon	65.6	RW	41	89
105	Cadence	Bosque to Pusan	65.3	RW	39	85
106	Cadence	Ridge Valley (O Street) to Bosque	63.9	RW	RW	68
107	Cadence	Chinon to Merit	62.2	RW	RW	53
108	Cadence	Merit to Astor	59.4	RW	RW	RW
109	California Avenue	University Drive to Academy Way	67.2	RW	88	190
110	California Avenue	Campus Drive to Harvard Avenue	64.2	RW	RW	119
111	California Avenue	Theory to Bison Avenue	64.0	RW	RW	115
112	Campus Drive	Carlson Avenue to University Drive	73.3	83	178	384
113	Campus Drive	University Drive to Bridge Road	71.7	82	176	378
114	Campus Drive	Jamboree Road to Carlson Avenue	71.5	79	171	367
115	Campus Drive	Stanford Court to Berkeley Avenue	71.0	73	158	341
116	Campus Drive	California Avenue to Culver Drive	70.9	72	154	333
117	Campus Drive	Berkeley Avenue to Cornell	69.9	RW	133	286
118	Campus Drive	Martin to Von Karman Avenue	69.1	RW	118	254

Table 10

119	Campus Drive	Culver Drive to Paseo Montoya (Turtle Rock Drive)	68.7	RW	110	237
120	Campus Drive	Von Karman Avenue to Teller Avenue	68.5	RW	106	229
121	Campus Drive	MacArthur Boulevard to Martin	68.3	RW	103	222
122	Campus Drive	Teller Avenue to Jamboree Road	67.5	RW	92	199
123	Carlson Avenue	Michelson Drive to Campus Drive	67.9	RW	98	211
124	Chinon	Irvine Boulevard to Cadence	59.0	RW	RW	RW
125	Creek Road	Alton Parkway to Barranca Parkway	56.2	RW	RW	RW
126	Culver Drive	Michelson Drive to I-405 SB Off-Ramp	73.9	154	331	713
127	Culver Drive	I-405 SB Off-Ramp to I-405 NB Off Ramp	73.8	152	327	704
128	Culver Drive	I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)	73.9	153	331	712
129	Culver Drive	Scottsdale Drive to I-5 SB Off- Ramp	73.9	152	327	704
130	Culver Drive	I-405 NB Off-Ramp to San Leandro	73.6	146	315	679
131	Culver Drive	San Leandro to Main Street	73.3	140	302	650
132	Culver Drive	Harvard Avenue to University Drive	73.3	140	302	651
133	Culver Drive	Trabuco Road to Farwell Avenue	74.2	153	330	711
134	Culver Drive	Alton Parkway to Barranca Parkway	73.2	137	296	637
135	Culver Drive	Main Street to Alton Parkway	73.1	135	290	625
136	Culver Drive	Warner Avenue to Irvine Center Drive	73.0	133	286	617
137	Culver Drive	Walnut Avenue to Scottsdale Dive	72.9	131	282	608
138	Culver Drive	Barranca Parkway to Warner Avenue	72.9	131	281	606
139	Culver Drive	Shady Canyon Drive to Palo Verde	72.0	85	182	393
140	Culver Drive	Deerfield Avenue to Walnut Avenue	72.5	124	267	576
141	Culver Drive	Sandburg Way to Michelson Drive	72.5	124	266	574
142	Culver Drive	Irvine Center Drive to Deerfield Avenue	72.4	122	263	567
143	Culver Drive	Palo Verde to Campus Drive	71.6	80	172	370
144	Culver Drive	University Drive to Sandburg Way	72.2	117	253	545
145	Culver Drive	Farwell Avenue to Bryan Avenue	73.2	131	281	606
146	Culver Drive	Campus Drive to High School	72.1	116	250	539
147	Culver Drive	High School to Harvard Avenue	72.0	115	247	532
148	Culver Drive	Bryan Avenue to Florence	71.8	111	238	513
149	Culver Drive	Portola Parkway to Settlers	71.2	75	161	348

Table 10

150	Culver Drive	Florence to Irvine Boulevard	71.7	109	235	506
151	Culver Drive	Irvine Boulevard to Viewpark	70.5	91	196	423
152	Culver Drive	Viewpark to Meadowood	70.4	89	192	414
153	Culver Drive	Settlers to Furrow	68.5	RW	107	230
154	Culver Drive	Meadowood to Portola Parkway	69.0	RW	155	333
155	Discovery Drive	Irvine Center Drive to Laguna Canyon Road	64.0	RW	RW	115
156	Discovery Drive	Waterworks Way to Irvine Center Drive	61.2	RW	RW	76
157	East Yale Loop	Alton Parkway to Witherspoon	65.5	RW	68	146
158	East Yale Loop	Osborn Street to Barranca Parkway	65.3	RW	65	141
159	East Yale Loop	Yale Avenue to Springbrook South	64.9	RW	RW	132
160	East Yale Loop	Springbrook North to Alton Parkway	63.6	RW	RW	108
161	East Yale Loop	Woodspring to Yale Avenue	62.7	RW	RW	95
162	East Yale Loop	Barranca Parkway to Eastshore	62.4	RW	RW	91
163	Eastwood	Bryan Avenue to Monticello	60.8	RW	RW	42
164	Eastwood	Columbus to Bryan Avenue	58.8	RW	RW	RW
165	El Camino Real	Jamboree Road to Alliance (SR-261 Bridge)	67.1	RW	87	187
166	El Camino Real North	El Camino Real to Bryan Avenue	62.4	RW	RW	90
167	Fairbanks	Alton Parkway to Astor	69.8	RW	78	168
168	Fairbanks	Irvine Boulevard to Alton Parkway	66.9	RW	50	109
169	Fairchild Road	MacArthur Boulevard to Jamboree Road	64.0	RW	RW	116
170	Gateway Boulevard	Alton Parkway to Irvine Center Drive	63.3	RW	RW	103
171	Gateway Boulevard	Spectrum Center Drive (Fortune Drive) to Alton Parkway	62.1	RW	RW	86
172	Gateway Boulevard	Irvine Center Drive to Meridian	59.2	RW	RW	RW
173	Great Park Boulevard	Sand Canyon to Ridge Valley	74.5	119	257	553
174	Great Park Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	70.2	65	139	300
175	Great Park Boulevard (EB)	Bosque to Skyhawk	68.9	RW	68	146
176	Great Park Boulevard (WB)	Bosque to Skyhawk	68.3	RW	62	135
177	Harvard Avenue	University Drive to Michelson Drive	72.0	51	110	238
178	Harvard Avenue	Michelson Drive to Coronado	70.5	67	145	312
179	Harvard Avenue	San Marino to Alton Parkway	70.2	65	139	300
180	Harvard Avenue	Coronado to Main Street	70.2	64	138	298



Table 10

181	Harvard Avenue	San Carlo to San Marino	70.1	64	137	295
182	Harvard Avenue	Main Street to San Carlo	70.0	63	135	291
183	Harvard Avenue	Alton Parkway to San Leon	68.6	RW	109	234
184	Harvard Avenue	San Juan to Barranca Parkway	68.7	RW	110	237
185	Harvard Avenue	San Leon to San Juan	68.6	RW	108	233
186	Harvard Avenue	Irvine Center Drive to Deerfield Avenue	67.4	RW	91	195
187	Harvard Avenue	Deerfield Avenue to Poplar Street	67.4	RW	90	193
188	Harvard Avenue	Barranca Parkway to Warner Avenue	67.9	RW	97	210
189	Harvard Avenue	Bridge Road to University Drive	67.8	RW	96	206
190	Harvard Avenue	Paseo Westpark to Irvine Center Drive	67.8	RW	96	207
191	Harvard Avenue	Poplar Street to Walnut Avenue	68.8	RW	89	192
192	Harvard Avenue	California Avenue to Berkeley Avenue	67.2	RW	88	190
193	Harvard Avenue	Culver Drive to California Avenue	67.2	RW	87	188
194	Harvard Avenue	Berkeley to Bridge Road	67.1	RW	87	187
195	Harvard Avenue	Warner Avenue to Paseo Westpark	66.8	RW	82	177
196	Hicks Canyon Drive	Delamesa to Yale Avenue	58.2	RW	RW	RW
197	Hornet (5th St)	Ridge Valley (O Street) to Bosque	57.6	RW	RW	RW
198	Hubble	Irvine Center Drive to Bunsen	56.1	RW	RW	RW
199	Irvine Boulevard	SR-133 NB Off- Ramp to Ridge Valley (O Street)	72.3	120	258	557
200	Irvine Boulevard	SR-133 SB Off-Ramp to SR-133 NB Off-Ramp	72.1	116	250	540
201	Irvine Boulevard	Sand Canyon to SR-133 SB Off-Ramp	73.1	128	277	596
202	Irvine Boulevard	Merit to Alton	71.6	108	232	500
203	Irvine Boulevard	Journey to Sand Canyon Avenue	71.7	109	234	505
204	Irvine Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	71.1	99	213	459
205	Irvine Boulevard	Pusan Way to Chinon (B Street)	71.0	98	211	455
206	Irvine Boulevard	Palo Lado to Yale Avenue	71.2	101	217	467
207	Irvine Boulevard	Culver Drive to Palo Lado	71.1	100	216	464
208	Irvine Boulevard	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	71.0	98	211	455
209	Irvine Boulevard	Old Myford Road to Market Place	71.0	98	212	457
210	Irvine Boulevard	Bosque (LY Street) to Modjeska	71.0	97	210	452
211	Irvine Boulevard	Jamboree Road to Old Myford Road	70.9	97	209	451

Table 10

212	Irvine Boulevard	Market Place to SR-261 SB Off-Ramp	70.9	97	209	449
213	Irvine Boulevard	Jeffrey Road to Groveland	71.0	97	210	452
214	Irvine Boulevard	Bake Parkway to Lake Forest Drive	70.7	93	200	431
215	Irvine Boulevard	Independence Way (The Groves)/The Groves to Jeffrey Road	70.6	93	200	431
216	Irvine Boulevard	Chinon (B Street) to Merit	70.5	90	194	418
217	Irvine Boulevard	SR-261 NB Off-Ramp to Central Park	70.5	91	196	423
218	Irvine Boulevard	Pueblo Norte to Independence Way (The Groves)/ Parkwood	70.4	90	193	416
219	Irvine Boulevard	Yale Avenue to Pueblo Norte	70.4	89	192	414
220	Irvine Boulevard	Modjeska to Pusan Way	70.2	87	188	404
221	Irvine Boulevard	Central Park Avenue to Culver Drive	69.9	RW	179	386
222	Irvine Boulevard	Parker to Bake Parkway	69.7	RW	172	370
223	Irvine Boulevard	Alton Parkway to Fairbanks	68.6	RW	146	315
224	Irvine Center Drive	Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp	72.7	121	260	559
225	Irvine Center Drive	Orange Tree to Valley Oak Drive	71.9	112	241	519
226	Irvine Center Drive	I-405 SB Off-Ramp to Research	72.3	113	244	525
227	Irvine Center Drive	Irvine Valley College to Orange Tree	71.8	110	237	511
228	Irvine Center Drive	Fontaine Avenue to Jeffrey Road	71.5	107	229	494
229	Irvine Center Drive	Culver Drive to Deerwood	71.5	106	227	490
230	Irvine Center Drive	Deerwood to Yale Avenue	71.4	105	226	486
231	Irvine Center Drive	Yale Avenue to Fontaine Avenue	71.5	105	227	489
232	Irvine Center Drive	Jeffrey Road to Irvine Valley College	71.4	104	223	481
233	Irvine Center Drive	Alton Parkway to Spectrum	71.1	99	213	459
234	Irvine Center Drive	Spectrum to Pacifica	71.0	98	211	455
235	Irvine Center Drive	Hearthstone to Culver Drive	70.9	96	208	448
236	Irvine Center Drive	Charter to Barranca Parkway	70.7	93	201	433
237	Irvine Center Drive	Jamboree Road to Harvard Avenue	70.5	91	195	420
238	Irvine Center Drive	Pacifica to Entertainment (Enterprise/Fortune)	70.6	91	197	424
239	Irvine Center Drive	Valley Oak Drive to Sand Canyon Avenue	70.5	91	196	422
240	Irvine Center Drive	Harvard Avenue to Hearthstone	70.2	87	187	403
241	Irvine Center Drive	Research to Hubble	70.0	84	181	389
242	Irvine Center Drive	Barranca Parkway to Gateway Boulevard	69.9	RW	177	382

Table 10

243	Irvine Center Drive	Bake Parkway to Muller	69.9	RW	177	381
244	Irvine Center Drive	Discovery to Charter	69.9	RW	178	383
245	Irvine Center Drive	Hubble to Bake Parkway	69.6	RW	170	366
246	Irvine Center Drive	Muller to Tesla	69.4	RW	165	355
247	Irvine Center Drive	Sand Canyon Avenue to Odyssey	69.2	RW	160	344
248	Irvine Center Drive	Tesla to Scientific Way	69.1	RW	158	339
249	Irvine Center Drive	Scientific Way to Lake Forest Drive	68.9	RW	153	329
250	Irvine Center Drive	Gateway Boulevard to Alton Parkway	68.7	RW	148	319
251	Irvine Center Drive	Laguna Canyon Road to Discovery	68.7	RW	147	317
252	Irvine Center Drive	Odyssey to Laguna Canyon Road	68.6	RW	146	314
253	Irvine Center Drive (Edinger)	Redhill Avenue to Jamboree Road	70.9	97	209	451
254	Jamboree Road	I-5 SB Off-Ramp to I-5 NB Off-Ramp	74.5	168	362	780
255	Jamboree Road	I-405 SB Off-Ramp to I-405 NB Off Ramp	75.6	189	408	878
256	Jamboree Road	Walnut Avenue to Michelle Drive	73.9	153	329	708
257	Jamboree Road	I-405 NB Off-Ramp to Main Street	77.0	292	630	1357
258	Jamboree Road	Michelle Drive to I-5 SB Off-Ramp	73.7	148	319	687
259	Jamboree Road	Main Street to Kelvin Avenue	76.4	266	573	1234
260	Jamboree Road	Michelson Drive to I-405 SB Off-Ramp	74.3	214	462	996
261	Jamboree Road	Kelvin Avenue to McGaw Avenue	76.0	253	545	1174
262	Jamboree Road	McGaw Avenue to Alton Parkway	76.0	252	542	1168
263	Jamboree Road	Birch Street to Campus Drive	73.0	132	285	615
264	Jamboree Road	Dupont Drive to Michelson Drive	73.9	145	312	672
265	Jamboree Road	Alton Parkway to Beckman	75.6	237	510	1099
266	Jamboree Road	Fairchild Road to Birch Street	73.5	137	294	634
267	Jamboree Road	Beckman to Barranca Parkway	75.3	226	487	1049
268	Jamboree Road	I-5 NB Off-Ramp to El Camino Real	75.1	218	470	1013
269	Jamboree Road	Campus Drive to Dupont Drive	73.1	129	279	601
270	Jamboree Road	El Camino Real to West Drive	74.9	214	460	992
271	Jamboree Road	West Drive to Bryan Avenue	75.0	214	461	994
272	Jamboree Road	Bryan Avenue to Irvine Boulevard	74.6	203	438	944
273	Jamboree Road	Koll Center to Fairchild Road	72.7	122	263	566

Table 10

274	Jamboree Road	MacArthur Boulevard to Koll Center	72.7	120	259	559
275	Jamboree Road	Irvine Boulevard to Portola Parkway	70.7	94	202	436
276	Jamboree Road	Warner Avenue to Edinger Avenue	79.1	261	562	1210
277	Jamboree Road	Barranca Parkway to Warner Avenue	78.3	230	495	1067
278	Jamboree Road	Edinger Avenue to Walnut Avenue	78.0	218	469	1012
279	Jeffrey Road	Walnut Avenue to I-5 NB Off-Ramp	71.4	104	223	481
280	Jeffrey Road	I-5 NB Off-Ramp to Roosevelt	72.3	114	245	527
281	Jeffrey Road	Poplar (Meadows) to Walnut Avenue	70.9	97	209	449
282	Jeffrey Road	Alton Parkway to Barranca Parkway	70.8	95	205	442
283	Jeffrey Road	Irvine Center Drive to Poplar (Meadows)	70.7	94	203	436
284	Jeffrey Road	I-405 NB Off-Ramp to Quail Creek	70.8	95	204	439
285	Jeffrey Road	Barranca Parkway to Irvine Valley College	70.6	92	199	429
286	Jeffrey Road	Quail Creek to Alton Parkway	70.7	93	200	431
287	Jeffrey Road	Irvine Valley College to Irvine Center Drive	70.4	89	192	413
288	Jeffrey Road	Trabuco Road to Hideaway	69.7	RW	172	372
289	Jeffrey Road	Hideaway to Bryan Avenue	69.7	RW	172	371
290	Jeffrey Road	Roosevelt to Grove	70.4	85	182	393
291	Jeffrey Road	Grove to Trabuco Road	70.2	83	178	384
292	Jeffrey Road	Bryan Avenue to Irvine Boulevard	68.5	RW	145	312
293	Jeffrey Road	Encore to Portola Parkway	65.6	RW	92	197
294	Jeffrey Road	Irvine Boulevard to Encore	65.4	RW	89	192
295	Jeronimo Road	Goodyear to Bake Parkway	64.5	RW	RW	125
296	Jeronimo Road	Alton Parkway to Goodyear	64.3	RW	RW	120
297	Laguna Canyon Road	Old Laguna Canyon Road to Lake Forest Drive	73.4	141	305	656
298	Laguna Canyon Road	Laguna Canyon Freeway to Quail Hill Parkway	70.0	RW	134	289
299	Laguna Canyon Road	Discovery to Sand Canyon Avenue	69.1	RW	118	255
300	Laguna Canyon Road	I-405 Overcrossing to Pasteur	68.0	RW	79	170
301	Laguna Canyon Road	Irvine Center Drive to Discovery	67.5	RW	92	198
302	Laguna Canyon Road	Quail Hill Parkway to I-405 Overcrossing	68.0	RW	79	170
303	Laguna Canyon Road	Pasteur to Alton Parkway	67.0	RW	85	183
304	Laguna Canyon Road	Waterworks to Irvine Center Drive	66.4	RW	77	167

Table 10

305	Laguna Canyon Road	Alton Parkway to Barranca Parkway	66.1	RW	74	160
306	Laguna Canyon Road	Barranca Parkway to Waterworks	65.6	RW	68	148
307	Lake Forest Drive	Hidden Canyon to Laguna Canyon Road	69.5	RW	125	269
308	Lake Forest Drive	Bake Parkway to Hidden Canyon (Romano)	69.5	RW	124	267
309	Lake Forest Drive	Tesla to Bake Parkway	66.6	RW	107	231
310	Lake Road	Alton Parkway to Barranca Parkway	59.2	RW	RW	RW
311	Lynx	Irvine Boulevard to Astor	53.2	RW	RW	RW
312	MacArthur Boulevard	I-405 SB Off-Ramp to Michelson Drive	76.7	281	606	1305
313	MacArthur Boulevard	Main Street to I-405 NB Off-Ramp	76.7	278	599	1291
314	MacArthur Boulevard	I-405 NB Off-Ramp and I-405 SB Off-Ramp	76.6	275	593	1278
315	MacArthur Boulevard	Jamboree Road to Fairchild Road	69.9	RW	178	382
316	MacArthur Boulevard	Fairchild Road to University Drive	69.8	RW	176	380
317	MacArthur Boulevard	Fitch to Red Hill Avenue	70.5	86	185	399
318	MacArthur Boulevard	Michelson Drive to Douglas	72.2	141	303	652
319	MacArthur Boulevard	Douglas to Campus Drive	72.2	140	302	650
320	MacArthur Boulevard	Skypark to Main Street	69.5	RW	160	344
321	MacArthur Boulevard	Redhill Avenue to Skypark	68.4	RW	141	303
322	MacArthur Boulevard	Birch Street to Jamboree Road	67.1	RW	117	251
323	MacArthur Boulevard	Campus Drive to Birch Street	69.4	RW	198	427
324	Main Street	Gillette Avenue to Von Karman Avenue	70.8	90	195	420
325	Main Street	MacArthur Boulevard to Mercantile	70.3	83	179	386
326	Main Street	Executive Park to MacArthur Boulevard	68.4	RW	142	305
327	Main Street	Von Karman Avenue to Cartwright	68.4	RW	141	304
328	Main Street	McDurmott to Red Hill Avenue	68.1	RW	135	290
329	Main Street	Red Hill Avenue to Executive Circle	68.0	RW	133	286
330	Main Street	Jamboree Road to Union	67.8	RW	129	279
331	Main Street	Culver Drive to West Yale Loop	67.2	RW	87	188
332	Main Street	Siglo to Jamboree Road	67.7	RW	127	273
333	Main Street	Veneto to Harvard Avenue	67.5	RW	124	267
334	Main Street	Paseo Westpark to Culver Drive	66.3	RW	77	166
335	Main Street	Harvard Avenue to San Mateo	66.3	RW	76	164

Table 10

336	Marine Way	Sand Canyon Avenue to Ridge Valley (O Street)	72.3	71	153	330
337	Marine Way	Alton Parkway to Bake Parkway	69.3	RW	121	261
338	Marine Way	Lynx to Barranca Parkway	69.3	RW	122	262
339	Marine Way	County Access to Treble	68.4	RW	106	228
340	Marine Way	Ridge Valley (O Street) to Skyhawk	68.2	RW	102	220
341	Marine Way	Skyhawk to County Access	67.2	RW	87	187
342	Marine Way	Barranca Parkway to Alton Parkway	66.8	RW	82	177
343	Marine Way	Treble to Lynx	66.4	RW	78	168
344	McGaw Avenue	Von Karman Avenue to Jamboree Road	64.3	RW	RW	121
345	McGaw Avenue	Red Hill Avenue to Von Karman Avenue	64.2	RW	RW	119
346	McGaw Avenue	Daimler to Red Hill Avenue	62.5	RW	RW	91
347	McGaw Avenue	Jamboree Road to Murphy Avenue	59.4	RW	RW	RW
348	Meadowood	Culver Drive to Canyonwood	59.8	RW	RW	RW
349	Meridian	Spectrum to Alton Parkway	55.5	RW	RW	RW
350	Meridian	Alton Parkway to Gateway Boulevard	54.7	RW	RW	RW
351	Merit	Irvine Boulevard to Cadence	58.0	RW	RW	RW
352	Michelson Drive	Riparian to Harvard Avenue	68.3	RW	103	222
353	Michelson Drive	Almond Tree Lane to Yale Avenue	67.1	RW	52	112
354	Michelson Drive	Von Karman Avenue to Obsidian	68.0	RW	99	214
355	Michelson Drive	Parkside to Culver Drive	67.8	RW	96	206
356	Michelson Drive	Gillman to Seton/Sandburg Way	66.8	RW	49	106
357	Michelson Drive	Carlson to Prince	67.3	RW	107	230
358	Michelson Drive	MacArthur Boulevard to Dupont Drive	67.3	RW	90	193
359	Michelson Drive	Harvard Avenue to Parkside	66.8	RW	83	178
360	Michelson Drive	Bixby to Von Karman Avenue	66.7	RW	81	175
361	Michelson Drive	Jamboree Road to Carlson	69.6	RW	122	262
362	Michelson Drive	Teller to Jamboree Road	69.6	RW	122	264
363	Michelson Drive	Jordan East to University Drive	66.9	RW	40	87
364	Michelson Drive	Culver Drive to Angell	66.2	RW	48	104
365	Modjeska (A Street)	Portola Springs to Irvine Boulevard	71.7	39	84	182
366	Modjeska (A Street)	South of Irvine Boulevard	61.0	RW	RW	44

Table 10

367	Muirlands Boulevard	Bake Parkway to City Limits	67.2	RW	88	190
368	Muirlands Boulevard	Alton Parkway to Sterling	66.3	RW	76	165
369	Muirlands Boulevard	Wrigley to Bake Parkway	66.3	RW	76	165
370	Newport Coast Drive	SR-73 NB Off-Ramp to Turtle Ridge	66.6	RW	80	173
371	Newport Coast Drive	Turtle Crest to Bonita Canyon Drive	65.1	RW	63	137
372	Nightmist	Sand Canyon Avenue to Tulip (Road C)	61.8	RW	RW	83
373	Northwood	Yale Avenue to Savannah	62.5	RW	RW	55
374	Northwood	Goldrush to Yale Avenue	61.5	RW	RW	47
375	Oak Canyon Drive	Valley Oak Drive to Sand Canyon Avenue	69.2	RW	72	155
376	Pacifica	Gateway to Barranca Parkway	65.2	RW	65	140
377	Pacifica	Alton Parkway to Gateway	64.0	RW	RW	116
378	Pacifica	Irvine Center Drive to Fortune Drive (Spectrum Center Drive)	62.8	RW	RW	95
379	Pacifica	Meridian to Alton Parkway	60.8	RW	RW	70
380	Park Place	Christamon South to Yale Avenue	57.0	RW	RW	RW
381	Portola Parkway	Bee Canyon Access Road to Sand Canyon Avenue	71.7	81	174	375
382	Portola Parkway	Jeffrey Road to Bee Canyon Access Road	71.7	81	174	374
383	Portola Parkway	Arrowhead to Ridge Valley Parkway	71.5	78	169	363
384	Portola Parkway	Sand Canyon Avenue to Arrowhead	71.1	74	159	343
385	Portola Parkway	Portola Springs to SR-241 SB Off-Ramp	70.1	64	137	296
386	Portola Parkway	Gatepark to Culver Drive	70.7	94	202	436
387	Portola Parkway	ETC-6 (SR-261) NB Off-Ramp to Gatepark	70.7	93	200	432
388	Portola Parkway	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.5	91	196	423
389	Portola Parkway	Jamboree Road to Bellevue	70.5	91	195	420
390	Portola Parkway	Bellevue to ETC-6 (SR-261) SB Off-Ramp	70.4	90	194	418
391	Portola Parkway	Yale Avenue to Jeffrey Road	70.2	87	187	404
392	Portola Parkway	Culver Drive to Yale Avenue	69.7	RW	172	371
393	Portola Parkway	Silverado to Portola Springs	68.6	RW	109	235
394	Pusan	Irvine Boulevard to Cadence	56.1	RW	RW	RW
395	Quail Hill Parkway	Shady Canyon Drive to Passage	67.4	RW	91	196
396	Quail Hill Parkway	East Knollcrest to Laguna Canyon Road	65.5	RW	67	145
397	Quassar Drive (Spectrum)	Irvine Center Drive to Spectrum Center Drive (Fortune)	54.9	RW	RW	RW

Table 10

398	Red Hill Avenue	MacArthur Boulevard to McGaw Avenue	71.6	107	230	496
399	Red Hill Avenue	I-405 Over Crossing to Main Street	70.2	64	139	299
400	Red Hill Avenue	Alton Parkway to Deere Avenue	70.1	85	184	397
401	Red Hill Avenue	McGaw Avenue to Alton Parkway	70.0	84	181	391
402	Red Hill Avenue	Deere Avenue to Barranca Parkway	69.9	RW	177	382
403	Red Hill Avenue	Skypark East to MacArthur Boulevard	71.4	74	160	345
404	Red Hill Avenue	Main Street to Skypark East	70.8	67	145	313
405	Research Drive	Hubble to Bake Parkway	69.5	RW	125	270
406	Research Drive	Scientific to Lake Forest Drive	67.8	RW	96	207
407	Research Drive	Bake Parkway to Muller	66.7	RW	82	176
408	Research Drive	Irvine Center Drive to Bunsen	65.7	RW	69	149
409	Ridge Valley (O Street)	Irvine Boulevard to Trabuco Road (Great Park Boulevard)	67.3	RW	89	191
410	Ridge Valley (O Street)	Portola Parkway to Irvine Boulevard	66.4	RW	78	168
411	Ridge Valley (O Street)	Trabuco Road (Great Park Boulevard) to Marine Way	66.0	RW	73	157
412	Ridge Valley (O Street)	Ranchland to Portola Parkway	58.1	RW	RW	RW
413	Ridgeline Drive	Concordia East to University Drive	68.7	RW	71	153
414	Ridgeline Drive	Turtle Rock Drive to San Simeon	68.4	RW	67	145
415	Rockfield Avenue	Whatney to McLaren	67.7	RW	95	204
416	Rockfield Avenue	Bake Parkway to Whatney	64.2	RW	RW	119
417	Rockfield Avenue	Thomas to Bake Parkway	63.1	RW	RW	100
418	Roosevelt	Jeffrey Road to Vision	66.6	RW	80	173
419	Roosevelt	Yale Avenue to Van Buren	68.2	RW	49	106
420	Roosevelt	Vision to Bay Tree	66.4	RW	78	167
421	Roosevelt	Nimitz to Jeffrey Road	65.9	RW	72	155
422	Roosevelt	Tulip (Road C) to Sand Canyon Avenue	65.7	RW	70	151
423	Royal Oak	Alton Parkway to Eaglecreek	64.0	RW	RW	56
424	Sand Canyon Avenue	Oak Canyon Drive to Burt Road	72.1	116	250	539
425	Sand Canyon Avenue	Irvine Center Drive to Oak Canyon Drive	72.0	114	247	531
426	Sand Canyon Avenue	I-405 NB Off-Ramp to Alton Parkway	74.6	122	262	564
427	Sand Canyon Avenue	Burt Road to I-5 SB Off-Ramp	72.7	122	262	565
428	Sand Canyon Avenue	Marine to I-5 NB Off-Ramp	74.8	208	448	965



Table 10

429	Sand Canyon Avenue	Trabuco Road to Towngate	71.3	102	220	473
430	Sand Canyon Avenue	Barranca Parkway to Waterworks	70.9	96	207	447
431	Sand Canyon Avenue	I-5 SB Off-Ramp to Marine	74.0	184	396	854
432	Sand Canyon Avenue	Hospital to Barranca Parkway	70.6	92	199	429
433	Sand Canyon Avenue	Nightmist to Roosevelt	73.5	171	369	794
434	Sand Canyon Avenue	I-405 SB Off-Ramp to I-405 NB Off-Ramp	73.5	103	222	479
435	Sand Canyon Avenue	I-5 NB Off-Ramp to Nightmist	73.7	177	382	824
436	Sand Canyon Avenue	Towngate to Irvine Boulevard	70.7	93	201	433
437	Sand Canyon Avenue	Waterworks to Irvine Center Drive	70.3	88	189	408
438	Sand Canyon Avenue	Irvine Boulevard to Portola Parkway	70.4	66	142	306
439	Sand Canyon Avenue	Roosevelt to Trabuco Road	72.8	153	331	712
440	Sand Canyon Avenue	Alton Parkway to Hospital	70.6	88	190	410
441	Sand Canyon/Shady Canyon	Quail Hill Parkway to I-405 SB Ramps	71.8	79	170	366
442	Scientific Way	Irvine Center Drive to Wald	54.9	RW	RW	RW
443	Shady Canyon Drive	Culver Drive/Bonita Canyon Drive to Cloverfield	69.2	RW	72	154
444	Shady Canyon Drive	Bommer Canyon Road to Sunnyhill	67.6	RW	75	161
445	Skyhawk	Great Park Boulevard to Marine Way	59.6	13	27	59
446	Southwood	Yale Avenue to Colt	60.6	9	19	41
447	Southwood	Challenger to Yale Avenue	60.3	8	18	39
448	Spectrum Center Drive (Fortune Drive)	Pacifica to Quassar Drive (Spectrum )	62.0	18	39	85
449	Spectrum Center Drive (FortuneDrive)	Quassar Drive (Spectrum ) to Gatewayb	62.5	20	42	91
450	Sunnyhill	Shady Canyon Drive to Turtle Rock Drive	57.6	9	20	43
451	Technology Drive	Barranca Parkway to Alton Parkway	70.6	68	147	318
452	Technology Drive	Old Laguna Canyon Road to I-5/SR-133 Undercrossing	69.3	56	120	259
453	Technology Drive	I-5/SR-133 to Barranca Parkway	69.1	54	117	252
454	Technology Drive	Ada to Alton Parkway	63.1	22	47	100
455	Toledo Way	Bake Parkway to City Limits	65.7	32	70	151
456	Toledo Way	Goodyear to Bake Parkway	64.7	28	60	129
457	Toledo Way	Alton Parkway to Parker	64.4	26	57	122
458	Trabuco Road	Keystone to Sand Canyon Avenue	67.2	40	87	188
459	Trabuco Road	Jeffrey Road to Keystone	66.9	39	84	181

Table 10

460	Trabuco Road	Culver Drive to I-5 NB Off-Ramp	66.8	38	82	176
461	Trabuco Road	Monroe to Yale Avenue	66.7	38	81	176
462	Trabuco Road	I-5 NB Off-Ramp to Monroe	66.6	37	80	173
463	Trabuco Road	Yale Avenue to Remington	66.3	35	76	164
464	Trabuco Road	Remington to Jeffrey Road	66.1	34	74	158
465	Turtle Ridge Drive	Federation Way to Bonita Canyon	68.7	52	111	239
466	Turtle Rock Drive	Ridgeline to Willowleaf	67.8	27	58	125
467	Turtle Rock Drive	Silkwood to Sunnyhill	67.8	27	57	124
468	Turtle Rock Drive	Canyon Park to Ridgeline	67.0	24	51	109
469	Turtle Rock Drive	Sunnyhill to Southernwood	64.0	15	32	69
470	Turtle Rock Drive	Campus Drive to Hillgate	64.0	25	54	116
471	Turtle Rock Drive	Paseo Segovia to Campus Drive	65.4	20	43	92
472	University Drive	Golden Glow to Yale Avenue	73.0	99	213	458
473	University Drive	Ridgeline to Michelson Drive	72.6	111	240	517
474	University Drive	Culver Drive to Golden Glow	72.9	97	209	450
475	University Drive	Yale Avenue to Ridgeline	72.4	90	193	417
476	University Drive	Michelson Drive to I-405 SB Off-Ramp	72.7	127	274	591
477	University Drive	Mesa to Campus Drive	74.6	121	260	561
478	University Drive	MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	74.6	122	263	567
479	University Drive	California Avenue to Mesa	74.4	119	256	551
480	University Drive	Campus Drive to Harvard Avenue	70.7	94	203	437
481	University Drive	SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	71.7	65	140	301
482	University Drive	SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps	70.3	89	191	411
483	University Drive	San Joaquin to Culver Drive	69.8	81	176	378
484	University Drive	Harvard Avenue to San Joaquin	69.8	81	175	377
485	Valley Oak Drive	Hawkcreek to Barranca Parkway	68.0	46	98	212
486	Valley Oak Drive	Irvine Center Drive to Oak Canyon Drive	69.1	43	93	201
487	Valley Oak Drive	Barranca Parkway to Irvine Center Drive	66.8	38	83	178
488	Valley Oak Drive	Alton Parkway to Hawkcreek	64.8	28	61	131
489	Von Karman Avenue	Marriott to Morse Avenue	70.9	72	155	334
490	Von Karman Avenue	Michelson Drive to Quartz	70.8	70	151	326

Table 10

491	Von Karman Avenue	McGaw Avenue to Alton Parkway	70.7	70	150	324
492	Von Karman Avenue	Alton Parkway to Barranca Parkway	70.4	80	172	370
493	Von Karman Avenue	Main Street to Anchor	70.6	69	149	320
494	Von Karman Avenue	Anchor to McGaw Avenue	70.5	67	145	313
495	Von Karman Avenue	Morse to Main Street	70.2	65	140	301
496	Von Karman Avenue	Martin to Dupont Drive	69.6	59	126	272
497	Von Karman Avenue	Campus Drive to Martin	69.5	58	125	269
498	Von Karman Avenue	Dupont Drive to Michelson Drive	69.5	58	125	268
499	Walnut Avenue	Jeffrey Road to I-5 SB Off-Ramp	70.9	71	154	332
500	Walnut Avenue	Myford Road to Jamboree Road SB Off-Ramp	69.1	54	117	252
501	Walnut Avenue	The Mall Street to Culver Drive	68.8	52	111	240
502	Walnut Avenue	Harvard Avenue to The Mall Street	68.7	51	111	239
503	Walnut Avenue	Franciscan Street to Ravenwood Street	68.5	50	107	230
504	Walnut Avenue	Ravenwood Street to Yale Avenue	68.3	48	104	225
505	Walnut Avenue	Culver Drive to Franciscan Street	68.4	49	105	226
506	Walnut Avenue	Peters Canyon Road to Harvard Avenue	68.0	62	133	286
507	Walnut Avenue	Jamboree Road NB Off-Ramp to Peters Canyon Road	67.8	60	129	278
508	Walnut Avenue	Yale Avenue to Kazan Street	67.2	41	88	189
509	Walnut Avenue	Wisteria to Jeffrey Road	67.2	40	87	188
510	Warner Avenue	Jamboree Road SB Off-ramp to Construction North	70.1	64	137	295
511	Warner Avenue	Construction North to Harvard Avenue	68.5	50	107	231
512	Warner Avenue	Harvard Avenue to Paseo Westpark	67.0	39	85	182
513	Warner Avenue	Santa Ynez to Culver Drive	66.0	34	73	157
514	Warner Avenue	Culver Drive to West Yale Loop	65.7	32	70	150
515	West Yale Loop	Alton Parkway to Blue Lake North	64.0	25	54	116
516	West Yale Loop	Eagle Run to Main Street	63.9	24	52	113
517	West Yale Loop	Thunder Run to Yale Avenue	63.9	25	53	114
518	West Yale Loop	Main Street to Timber Run	62.8	21	45	96
519	West Yale Loop	Yale Avenue to Shorebird	63.0	21	46	100
520	West Yale Loop	Warner Avenue to Stonecreek South	62.6	20	43	93
521	West Yale Loop	Barranca Parkway to Alton Parkway	62.4	20	42	91

Table 10

522	West Yale Loop	Stonecreek North to Warner Avenue	62.5	20	42	91
523	West Yale Loop	Birdsong to Barranca Parkway	62.3	19	42	90
524	Westwood	Yorktown to Bryan Avenue	63.5	14	30	65
525	Westwood	Bryan Avenue to Leaf	61.5	10	22	47
526	Yale Avenue	Deerfield Avenue to Winvale Avenue	68.6	30	66	141
527	Yale Avenue	Hicks Canyon Drive to Meadowood	67.3	25	54	116
528	Yale Avenue	Walnut Avenue to Roosevelt	71.0	47	101	218
529	Yale Avenue	Roosevelt to Trabuco Road	67.1	40	86	185
530	Yale Avenue	Irvine Center Drive to Deerfield Avenue	66.9	39	84	180
531	Yale Avenue	West Yale Loop to Irvine Center Drive	66.4	36	77	166
532	Yale Avenue	Winvale Avenue to Karen Ann Lane	65.7	32	70	151
533	Yale Avenue	Karen Ann Lane to Walnut Avenue	65.7	32	70	151
534	Yale Avenue	Trabuco Road to Southwood	65.7	32	69	149
535	Yale Avenue	Southwood to Bryan Avenue	65.5	31	67	145
536	Yale Avenue	Northwood to Irvine Boulevard	65.1	30	64	138
537	Yale Avenue	Bryan Avenue to Monticello	65.0	29	63	135
538	Yale Avenue	Irvine Boulevard to Park Place	64.3	26	56	120
539	Yale Avenue	University Drive to Royce	63.5	18	40	85
540	Yale Court	Arborwood to Portola Parkway	60.3	9	18	40

<sup>1</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest receiving land use.  
 "RW" = Location of the respective noise contour falls within the right-of-way of the road.

Table 11

Table 11: Existing and Current General Plan Traffic Noise Level Increases

ID	Road	Segment	CNEL at Receiving Land Use (dBA) <sup>2</sup>			Incremental Noise Level Increase Threshold <sup>3</sup>	
			Existing	Current General Plan	Project Addition	Limit	Exceeded?
1	Ada	Barranca Parway to Marine Way	0.0	0.0	0.0	5.0	No
2	Ada	Alton Parkway to Barranca Parkway	60.3	67.1	6.8	3.0	Yes
3	Alton Parkway	Enterprise to I-5 NB Off-Ramp	71.3	72.6	1.3	1.5	No
4	Alton Parkway	I-5 NB Off-Ramp to Technology Drive West	72.1	73.3	1.2	1.5	No
5	Alton Parkway	East Yale Loop to Jeffrey Road	71.3	71.5	0.2	1.5	No
6	Alton Parkway	Gateway Boulevard to Enterprise	69.3	70.5	1.2	1.5	No
7	Alton Parkway	Jeffrey Road to Royal Oak	70.1	70.4	0.3	1.5	No
8	Alton Parkway	Daimler Street to Red Hill Avenue	63.7	70.4	6.7	3.0	Yes
9	Alton Parkway	Culver Drive to West Yale Loop	70.4	70.5	0.1	1.5	No
10	Alton Parkway	West Yale Loop to Lake Road	70.3	70.5	0.2	1.5	No
11	Alton Parkway	Technology Drive West to Ada	70.2	71.4	1.2	1.5	No
12	Alton Parkway	Creek Road to East Yale Loop	70.1	70.3	0.2	1.5	No
13	Alton Parkway	Red Hill Avenue to Von Karman Avenue	68.1	69.9	1.8	1.5	Yes
14	Alton Parkway	Lake Road to Creek Road	70.1	70.3	0.2	1.5	No
15	Alton Parkway	Telemetry to Banting	69.0	69.8	0.8	1.5	No
16	Alton Parkway	Irvine Boulevard to Commercentre	70.3	71.0	0.7	1.5	No
17	Alton Parkway	Jenner to Telemetry	69.0	69.7	0.7	1.5	No
18	Alton Parkway	Irvine Center Drive to Gateway Boulevard	68.6	69.8	1.2	1.5	No
19	Alton Parkway	Sand Canyon Avenue to Hospital	72.1	73.6	1.5	1.5	Yes
20	Alton Parkway	Laguna Canyon Road to Jenner	69.0	69.7	0.7	1.5	No
21	Alton Parkway	Technology Drive East to Barranca Pkwy/Muirlands Blvd	69.1	70.4	1.3	1.5	No
22	Alton Parkway	Royal Oak to Valley Oak Drive	69.4	69.7	0.3	1.5	No
23	Alton Parkway	Banting to Pacifica	68.4	69.3	0.9	1.5	No
24	Alton Parkway	Barranca Pkwy/Muirlands Blvd to Jeronimo Road	70.1	70.3	0.2	1.5	No
25	Alton Parkway	Ada to Technology Drive East	69.2	70.2	1.0	1.5	No
26	Alton Parkway	Von Karman Avenue to Jamboree Road	68.7	69.2	0.5	1.5	No
27	Alton Parkway	Jeronimo Road to Hughes	69.8	69.9	0.1	1.5	No
28	Alton Parkway	Hughes to Morgan	69.5	69.7	0.2	1.5	No

Table 11

29	Alton Parkway	Morgan to Toledo Way	68.8	69.0	0.2	1.5	No
30	Alton Parkway	San Marino to Culver Drive	68.8	69.0	0.2	1.5	No
31	Alton Parkway	Jamboree Road to Murphy Avenue	68.0	68.6	0.6	1.5	No
32	Alton Parkway	Hospital to Laguna Canyon Road	70.7	71.5	0.8	1.5	No
33	Alton Parkway	Valley Oak Drive to Sand Canyon Avenue	71.1	71.4	0.3	1.5	No
34	Alton Parkway	Murphy Avenue to Harvard Avenue	68.1	68.5	0.4	1.5	No
35	Alton Parkway	Foster to Irvine Boulevard	68.0	69.0	1.0	1.5	No
36	Alton Parkway	Fairbanks to Foster	67.5	68.7	1.2	1.5	No
37	Alton Parkway	Toledo Way to Bertea	68.2	68.4	0.2	1.5	No
38	Alton Parkway	Pacifica to Meridian	69.7	70.7	1.0	1.5	No
39	Alton Parkway	Bertea to Fairbanks	68.1	68.3	0.2	1.5	No
40	Alton Parkway	Meridian to Irvine Center Drive	66.6	67.5	0.9	1.5	No
41	Alton Parkway	Paseo Westpark to San Marino	67.9	68.0	0.1	1.5	No
42	Alton Parkway	Harvard Avenue to Paseo Westpark	66.9	67.1	0.2	1.5	No
43	Astor	Lynx to Fairbanks	57.5	66.9	9.4	5.0	Yes
44	Astor	Cadence to Lynx	0.0	66.0	66.0	5.0	Yes
45	Bake Parkway	I-5 NB Off-Ramp to Rockfield Boulevard	75.4	76.4	1.0	1.5	No
46	Bake Parkway	Muirlands Boulevard to Jeronimo Road	72.7	72.9	0.2	1.5	No
47	Bake Parkway	Rockfield Boulevard to Muirlands Boulevard	74.7	75.1	0.4	1.5	No
48	Bake Parkway	Jeronimo Road to Toledo Way	71.9	72.0	0.1	1.5	No
49	Bake Parkway	Toledo Way to Cromwell	71.5	71.6	0.1	1.5	No
50	Bake Parkway	Cromwell to Irvine Boulevard	71.4	71.6	0.2	1.5	No
51	Bake Parkway	Research Drive to I-5 SB Off-Ramp	68.5	69.3	0.8	1.5	No
52	Bake Parkway	Irvine Center Drive to Research Drive	64.1	64.6	0.5	3.0	No
53	Bake Parkway	Lake Forest Drive to Irvine Center Drive	61.9	63.0	1.1	3.0	No
54	Banting	Alton Parkway to Barranca Parkway	57.6	59.3	1.7	5.0	No
55	Barranca Parkway	Pacifica to Irvine Center Drive	70.5	71.7	1.2	1.5	No
56	Barranca Parkway	Banting to Pacifica	70.7	71.8	1.1	1.5	No
57	Barranca Parkway	I-5 HOV Ramp to Technology Drive West	69.8	70.9	1.1	1.5	No
58	Barranca Parkway	Technology Drive West to Ada	70.4	71.5	1.1	1.5	No
59	Barranca Parkway	Irvine Center Drive to I-5 HOV Ramp	69.3	70.8	1.5	1.5	Yes
60	Barranca Parkway	Culver Drive to West Yale Loop	71.9	72.0	0.1	1.5	No
61	Barranca Parkway	East Yale Loop to Jeffrey Road	71.7	71.7	0.0	1.5	No
62	Barranca Parkway	West Yale Loop to Lake Road	71.6	71.8	0.2	1.5	No

Table 11

63	Barranca Parkway	Ada to Alton Parkway	70.2	72.3	2.1	1.5	Yes
64	Barranca Parkway	Lake Road to Creek Road	71.2	71.4	0.2	1.5	No
65	Barranca Parkway	Red Hill Avenue to Armstrong Avenue	73.3	74.4	1.1	1.5	No
66	Barranca Parkway	Discovery/Herchel to Banting	69.7	71.1	1.4	1.5	No
67	Barranca Parkway	Lyon to East Yale Loop	71.0	71.1	0.1	1.5	No
68	Barranca Parkway	Creek Road to Lyon	70.9	71.1	0.2	1.5	No
69	Barranca Parkway	Von Karman Avenue to Jamboree Road	71.5	72.4	0.9	1.5	No
70	Barranca Parkway	Sand Canyon Avenue to Laguna Canyon Road	68.5	70.6	2.1	1.5	Yes
71	Barranca Parkway	Armstrong Avenue to Von Karman Avenue	72.0	72.1	0.1	1.5	No
72	Barranca Parkway	Valley Oak Drive to Sand Canyon Avenue	69.1	70.4	1.3	1.5	No
73	Barranca Parkway	Jamboree Road to Construction Circle	70.1	70.7	0.6	1.5	No
74	Barranca Parkway	Santa Rosa to Culver Drive	69.8	70.6	0.8	1.5	No
75	Barranca Parkway	FedEx to Discovery/Herchel	68.8	69.6	0.8	1.5	No
76	Barranca Parkway	Jeffrey Road to Valley Oak Drive	68.3	69.7	1.4	1.5	No
77	Barranca Parkway	Laguna Canyon Road to FedEx	68.8	69.4	0.6	1.5	No
78	Barranca Parkway	Pullman Street to Red Hill Avenue	72.7	73.4	0.7	1.5	No
79	Barranca Parkway	Construction Circle to Fire Station	69.4	70.1	0.7	1.5	No
80	Barranca Parkway	Fire Station to Harvard Avenue	69.4	70.1	0.7	1.5	No
81	Barranca Parkway	Paseo Westpark to Santa Rosa	69.3	70.1	0.8	1.5	No
82	Barranca Parkway	Harvard Avenue to Paseo Westpark	69.2	69.7	0.5	1.5	No
83	Bay Tree	Trabuco Road to Roosevelt	56.1	57.2	1.1	5.0	No
84	Beacon	Ridge Valley to Benchmark	0.0	59.0	59.0	5.0	Yes
85	Benchmark (LN Street)	Ridge Valley (O Street) to Bosque	0.0	56.7	56.7	5.0	Yes
86	Bison Avenue	SR-73 NB Off-Ramp to California Avenue	68.6	69.7	1.1	1.5	No
87	Bonita Canyon Drive	MacArthur Boulevard to SR-73	70.0	70.2	0.2	1.5	No
88	Bonita Canyon Drive	Turtle Ridge to Shady Canyon Drive	67.5	68.5	1.0	1.5	No
89	Bonita Canyon Drive	Newport Coast Drive to Turtle Ridge	67.5	68.2	0.7	1.5	No
90	Bonita Canyon Drive	SR-73 NB Off-Ramp to Newport Coast Drive	67.5	67.9	0.4	1.5	No
91	Bosque	Cadence to Great Park Boulevard	63.0	64.8	1.8	3.0	No
92	Bosque	Irvine Boulevard to Benchmark (LN Street)	59.7	63.0	3.3	5.0	No
93	Bosque	Benchmark to Cadence	59.7	63.0	3.3	5.0	No
94	Bosque	Great Park Boulevard to Beacon	0.0	56.9	56.9	5.0	Yes
95	Bosque	Beacon to S 5th Street	0.0	55.9	55.9	5.0	Yes
96	Bryan Avenue	Jamboree Road to Market Place	68.7	68.9	0.2	1.5	No

Table 11

97	Bryan Avenue	Market Place to El Camino Real	68.7	68.9	0.2	1.5	No
98	Bryan Avenue	Rubicon to Culver Drive	68.7	68.9	0.2	1.5	No
99	Bryan Avenue	El Camino Real to Rubicon	68.7	68.9	0.2	1.5	No
100	Bryan Avenue	Eastwood to Jeffrey Road	65.8	66.3	0.5	1.5	No
101	Bryan Avenue	Westwood to Yale Avenue	66.3	66.3	0.0	1.5	No
102	Bryan Avenue	Culver Drive to Westwood	66.3	66.4	0.1	1.5	No
103	Bryan Avenue	Yale Avenue to Eastwood	65.8	66.0	0.2	1.5	No
104	Cadence	Pusan to Chinon	64.5	64.1	-0.4	3.0	No
105	Cadence	Bosque to Pusan	65.7	64.2	-1.5	1.5	No
106	Cadence	Ridge Valley (O Street) to Bosque	62.6	64.0	1.4	3.0	No
107	Cadence	Chinon to Merit	62.6	59.1	-3.5	3.0	No
108	Cadence	Merit to Astor	0.0	58.6	58.6	5.0	Yes
109	California Avenue	University Drive to Academy Way	64.3	66.2	1.9	3.0	No
110	California Avenue	Campus Drive to Harvard Avenue	63.2	64.1	0.9	3.0	No
111	California Avenue	Theory to Bison Avenue	63.1	64.0	0.9	3.0	No
112	Campus Drive	Carlson Avenue to University Drive	70.9	73.0	2.1	1.5	Yes
113	Campus Drive	University Drive to Bridge Road	70.1	71.7	1.6	1.5	Yes
114	Campus Drive	Jamboree Road to Carlson Avenue	69.0	71.3	2.3	1.5	Yes
115	Campus Drive	Stanford Court to Berkeley Avenue	70.1	71.0	0.9	1.5	No
116	Campus Drive	California Avenue to Culver Drive	68.9	70.9	2.0	1.5	Yes
117	Campus Drive	Berkeley Avenue to Cornell	68.9	69.9	1.0	1.5	No
118	Campus Drive	Martin to Von Karman Avenue	67.5	68.7	1.2	1.5	No
119	Campus Drive	Culver Drive to Paseo Montoya (Turtle Rock Drive)	68.5	68.6	0.1	1.5	No
120	Campus Drive	Von Karman Avenue to Teller Avenue	66.8	68.1	1.3	1.5	No
121	Campus Drive	MacArthur Boulevard to Martin	67.5	68.1	0.6	1.5	No
122	Campus Drive	Teller Avenue to Jamboree Road	66.8	67.2	0.4	1.5	No
123	Carlson Avenue	Michelson Drive to Campus Drive	64.5	67.8	3.3	3.0	Yes
124	Chinon	Irvine Boulevard to Cadence	56.6	58.3	1.7	5.0	No
125	Creek Road	Alton Parkway to Barranca Parkway	55.3	56.0	0.7	5.0	No
126	Culver Drive	Michelson Drive to I-405 SB Off-Ramp	73.4	73.7	0.3	1.5	No
127	Culver Drive	I-405 SB Off-Ramp to I-405 NB Off Ramp	73.4	73.9	0.5	1.5	No
128	Culver Drive	I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)	73.7	73.9	0.2	1.5	No
129	Culver Drive	Scottsdale Drive to I-5 SB Off- Ramp	73.7	73.9	0.2	1.5	No
130	Culver Drive	I-405 NB Off-Ramp to San Leandro	73.4	73.6	0.2	1.5	No



Table 11

131	Culver Drive	San Leandro to Main Street	73.2	73.3	0.1	1.5	No
132	Culver Drive	Harvard Avenue to University Drive	72.7	73.3	0.6	1.5	No
133	Culver Drive	Trabuco Road to Farwell Avenue	74.1	74.4	0.3	1.5	No
134	Culver Drive	Alton Parkway to Barranca Parkway	72.9	73.2	0.3	1.5	No
135	Culver Drive	Main Street to Alton Parkway	72.7	73.1	0.4	1.5	No
136	Culver Drive	Warner Avenue to Irvine Center Drive	72.7	73.0	0.3	1.5	No
137	Culver Drive	Walnut Avenue to Scottsdale Dive	72.6	72.9	0.3	1.5	No
138	Culver Drive	Barranca Parkway to Warner Avenue	72.6	72.8	0.2	1.5	No
139	Culver Drive	Shady Canyon Drive to Palo Verde	71.4	72.1	0.7	1.5	No
140	Culver Drive	Deerfield Avenue to Walnut Avenue	72.3	72.6	0.3	1.5	No
141	Culver Drive	Sandburg Way to Michelson Drive	71.9	72.5	0.6	1.5	No
142	Culver Drive	Irvine Center Drive to Deerfield Avenue	72.1	72.4	0.3	1.5	No
143	Culver Drive	Palo Verde to Campus Drive	71.4	71.6	0.2	1.5	No
144	Culver Drive	University Drive to Sandburg Way	71.5	72.2	0.7	1.5	No
145	Culver Drive	Farwell Avenue to Bryan Avenue	72.8	73.3	0.5	1.5	No
146	Culver Drive	Campus Drive to High School	71.6	72.1	0.5	1.5	No
147	Culver Drive	High School to Harvard Avenue	71.6	72.0	0.4	1.5	No
148	Culver Drive	Bryan Avenue to Florence	71.5	71.8	0.3	1.5	No
149	Culver Drive	Portola Parkway to Settlers	68.9	71.1	2.2	1.5	Yes
150	Culver Drive	Florence to Irvine Boulevard	71.3	71.7	0.4	1.5	No
151	Culver Drive	Irvine Boulevard to Viewpark	70.0	70.5	0.5	1.5	No
152	Culver Drive	Viewpark to Meadowood	70.0	70.5	0.5	1.5	No
153	Culver Drive	Settlers to Furrow	0.0	68.3	68.3	5.0	Yes
154	Culver Drive	Meadowood to Portola Parkway	68.3	69.0	0.7	1.5	No
155	Discovery Drive	Irvine Center Drive to Laguna Canyon Road	56.6	63.8	7.2	5.0	Yes
156	Discovery Drive	Waterworks Way to Irvine Center Drive	0.0	60.7	60.7	5.0	Yes
157	East Yale Loop	Alton Parkway to Witherspoon	64.6	65.3	0.7	3.0	No
158	East Yale Loop	Osborn Street to Barranca Parkway	64.3	65.0	0.7	3.0	No
159	East Yale Loop	Yale Avenue to Springbrook South	62.3	64.3	2.0	3.0	No
160	East Yale Loop	Springbrook North to Alton Parkway	62.3	63.4	1.1	3.0	No
161	East Yale Loop	Woodspring to Yale Avenue	62.3	62.5	0.2	3.0	No
162	East Yale Loop	Barranca Parkway to Eastshore	62.3	62.5	0.2	3.0	No
163	Eastwood	Bryan Avenue to Monticello	59.5	60.5	1.0	5.0	No
164	Eastwood	Columbus to Bryan Avenue	58.5	58.8	0.3	5.0	No

Table 11

165	El Camino Real	Jamboree Road to Alliance (SR-261 Bridge)	66.9	67.0	0.1	1.5	No
166	El Camino Real North	El Camino Real to Bryan Avenue	62.2	62.4	0.2	3.0	No
167	Fairbanks	Alton Parkway to Astor	61.3	69.7	8.4	3.0	Yes
168	Fairbanks	Irvine Boulevard to Alton Parkway	0.0	66.8	66.8	5.0	Yes
169	Fairchild Road	MacArthur Boulevard to Jamboree Road	63.3	64.0	0.7	3.0	No
170	Gateway Boulevard	Alton Parkway to Irvine Center Drive	57.0	62.8	5.8	5.0	Yes
171	Gateway Boulevard	Spectrum Center Drive (Fortune Drive) to Alton Parkway	59.4	61.6	2.2	5.0	No
172	Gateway Boulevard	Irvine Center Drive to Meridian	56.8	58.4	1.6	5.0	No
173	Great Park Boulevard	Sand Canyon to Ridge Valley	70.5	74.1	3.6	1.5	Yes
174	Great Park Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	64.0	69.7	5.7	3.0	Yes
175	Great Park Boulevard (EB)	Bosque to Skyhawk	0.0	68.0	68.0	5.0	Yes
176	Great Park Boulevard (WB)	Bosque to Skyhawk	0.0	67.6	67.6	5.0	Yes
177	Harvard Avenue	University Drive to Michelson Drive	71.2	71.8	0.6	1.5	No
178	Harvard Avenue	Michelson Drive to Coronado	69.5	70.2	0.7	1.5	No
179	Harvard Avenue	San Marino to Alton Parkway	69.4	70.0	0.6	1.5	No
180	Harvard Avenue	Coronado to Main Street	69.3	70.0	0.7	1.5	No
181	Harvard Avenue	San Carlo to San Marino	69.4	69.9	0.5	1.5	No
182	Harvard Avenue	Main Street to San Carlo	69.3	69.8	0.5	1.5	No
183	Harvard Avenue	Alton Parkway to San Leon	68.5	68.8	0.3	1.5	No
184	Harvard Avenue	San Juan to Barranca Parkway	68.5	68.6	0.1	1.5	No
185	Harvard Avenue	San Leon to San Juan	68.4	68.6	0.2	1.5	No
186	Harvard Avenue	Irvine Center Drive to Deerfield Avenue	65.5	67.4	1.9	1.5	Yes
187	Harvard Avenue	Deerfield Avenue to Poplar Street	65.5	67.4	1.9	1.5	Yes
188	Harvard Avenue	Barranca Parkway to Warner Avenue	67.6	67.9	0.3	1.5	No
189	Harvard Avenue	Bridge Road to University Drive	67.2	67.6	0.4	1.5	No
190	Harvard Avenue	Paseo Westpark to Irvine Center Drive	66.1	67.7	1.6	1.5	Yes
191	Harvard Avenue	Poplar Street to Walnut Avenue	66.8	68.7	1.9	1.5	Yes
192	Harvard Avenue	California Avenue to Berkeley Avenue	66.1	67.0	0.9	1.5	No
193	Harvard Avenue	Culver Drive to California Avenue	66.1	66.9	0.8	1.5	No
194	Harvard Avenue	Berkeley to Bridge Road	66.1	67.0	0.9	1.5	No
195	Harvard Avenue	Warner Avenue to Paseo Westpark	65.9	66.8	0.9	1.5	No
196	Hicks Canyon Drive	Delamesa to Yale Avenue	58.2	58.4	0.2	5.0	No
197	Hornet (5th St)	Ridge Valley (O Street) to Bosque	0.0	57.5	57.5	5.0	Yes
198	Hubble	Irvine Center Drive to Bunsen	55.5	55.7	0.2	5.0	No

Table 11

199	Irvine Boulevard	SR-133 NB Off- Ramp to Ridge Valley (O Street)	72.1	72.3	0.2	1.5	No
200	Irvine Boulevard	SR-133 SB Off-Ramp to SR-133 NB Off-Ramp	72.0	72.2	0.2	1.5	No
201	Irvine Boulevard	Sand Canyon to SR-133 SB Off-Ramp	72.9	73.1	0.2	1.5	No
202	Irvine Boulevard	Merit to Alton	71.4	71.6	0.2	1.5	No
203	Irvine Boulevard	Journey to Sand Canyon Avenue	71.4	71.6	0.2	1.5	No
204	Irvine Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	70.9	71.2	0.3	1.5	No
205	Irvine Boulevard	Pusan Way to Chinon (B Street)	70.8	71.0	0.2	1.5	No
206	Irvine Boulevard	Palo Lado to Yale Avenue	70.4	70.6	0.2	1.5	No
207	Irvine Boulevard	Culver Drive to Palo Lado	70.5	70.6	0.1	1.5	No
208	Irvine Boulevard	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.5	70.6	0.1	1.5	No
209	Irvine Boulevard	Old Myford Road to Market Place	70.3	70.5	0.2	1.5	No
210	Irvine Boulevard	Bosque (LY Street) to Modjeska	70.5	70.7	0.2	1.5	No
211	Irvine Boulevard	Jamboree Road to Old Myford Road	70.3	70.5	0.2	1.5	No
212	Irvine Boulevard	Market Place to SR-261 SB Off-Ramp	70.3	70.4	0.1	1.5	No
213	Irvine Boulevard	Jeffrey Road to Groveland	70.6	70.8	0.2	1.5	No
214	Irvine Boulevard	Bake Parkway to Lake Forest Drive	69.8	70.9	1.1	1.5	No
215	Irvine Boulevard	Independence Way (The Groves)/The Groves to Jeffrey Road	70.2	70.5	0.3	1.5	No
216	Irvine Boulevard	Chinon (B Street) to Merit	70.2	70.5	0.3	1.5	No
217	Irvine Boulevard	SR-261 NB Off-Ramp to Central Park	70.1	70.2	0.1	1.5	No
218	Irvine Boulevard	Pueblo Norte to Independence Way (The Groves)/ Parkwood	69.9	70.1	0.2	1.5	No
219	Irvine Boulevard	Yale Avenue to Pueblo Norte	69.9	70.1	0.2	1.5	No
220	Irvine Boulevard	Modjeska to Pusan Way	70.0	70.2	0.2	1.5	No
221	Irvine Boulevard	Central Park Avenue to Culver Drive	69.5	69.6	0.1	1.5	No
222	Irvine Boulevard	Parker to Bake Parkway	69.0	69.6	0.6	1.5	No
223	Irvine Boulevard	Alton Parkway to Fairbanks	68.4	68.6	0.2	1.5	No
224	Irvine Center Drive	Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp	71.3	72.5	1.2	1.5	No
225	Irvine Center Drive	Orange Tree to Valley Oak Drive	69.7	71.4	1.7	1.5	Yes
226	Irvine Center Drive	I-405 SB Off-Ramp to Research	70.9	72.1	1.2	1.5	No
227	Irvine Center Drive	Irvine Valley College to Orange Tree	69.7	71.3	1.6	1.5	Yes
228	Irvine Center Drive	Fontaine Avenue to Jeffrey Road	69.5	71.0	1.5	1.5	Yes
229	Irvine Center Drive	Culver Drive to Deerwood	69.7	71.0	1.3	1.5	No
230	Irvine Center Drive	Deerwood to Yale Avenue	69.6	71.0	1.4	1.5	No
231	Irvine Center Drive	Yale Avenue to Fontaine Avenue	69.4	70.9	1.5	1.5	Yes
232	Irvine Center Drive	Jeffrey Road to Irvine Valley College	69.7	71.1	1.4	1.5	No

Table 11

233	Irvine Center Drive	Alton Parkway to Spectrum	68.9	70.4	1.5	1.5	Yes
234	Irvine Center Drive	Spectrum to Pacifica	68.9	70.3	1.4	1.5	No
235	Irvine Center Drive	Hearthstone to Culver Drive	69.2	70.6	1.4	1.5	No
236	Irvine Center Drive	Charter to Barranca Parkway	68.1	70.2	2.1	1.5	Yes
237	Irvine Center Drive	Jamboree Road to Harvard Avenue	69.7	70.3	0.6	1.5	No
238	Irvine Center Drive	Pacifica to Entertainment (Enterprise/Fortune)	69.1	70.3	1.2	1.5	No
239	Irvine Center Drive	Valley Oak Drive to Sand Canyon Avenue	68.1	70.0	1.9	1.5	Yes
240	Irvine Center Drive	Harvard Avenue to Hearthstone	69.2	70.0	0.8	1.5	No
241	Irvine Center Drive	Research to Hubble	67.9	69.8	1.9	1.5	Yes
242	Irvine Center Drive	Barranca Parkway to Gateway Boulevard	66.9	69.4	2.5	1.5	Yes
243	Irvine Center Drive	Bake Parkway to Muller	67.9	69.9	2.0	1.5	Yes
244	Irvine Center Drive	Discovery to Charter	67.3	69.3	2.0	1.5	Yes
245	Irvine Center Drive	Hubble to Bake Parkway	67.8	69.7	1.9	1.5	Yes
246	Irvine Center Drive	Muller to Tesla	67.7	69.5	1.8	1.5	Yes
247	Irvine Center Drive	Sand Canyon Avenue to Odyssey	67.6	69.0	1.4	1.5	No
248	Irvine Center Drive	Tesla to Scientific Way	67.1	69.2	2.1	1.5	Yes
249	Irvine Center Drive	Scientific Way to Lake Forest Drive	67.2	68.9	1.7	1.5	Yes
250	Irvine Center Drive	Gateway Boulevard to Alton Parkway	66.7	68.3	1.6	1.5	Yes
251	Irvine Center Drive	Laguna Canyon Road to Discovery	66.8	68.2	1.4	1.5	No
252	Irvine Center Drive	Odyssey to Laguna Canyon Road	66.8	68.3	1.5	1.5	Yes
253	Irvine Center Drive (Edinger)	Redhill Avenue to Jamboree Road	69.6	70.8	1.2	1.5	No
254	Jamboree Road	I-5 SB Off-Ramp to I-5 NB Off-Ramp	74.3	74.5	0.2	1.5	No
255	Jamboree Road	I-405 SB Off-Ramp to I-405 NB Off Ramp	75.1	75.4	0.3	1.5	No
256	Jamboree Road	Walnut Avenue to Michelle Drive	73.5	73.8	0.3	1.5	No
257	Jamboree Road	I-405 NB Off-Ramp to Main Street	76.5	76.9	0.4	1.5	No
258	Jamboree Road	Michelle Drive to I-5 SB Off-Ramp	73.5	73.6	0.1	1.5	No
259	Jamboree Road	Main Street to Kelvin Avenue	75.7	76.2	0.5	1.5	No
260	Jamboree Road	Michelson Drive to I-405 SB Off-Ramp	73.6	74.2	0.6	1.5	No
261	Jamboree Road	Kelvin Avenue to McGaw Avenue	75.5	75.8	0.3	1.5	No
262	Jamboree Road	McGaw Avenue to Alton Parkway	75.4	75.8	0.4	1.5	No
263	Jamboree Road	Birch Street to Campus Drive	72.1	72.6	0.5	1.5	No
264	Jamboree Road	Dupont Drive to Michelson Drive	73.3	73.5	0.2	1.5	No
265	Jamboree Road	Alton Parkway to Beckman	75.2	75.4	0.2	1.5	No
266	Jamboree Road	Fairchild Road to Birch Street	72.2	73.2	1.0	1.5	No

Table 11

267	Jamboree Road	Beckman to Barranca Parkway	75.0	75.2	0.2	1.5	No
268	Jamboree Road	I-5 NB Off-Ramp to El Camino Real	74.9	75.1	0.2	1.5	No
269	Jamboree Road	Campus Drive to Dupont Drive	72.5	72.7	0.2	1.5	No
270	Jamboree Road	El Camino Real to West Drive	74.9	75.1	0.2	1.5	No
271	Jamboree Road	West Drive to Bryan Avenue	74.9	75.1	0.2	1.5	No
272	Jamboree Road	Bryan Avenue to Irvine Boulevard	74.5	74.8	0.3	1.5	No
273	Jamboree Road	Koll Center to Fairchild Road	71.7	72.5	0.8	1.5	No
274	Jamboree Road	MacArthur Boulevard to Koll Center	71.8	72.5	0.7	1.5	No
275	Jamboree Road	Irvine Boulevard to Portola Pakway	70.0	70.8	0.8	1.5	No
276	Jamboree Road	Warner Avenue to Edinger Avenue	79.0	79.1	0.1	1.5	No
277	Jamboree Road	Barranca Parkway to Warner Avenue	78.1	78.2	0.1	1.5	No
278	Jamboree Road	Edinger Avenue to Walnut Avenue	77.8	77.9	0.1	1.5	No
279	Jeffrey Road	Walnut Avenue to I-5 NB Off-Ramp	70.9	71.3	0.4	1.5	No
280	Jeffrey Road	I-5 NB Off-Ramp to Roosevelt	71.8	72.2	0.4	1.5	No
281	Jeffrey Road	Poplar (Meadows) to Walnut Avenue	70.4	70.8	0.4	1.5	No
282	Jeffrey Road	Alton Parkway to Barranca Parkway	70.3	70.5	0.2	1.5	No
283	Jeffrey Road	Irvine Center Drive to Poplar (Meadows)	70.2	70.6	0.4	1.5	No
284	Jeffrey Road	I-405 NB Off-Ramp to Quail Creek	70.4	70.5	0.1	1.5	No
285	Jeffrey Road	Barranca Parkway to Irvine Valley College	70.3	70.4	0.1	1.5	No
286	Jeffrey Road	Quail Creek to Alton Parkway	70.4	70.5	0.1	1.5	No
287	Jeffrey Road	Irvine Valley College to Irvine Center Drive	70.1	70.3	0.2	1.5	No
288	Jeffrey Road	Trabuco Road to Hideaway	69.4	69.7	0.3	1.5	No
289	Jeffrey Road	Hideaway to Bryan Avenue	69.4	69.7	0.3	1.5	No
290	Jeffrey Road	Roosevelt to Grove	70.0	70.4	0.4	1.5	No
291	Jeffrey Road	Grove to Trabuco Road	70.0	70.3	0.3	1.5	No
292	Jeffrey Road	Bryan Avenue to Irvine Boulevard	68.1	68.5	0.4	1.5	No
293	Jeffrey Road	Encore to Portola Parkway	64.0	66.1	2.1	3.0	No
294	Jeffrey Road	Irvine Boulevard to Encore	64.0	65.6	1.6	3.0	No
295	Jeronimo Road	Goodyear to Bake Parkway	64.4	64.8	0.4	3.0	No
296	Jeronimo Road	Alton Parkway to Goodyear	64.1	64.7	0.6	3.0	No
297	Laguna Canyon Road	Old Laguna Canyon Road to Lake Forest Drive	72.6	73.3	0.7	1.5	No
298	Laguna Canyon Road	Laguna Canyon Freeway to Quail Hill Parkway	67.7	70.0	2.3	1.5	Yes
299	Laguna Canyon Road	Discovery to Sand Canyon Avenue	64.8	68.1	3.3	3.0	Yes
300	Laguna Canyon Road	I-405 Overcrossing to Pasteur	66.0	68.0	2.0	1.5	Yes

Table 11

301	Laguna Canyon Road	Irvine Center Drive to Discovery	63.6	67.3	3.7	3.0	Yes
302	Laguna Canyon Road	Quail Hill Parkway to I-405 Overcrossing	66.0	68.0	2.0	1.5	Yes
303	Laguna Canyon Road	Pasteur to Alton Parkway	65.5	66.9	1.4	1.5	No
304	Laguna Canyon Road	Waterworks to Irvine Center Drive	64.5	66.2	1.7	3.0	No
305	Laguna Canyon Road	Alton Parkway to Barranca Parkway	64.8	66.0	1.2	3.0	No
306	Laguna Canyon Road	Barranca Parkway to Waterworks	63.9	65.6	1.7	3.0	No
307	Lake Forest Drive	Hidden Canyon to Laguna Canyon Road	68.3	69.2	0.9	1.5	No
308	Lake Forest Drive	Bake Parkway to Hidden Canyon (Romano)	68.3	69.2	0.9	1.5	No
309	Lake Forest Drive	Tesla to Bake Parkway	65.3	66.2	0.9	1.5	No
310	Lake Road	Alton Parkway to Barranca Parkway	59.0	59.2	0.2	5.0	No
311	Lynx	Irvine Boulevard to Astor	0.0	53.5	53.5	5.0	Yes
312	MacArthur Boulevard	I-405 SB Off-Ramp to Michelson Drive	76.0	76.4	0.4	1.5	No
313	MacArthur Boulevard	Main Street to I-405 NB Off-Ramp	75.8	76.5	0.7	1.5	No
314	MacArthur Boulevard	I-405 NB Off-Ramp and I-405 SB Off-Ramp	75.7	76.4	0.7	1.5	No
315	MacArthur Boulevard	Jamboree Road to Fairchild Road	69.7	69.9	0.2	1.5	No
316	MacArthur Boulevard	Fairchild Road to University Drive	69.7	69.8	0.1	1.5	No
317	MacArthur Boulevard	Fitch to Red Hill Avenue	70.4	70.5	0.1	1.5	No
318	MacArthur Boulevard	Michelson Drive to Douglas	71.3	71.8	0.5	1.5	No
319	MacArthur Boulevard	Douglas to Campus Drive	71.3	71.9	0.6	1.5	No
320	MacArthur Boulevard	Skypark to Main Street	69.0	69.6	0.6	1.5	No
321	MacArthur Boulevard	Redhill Avenue to Skypark	68.0	68.5	0.5	1.5	No
322	MacArthur Boulevard	Birch Street to Jamboree Road	66.5	66.8	0.3	1.5	No
323	MacArthur Boulevard	Campus Drive to Birch Street	68.5	69.1	0.6	1.5	No
324	Main Street	Gillette Avenue to Von Karman Avenue	69.4	70.2	0.8	1.5	No
325	Main Street	MacArthur Boulevard to Mercantile	69.4	69.9	0.5	1.5	No
326	Main Street	Executive Park to MacArthur Boulevard	67.7	68.2	0.5	1.5	No
327	Main Street	Von Karman Avenue to Cartwright	67.2	67.8	0.6	1.5	No
328	Main Street	McDermott to Red Hill Avenue	67.9	68.0	0.1	1.5	No
329	Main Street	Red Hill Avenue to Executive Circle	67.7	67.9	0.2	1.5	No
330	Main Street	Jamboree Road to Union	67.4	67.7	0.3	1.5	No
331	Main Street	Culver Drive to West Yale Loop	67.0	67.2	0.2	1.5	No
332	Main Street	Siglo to Jamboree Road	67.2	67.4	0.2	1.5	No
333	Main Street	Veneto to Harvard Avenue	67.4	67.6	0.2	1.5	No
334	Main Street	Paseo Westpark to Culver Drive	66.2	66.4	0.2	1.5	No

Table 11

335	Main Street	Harvard Avenue to San Mateo	66.2	66.3	0.1	1.5	No
336	Marine Way	Sand Canyon Avenue to Ridge Valley (O Street)	67.8	72.1	4.3	1.5	Yes
337	Marine Way	Alton Parkway to Bake Parkway	0.0	69.0	69.0	5.0	Yes
338	Marine Way	Lynx to Barranca Parkway	0.0	69.4	69.4	5.0	Yes
339	Marine Way	County Access to Treble	59.3	65.3	6.0	5.0	Yes
340	Marine Way	Ridge Valley (O Street) to Skyhawk	62.0	67.6	5.6	3.0	Yes
341	Marine Way	Skyhawk to County Access	59.3	64.9	5.6	5.0	Yes
342	Marine Way	Barranca Parkway to Alton Parkway	52.7	66.3	13.6	5.0	Yes
343	Marine Way	Treble to Lynx	0.0	67.1	67.1	5.0	Yes
344	McGaw Avenue	Von Karman Avenue to Jamboree Road	62.2	63.6	1.4	3.0	No
345	McGaw Avenue	Red Hill Avenue to Von Karman Avenue	62.1	63.6	1.5	3.0	No
346	McGaw Avenue	Daimler to Red Hill Avenue	61.0	62.4	1.4	3.0	No
347	McGaw Avenue	Jamboree Road to Murphy Avenue	57.6	59.2	1.6	5.0	No
348	Meadowood	Culver Drive to Canyonwood	59.5	59.8	0.3	5.0	No
349	Meridian	Spectrum to Alton Parkway	54.7	54.9	0.2	5.0	No
350	Meridian	Alton Parkway to Gateway Boulevard	53.5	54.1	0.6	5.0	No
351	Merit	Irvine Boulevard to Cadence	59.3	57.3	-2.0	5.0	No
352	Michelson Drive	Riparian to Harvard Avenue	66.7	67.8	1.1	1.5	No
353	Michelson Drive	Almond Tree Lane to Yale Avenue	66.3	66.7	0.4	1.5	No
354	Michelson Drive	Von Karman Avenue to Obsidian	66.7	67.8	1.1	1.5	No
355	Michelson Drive	Parkside to Culver Drive	66.2	66.8	0.6	1.5	No
356	Michelson Drive	Gillman to Seton/Sandburg Way	66.3	66.5	0.2	1.5	No
357	Michelson Drive	Carlson to Prince	65.4	67.0	1.6	1.5	Yes
358	Michelson Drive	MacArthur Boulevard to Dupont Drive	66.7	67.0	0.3	1.5	No
359	Michelson Drive	Harvard Avenue to Parkside	66.2	66.8	0.6	1.5	No
360	Michelson Drive	Bixby to Von Karman Avenue	64.9	66.3	1.4	3.0	No
361	Michelson Drive	Jamboree Road to Carlson	68.0	69.5	1.5	1.5	Yes
362	Michelson Drive	Teller to Jamboree Road	68.7	69.5	0.8	1.5	No
363	Michelson Drive	Jordan East to University Drive	66.6	66.8	0.2	1.5	No
364	Michelson Drive	Culver Drive to Angell	65.9	66.1	0.2	1.5	No
365	Modjeska (A Street)	Portola Springs to Irvine Boulevard	70.7	71.7	1.0	1.5	No
366	Modjeska (A Street)	South of Irvine Boulevard	61.4	60.6	-0.8	3.0	No
367	Muirlands Boulevard	Bake Parkway to City Limits	66.4	67.2	0.8	1.5	No
368	Muirlands Boulevard	Alton Parkway to Sterling	66.1	66.3	0.2	1.5	No

Table 11

369	Muirlands Boulevard	Wrigley to Bake Parkway	66.1	66.2	0.1	1.5	No
370	Newport Coast Drive	SR-73 NB Off-Ramp to Turtle Ridge	65.9	66.7	0.8	1.5	No
371	Newport Coast Drive	Turtle Crest to Bonita Canyon Drive	65.0	65.2	0.2	1.5	No
372	Nightmist	Sand Canyon Avenue to Tulip (Road C)	60.8	62.1	1.3	3.0	No
373	Northwood	Yale Avenue to Savannah	62.3	62.4	0.1	3.0	No
374	Northwood	Goldrush to Yale Avenue	60.5	61.3	0.8	3.0	No
375	Oak Canyon Drive	Valley Oak Drive to Sand Canyon Avenue	66.2	67.4	1.2	1.5	No
376	Pacifica	Gateway to Barranca Parkway	63.3	64.6	1.3	3.0	No
377	Pacifica	Alton Parkway to Gateway	61.8	63.2	1.4	3.0	No
378	Pacifica	Irvine Center Drive to Fortune Drive (Spectrum Center Drive)	61.7	63.2	1.5	3.0	No
379	Pacifica	Meridian to Alton Parkway	58.1	60.0	1.9	5.0	No
380	Park Place	Christamon South to Yale Avenue	56.8	57.0	0.2	5.0	No
381	Portola Parkway	Bee Canyon Access Road to Sand Canyon Avenue	70.3	71.3	1.0	1.5	No
382	Portola Parkway	Jeffrey Road to Bee Canyon Access Road	70.3	71.3	1.0	1.5	No
383	Portola Parkway	Arrowhead to Ridge Valley Parkway	69.6	71.3	1.7	1.5	Yes
384	Portola Parkway	Sand Canyon Avenue to Arrowhead	69.6	70.9	1.3	1.5	No
385	Portola Parkway	Portola Springs to SR-241 SB Off-Ramp	65.5	70.0	4.5	1.5	Yes
386	Portola Parkway	Gatepark to Culver Drive	69.6	70.3	0.7	1.5	No
387	Portola Parkway	ETC-6 (SR-261) NB Off-Ramp to Gatepark	69.6	70.2	0.6	1.5	No
388	Portola Parkway	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	69.6	70.1	0.5	1.5	No
389	Portola Parkway	Jamboree Road to Bellevue	69.6	70.1	0.5	1.5	No
390	Portola Parkway	Bellevue to ETC-6 (SR-261) SB Off-Ramp	69.6	70.0	0.4	1.5	No
391	Portola Parkway	Yale Avenue to Jeffrey Road	68.6	69.8	1.2	1.5	No
392	Portola Parkway	Culver Drive to Yale Avenue	68.6	69.4	0.8	1.5	No
393	Portola Parkway	Silverado to Portola Springs	66.5	68.5	2.0	1.5	Yes
394	Pusan	Irvine Boulevard to Cadence	54.0	56.1	2.1	5.0	No
395	Quail Hill Parkway	Shady Canyon Drive to Passage	67.3	67.6	0.3	1.5	No
396	Quail Hill Parkway	East Knollcrest to Laguna Canyon Road	64.8	65.6	0.8	3.0	No
397	Quassar Drive (Spectrum)	Irvine Center Drive to Spectrum Center Drive (Fortune)	54.4	54.9	0.5	5.0	No
398	Red Hill Avenue	MacArthur Boulevard to McGaw Avenue	70.8	71.3	0.5	1.5	No
399	Red Hill Avenue	I-405 Over Crossing to Main Street	69.6	69.9	0.3	1.5	No
400	Red Hill Avenue	Alton Parkway to Deere Avenue	69.5	69.9	0.4	1.5	No
401	Red Hill Avenue	McGaw Avenue to Alton Parkway	69.3	69.7	0.4	1.5	No
402	Red Hill Avenue	Deere Avenue to Barranca Parkway	69.3	69.7	0.4	1.5	No



Table 11

403	Red Hill Avenue	Skypark East to MacArthur Boulevard	70.2	71.0	0.8	1.5	No
404	Red Hill Avenue	Main Street to Skypark East	69.6	70.4	0.8	1.5	No
405	Research Drive	Hubble to Bake Parkway	65.4	69.5	4.1	1.5	Yes
406	Research Drive	Scientific to Lake Forest Drive	65.6	67.6	2.0	1.5	Yes
407	Research Drive	Bake Parkway to Muller	66.2	66.5	0.3	1.5	No
408	Research Drive	Irvine Center Drive to Bunsen	64.9	65.5	0.6	3.0	No
409	Ridge Valley (O Street)	Irvine Boulevard to Trabuco Road (Great Park Boulevard)	65.5	67.4	1.9	1.5	Yes
410	Ridge Valley (O Street)	Portola Parkway to Irvine Boulevard	65.9	66.5	0.6	1.5	No
411	Ridge Valley (O Street)	Trabuco Road (Great Park Boulevard) to Marine Way	65.8	66.0	0.2	1.5	No
412	Ridge Valley (O Street)	Ranchland to Portola Parkway	58.0	58.1	0.1	5.0	No
413	Ridgeline Drive	Concordia East to University Drive	67.7	68.6	0.9	1.5	No
414	Ridgeline Drive	Turtle Rock Drive to San Simeon	67.7	68.2	0.5	1.5	No
415	Rockfield Avenue	Whatney to McLaren	66.3	67.5	1.2	1.5	No
416	Rockfield Avenue	Bake Parkway to Whatney	62.5	63.8	1.3	3.0	No
417	Rockfield Avenue	Thomas to Bake Parkway	62.5	62.6	0.1	3.0	No
418	Roosevelt	Jeffrey Road to Vision	65.2	66.1	0.9	1.5	No
419	Roosevelt	Yale Avenue to Van Buren	67.9	68.1	0.2	1.5	No
420	Roosevelt	Vision to Bay Tree	64.5	65.9	1.4	3.0	No
421	Roosevelt	Nimitz to Jeffrey Road	65.2	65.8	0.6	1.5	No
422	Roosevelt	Tulip (Road C) to Sand Canyon Avenue	63.7	65.6	1.9	3.0	No
423	Royal Oak	Alton Parkway to Eaglecreek	63.8	64.0	0.2	3.0	No
424	Sand Canyon Avenue	Oak Canyon Drive to Burt Road	70.7	71.9	1.2	1.5	No
425	Sand Canyon Avenue	Irvine Center Drive to Oak Canyon Drive	70.6	71.6	1.0	1.5	No
426	Sand Canyon Avenue	I-405 NB Off-Ramp to Alton Parkway	73.6	74.4	0.8	1.5	No
427	Sand Canyon Avenue	Burt Road to I-5 SB Off-Ramp	71.2	72.6	1.4	1.5	No
428	Sand Canyon Avenue	Marine to I-5 NB Off-Ramp	72.7	74.6	1.9	1.5	Yes
429	Sand Canyon Avenue	Trabuco Road to Towngate	70.0	71.3	1.3	1.5	No
430	Sand Canyon Avenue	Barranca Parkway to Waterworks	69.2	70.6	1.4	1.5	No
431	Sand Canyon Avenue	I-5 SB Off-Ramp to Marine	72.7	73.8	1.1	1.5	No
432	Sand Canyon Avenue	Hospital to Barranca Parkway	69.3	70.4	1.1	1.5	No
433	Sand Canyon Avenue	Nightmist to Roosevelt	73.3	73.4	0.1	1.5	No
434	Sand Canyon Avenue	I-405 SB Off-Ramp to I-405 NB Off-Ramp	72.4	73.4	1.0	1.5	No
435	Sand Canyon Avenue	I-5 NB Off-Ramp to Nightmist	73.2	73.5	0.3	1.5	No
436	Sand Canyon Avenue	Towngate to Irvine Boulevard	69.3	70.6	1.3	1.5	No

Table 11

437	Sand Canyon Avenue	Waterworks to Irvine Center Drive	69.2	70.0	0.8	1.5	No
438	Sand Canyon Avenue	Irvine Boulevard to Portola Parkway	68.0	69.3	1.3	1.5	No
439	Sand Canyon Avenue	Roosevelt to Trabuco Road	72.6	72.8	0.2	1.5	No
440	Sand Canyon Avenue	Alton Parkway to Hospital	69.7	70.5	0.8	1.5	No
441	Sand Canyon/Shady Canyon	Quail Hill Parkway to I-405 SB Ramps	71.3	71.6	0.3	1.5	No
442	Scientific Way	Irvine Center Drive to Wald	54.6	54.9	0.3	5.0	No
443	Shady Canyon Drive	Culver Drive/Bonita Canyon Drive to Cloverfield	68.6	68.8	0.2	1.5	No
444	Shady Canyon Drive	Bommer Canyon Road to Sunnyhill	67.1	67.3	0.2	1.5	No
445	Skyhawk	Great Park Boulevard to Marine Way	52.8	60.2	7.4	5.0	Yes
446	Southwood	Yale Avenue to Colt	60.5	60.5	0.0	3.0	No
447	Southwood	Challenger to Yale Avenue	59.9	60.3	0.4	5.0	No
448	Spectrum Center Drive (Fortune Drive)	Pacifica to Quassar Drive (Spectrum )	61.4	61.9	0.5	3.0	No
449	Spectrum Center Drive (Fortune Drive)	Quassar Drive (Spectrum ) to Gatewayb	62.0	62.4	0.4	3.0	No
450	Sunnyhill	Shady Canyon Drive to Turtle Rock Drive	56.9	57.0	0.1	5.0	No
451	Technology Drive	Barranca Parkway to Alton Parkway	67.0	69.9	2.9	1.5	Yes
452	Technology Drive	Old Laguna Canyon Road to I-5/SR-133 Undercrossing	63.2	67.1	3.9	3.0	Yes
453	Technology Drive	I-5/SR-133 to Barranca Parkway	62.8	66.1	3.3	3.0	Yes
454	Technology Drive	Ada to Alton Parkway	57.8	59.9	2.1	5.0	No
455	Toledo Way	Bake Parkway to City Limits	65.5	65.8	0.3	1.5	No
456	Toledo Way	Goodyear to Bake Parkway	64.5	64.9	0.4	3.0	No
457	Toledo Way	Alton Parkway to Parker	63.9	64.5	0.6	3.0	No
458	Trabuco Road	Keystone to Sand Canyon Avenue	66.7	67.0	0.3	1.5	No
459	Trabuco Road	Jeffrey Road to Keystone	66.7	66.9	0.2	1.5	No
460	Trabuco Road	Culver Drive to I-5 NB Off-Ramp	66.3	66.6	0.3	1.5	No
461	Trabuco Road	Monroe to Yale Avenue	66.3	66.5	0.2	1.5	No
462	Trabuco Road	I-5 NB Off-Ramp to Monroe	66.3	66.5	0.2	1.5	No
463	Trabuco Road	Yale Avenue to Remington	65.7	66.0	0.3	1.5	No
464	Trabuco Road	Remington to Jeffrey Road	65.7	66.0	0.3	1.5	No
465	Turtle Ridge Drive	Federation Way to Bonita Canyon	0.0	68.8	68.8	5.0	Yes
466	Turtle Rock Drive	Ridgeline to Willowleaf	66.9	67.5	0.6	1.5	No
467	Turtle Rock Drive	Silkwood to Sunnyhill	67.0	67.4	0.4	1.5	No
468	Turtle Rock Drive	Canyon Park to Ridgeline	66.7	66.8	0.1	1.5	No
469	Turtle Rock Drive	Sunnyhill to Southernwood	63.9	64.0	0.1	3.0	No
470	Turtle Rock Drive	Campus Drive to Hillgate	63.8	64.0	0.2	3.0	No

Table 11

471	Turtle Rock Drive	Paseo Segovia to Campus Drive	65.3	65.4	0.1	1.5	No
472	University Drive	Golden Glow to Yale Avenue	72.2	72.6	0.4	1.5	No
473	University Drive	Ridgeline to Michelson Drive	72.1	72.3	0.2	1.5	No
474	University Drive	Culver Drive to Golden Glow	72.1	72.5	0.4	1.5	No
475	University Drive	Yale Avenue to Ridgeline	72.0	72.2	0.2	1.5	No
476	University Drive	Michelson Drive to I-405 SB Off-Ramp	72.3	72.4	0.1	1.5	No
477	University Drive	Mesa to Campus Drive	73.3	74.2	0.9	1.5	No
478	University Drive	MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	73.3	74.2	0.9	1.5	No
479	University Drive	California Avenue to Mesa	73.3	74.1	0.8	1.5	No
480	University Drive	Campus Drive to Harvard Avenue	69.5	70.3	0.8	1.5	No
481	University Drive	SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	70.4	71.3	0.9	1.5	No
482	University Drive	SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps	69.2	70.0	0.8	1.5	No
483	University Drive	San Joaquin to Culver Drive	68.7	69.4	0.7	1.5	No
484	University Drive	Harvard Avenue to San Joaquin	68.7	69.4	0.7	1.5	No
485	Valley Oak Drive	Hawkcreek to Barranca Parkway	63.0	68.0	5.0	3.0	Yes
486	Valley Oak Drive	Irvine Center Drive to Oak Canyon Drive	65.2	67.6	2.4	1.5	Yes
487	Valley Oak Drive	Barranca Parkway to Irvine Center Drive	62.9	65.7	2.8	3.0	No
488	Valley Oak Drive	Alton Parkway to Hawkcreek	63.8	65.0	1.2	3.0	No
489	Von Karman Avenue	Marriott to Morse Avenue	68.9	70.6	1.7	1.5	Yes
490	Von Karman Avenue	Michelson Drive to Quartz	68.8	70.4	1.6	1.5	Yes
491	Von Karman Avenue	McGaw Avenue to Alton Parkway	69.3	70.1	0.8	1.5	No
492	Von Karman Avenue	Alton Parkway to Barranca Parkway	68.4	69.7	1.3	1.5	No
493	Von Karman Avenue	Main Street to Anchor	69.2	69.9	0.7	1.5	No
494	Von Karman Avenue	Anchor to McGaw Avenue	69.2	69.9	0.7	1.5	No
495	Von Karman Avenue	Morse to Main Street	69.2	69.9	0.7	1.5	No
496	Von Karman Avenue	Martin to Dupont Drive	67.8	69.2	1.4	1.5	No
497	Von Karman Avenue	Campus Drive to Martin	67.8	69.2	1.4	1.5	No
498	Von Karman Avenue	Dupont Drive to Michelson Drive	67.8	69.2	1.4	1.5	No
499	Walnut Avenue	Jeffrey Road to I-5 SB Off-Ramp	68.9	70.5	1.6	1.5	Yes
500	Walnut Avenue	Myford Road to Jamboree Road SB Off-Ramp	68.6	68.9	0.3	1.5	No
501	Walnut Avenue	The Mall Street to Culver Drive	68.2	68.5	0.3	1.5	No
502	Walnut Avenue	Harvard Avenue to The Mall Street	68.2	68.4	0.2	1.5	No
503	Walnut Avenue	Franciscan Street to Ravenwood Street	68.0	68.1	0.1	1.5	No
504	Walnut Avenue	Ravenwood Street to Yale Avenue	68.0	68.1	0.1	1.5	No

Table 11

505	Walnut Avenue	Culver Drive to Franciscan Street	68.0	68.1	0.1	1.5	No
506	Walnut Avenue	Peters Canyon Road to Harvard Avenue	67.0	67.6	0.6	1.5	No
507	Walnut Avenue	Jamboree Road NB Off-Ramp to Peters Canyon Road	67.0	67.5	0.5	1.5	No
508	Walnut Avenue	Yale Avenue to Kazan Street	66.3	67.0	0.7	1.5	No
509	Walnut Avenue	Wisteria to Jeffrey Road	66.3	67.0	0.7	1.5	No
510	Warner Avenue	Jamboree Road SB Off-ramp to Construction North	69.6	70.1	0.5	1.5	No
511	Warner Avenue	Construction North to Harvard Avenue	67.8	68.4	0.6	1.5	No
512	Warner Avenue	Harvard Avenue to Paseo Westpark	66.1	66.8	0.7	1.5	No
513	Warner Avenue	Santa Ynez to Culver Drive	65.1	65.6	0.5	1.5	No
514	Warner Avenue	Culver Drive to West Yale Loop	64.9	65.1	0.2	3.0	No
515	West Yale Loop	Alton Parkway to Blue Lake North	63.3	64.0	0.7	3.0	No
516	West Yale Loop	Eagle Run to Main Street	63.3	63.8	0.5	3.0	No
517	West Yale Loop	Thunder Run to Yale Avenue	62.7	63.6	0.9	3.0	No
518	West Yale Loop	Main Street to Timber Run	62.7	62.9	0.2	3.0	No
519	West Yale Loop	Yale Avenue to Shorebird	61.8	62.1	0.3	3.0	No
520	West Yale Loop	Warner Avenue to Stonecreek South	61.8	62.4	0.6	3.0	No
521	West Yale Loop	Barranca Parkway to Alton Parkway	61.7	62.4	0.7	3.0	No
522	West Yale Loop	Stonecreek North to Warner Avenue	61.8	62.0	0.2	3.0	No
523	West Yale Loop	Birdsong to Barranca Parkway	61.8	62.2	0.4	3.0	No
524	Westwood	Yorktown to Bryan Avenue	63.2	63.6	0.4	3.0	No
525	Westwood	Bryan Avenue to Leaf	61.3	61.6	0.3	3.0	No
526	Yale Avenue	Deerfield Avenue to Winvale Avenue	68.5	68.6	0.1	1.5	No
527	Yale Avenue	Hicks Canyon Drive to Meadowood	67.2	67.4	0.2	1.5	No
528	Yale Avenue	Walnut Avenue to Roosevelt	70.7	70.9	0.2	1.5	No
529	Yale Avenue	Roosevelt to Trabuco Road	66.9	67.1	0.2	1.5	No
530	Yale Avenue	Irvine Center Drive to Deerfield Avenue	66.5	67.0	0.5	1.5	No
531	Yale Avenue	West Yale Loop to Irvine Center Drive	65.0	65.8	0.8	1.5	No
532	Yale Avenue	Winvale Avenue to Karen Ann Lane	65.6	65.7	0.1	1.5	No
533	Yale Avenue	Karen Ann Lane to Walnut Avenue	65.6	65.7	0.1	1.5	No
534	Yale Avenue	Trabuco Road to Southwood	65.1	65.6	0.5	1.5	No
535	Yale Avenue	Southwood to Bryan Avenue	65.1	65.6	0.5	1.5	No
536	Yale Avenue	Northwood to Irvine Boulevard	64.8	65.3	0.5	3.0	No
537	Yale Avenue	Bryan Avenue to Monticello	64.8	65.2	0.4	3.0	No
538	Yale Avenue	Irvine Boulevard to Park Place	64.1	64.3	0.2	3.0	No

Table 11

539	Yale Avenue	University Drive to Royce	57.9	63.0	5.1	5.0	Yes
540	Yale Court	Arborwood to Portola Parkway	60.0	60.3	0.3	1.5	No

<sup>1</sup> Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use.

<sup>3</sup> Does the Project create an incremental noise level increase exceeding the significance criteria?

Table 12

Table 12: Existing and Conservative Plan Traffic Noise Level Increases

ID	Road	Segment	CNEL at Receiving Land Use (dBA) <sup>2</sup>			Incremental Noise Level Increase Threshold <sup>3</sup>	
			Existing	Conservative	Project Addition	Limit	Exceeded?
1	Ada	Barranca Parkway to Marine Way	0.0	70.8	70.8	5.0	Yes
2	Ada	Alton Parkway to Barranca Parkway	60.3	69.3	9.0	3.0	Yes
3	Alton Parkway	Enterprise to I-5 NB Off-Ramp	71.3	74.1	2.8	1.5	Yes
4	Alton Parkway	I-5 NB Off-Ramp to Technology Drive West	72.1	74.8	2.7	1.5	Yes
5	Alton Parkway	East Yale Loop to Jeffrey Road	71.3	71.8	0.5	1.5	No
6	Alton Parkway	Gateway Boulevard to Enterprise	69.3	72.0	2.7	1.5	Yes
7	Alton Parkway	Jeffrey Road to Royal Oak	70.1	70.9	0.8	1.5	No
8	Alton Parkway	Daimler Street to Red Hill Avenue	63.7	70.7	7.0	3.0	Yes
9	Alton Parkway	Culver Drive to West Yale Loop	70.4	70.7	0.3	1.5	No
10	Alton Parkway	West Yale Loop to Lake Road	70.3	70.7	0.4	1.5	No
11	Alton Parkway	Technology Drive West to Ada	70.2	72.6	2.4	1.5	Yes
12	Alton Parkway	Creek Road to East Yale Loop	70.1	70.6	0.5	1.5	No
13	Alton Parkway	Red Hill Avenue to Von Karman Avenue	68.1	70.5	2.4	1.5	Yes
14	Alton Parkway	Lake Road to Creek Road	70.1	70.4	0.3	1.5	No
15	Alton Parkway	Telemetry to Banting	69.0	70.4	1.4	1.5	No
16	Alton Parkway	Irvine Boulevard to Commercentre	70.3	70.8	0.5	1.5	No
17	Alton Parkway	Jenner to Telemetry	69.0	70.4	1.4	1.5	No
18	Alton Parkway	Irvine Center Drive to Gateway Boulevard	68.6	71.2	2.6	1.5	Yes
19	Alton Parkway	Sand Canyon Avenue to Hospital	72.1	73.7	1.6	1.5	Yes
20	Alton Parkway	Laguna Canyon Road to Jenner	69.0	70.3	1.3	1.5	No
21	Alton Parkway	Technology Drive East to Barranca Pkwy/Muirlands Blvd	69.1	71.2	2.1	1.5	Yes
22	Alton Parkway	Royal Oak to Valley Oak Drive	69.4	70.1	0.7	1.5	No
23	Alton Parkway	Banting to Pacifica	68.4	70.0	1.6	1.5	Yes
24	Alton Parkway	Barranca Pkwy/Muirlands Blvd to Jeronimo Road	70.1	70.9	0.8	1.5	No
25	Alton Parkway	Ada to Technology Drive East	69.2	70.7	1.5	1.5	Yes
26	Alton Parkway	Von Karman Avenue to Jamboree Road	68.7	69.7	1.0	1.5	No
27	Alton Parkway	Jeronimo Road to Hughes	69.8	69.9	0.1	1.5	No
28	Alton Parkway	Hughes to Morgan	69.5	69.8	0.3	1.5	No
29	Alton Parkway	Morgan to Toledo Way	68.8	69.1	0.3	1.5	No

Table 12

30	Alton Parkway	San Marino to Culver Drive	68.8	69.2	0.4	1.5	No
31	Alton Parkway	Jamboree Road to Murphy Avenue	68.0	69.0	1.0	1.5	No
32	Alton Parkway	Hospital to Laguna Canyon Road	70.7	72.0	1.3	1.5	No
33	Alton Parkway	Valley Oak Drive to Sand Canyon Avenue	71.1	71.8	0.7	1.5	No
34	Alton Parkway	Murphy Avenue to Harvard Avenue	68.1	68.8	0.7	1.5	No
35	Alton Parkway	Foster to Irvine Boulevard	68.0	68.7	0.7	1.5	No
36	Alton Parkway	Fairbanks to Foster	67.5	68.5	1.0	1.5	No
37	Alton Parkway	Toledo Way to Bertea	68.2	68.4	0.2	1.5	No
38	Alton Parkway	Pacifica to Meridian	69.7	71.7	2.0	1.5	Yes
39	Alton Parkway	Bertea to Fairbanks	68.1	68.3	0.2	1.5	No
40	Alton Parkway	Meridian to Irvine Center Drive	66.6	68.3	1.7	1.5	Yes
41	Alton Parkway	Paseo Westpark to San Marino	67.9	68.3	0.4	1.5	No
42	Alton Parkway	Harvard Avenue to Paseo Westpark	66.9	67.7	0.8	1.5	No
43	Astor	Lynx to Fairbanks	57.5	67.1	9.6	5.0	Yes
44	Astor	Cadence to Lynx	0.0	65.9	65.9	5.0	Yes
45	Bake Parkway	I-5 NB Off-Ramp to Rockfield Boulevard	75.4	76.7	1.3	1.5	No
46	Bake Parkway	Muirlands Boulevard to Jeronimo Road	72.7	73.0	0.3	1.5	No
47	Bake Parkway	Rockfield Boulevard to Muirlands Boulevard	74.7	75.1	0.4	1.5	No
48	Bake Parkway	Jeronimo Road to Toledo Way	71.9	72.1	0.2	1.5	No
49	Bake Parkway	Toledo Way to Cromwell	71.5	71.7	0.2	1.5	No
50	Bake Parkway	Cromwell to Irvine Boulevard	71.4	71.6	0.2	1.5	No
51	Bake Parkway	Research Drive to I-5 SB Off-Ramp	68.5	69.6	1.1	1.5	No
52	Bake Parkway	Irvine Center Drive to Research Drive	64.1	64.9	0.8	3.0	No
53	Bake Parkway	Lake Forest Drive to Irvine Center Drive	61.9	63.4	1.5	3.0	No
54	Banting	Alton Parkway to Barranca Parkway	57.6	60.3	2.7	5.0	No
55	Barranca Parkway	Pacifica to Irvine Center Drive	70.5	73.3	2.8	1.5	Yes
56	Barranca Parkway	Banting to Pacifica	70.7	72.8	2.1	1.5	Yes
57	Barranca Parkway	I-5 HOV Ramp to Technology Drive West	69.8	73.0	3.2	1.5	Yes
58	Barranca Parkway	Technology Drive West to Ada	70.4	72.7	2.3	1.5	Yes
59	Barranca Parkway	Irvine Center Drive to I-5 HOV Ramp	69.3	72.6	3.3	1.5	Yes
60	Barranca Parkway	Culver Drive to West Yale Loop	71.9	72.3	0.4	1.5	No
61	Barranca Parkway	East Yale Loop to Jeffrey Road	71.7	72.2	0.5	1.5	No
62	Barranca Parkway	West Yale Loop to Lake Road	71.6	72.1	0.5	1.5	No
63	Barranca Parkway	Ada to Alton Parkway	70.2	72.1	1.9	1.5	Yes
64	Barranca Parkway	Lake Road to Creek Road	71.2	71.8	0.6	1.5	No

Table 12

65	Barranca Parkway	Red Hill Avenue to Armstrong Avenue	73.3	74.7	1.4	1.5	No
66	Barranca Parkway	Discovery/Herchel to Banting	69.7	71.6	1.9	1.5	Yes
67	Barranca Parkway	Lyon to East Yale Loop	71.0	71.6	0.6	1.5	No
68	Barranca Parkway	Creek Road to Lyon	70.9	71.5	0.6	1.5	No
69	Barranca Parkway	Von Karman Avenue to Jamboree Road	71.5	72.8	1.3	1.5	No
70	Barranca Parkway	Sand Canyon Avenue to Laguna Canyon Road	68.5	71.1	2.6	1.5	Yes
71	Barranca Parkway	Armstrong Avenue to Von Karman Avenue	72.0	72.5	0.5	1.5	No
72	Barranca Parkway	Valley Oak Drive to Sand Canyon Avenue	69.1	70.8	1.7	1.5	Yes
73	Barranca Parkway	Jamboree Road to Construction Circle	70.1	71.2	1.1	1.5	No
74	Barranca Parkway	Santa Rosa to Culver Drive	69.8	71.0	1.2	1.5	No
75	Barranca Parkway	FedEx to Discovery/Herchel	68.8	70.5	1.7	1.5	Yes
76	Barranca Parkway	Jeffrey Road to Valley Oak Drive	68.3	70.4	2.1	1.5	Yes
77	Barranca Parkway	Laguna Canyon Road to FedEx	68.8	70.4	1.6	1.5	Yes
78	Barranca Parkway	Pullman Street to Red Hill Avenue	72.7	73.7	1.0	1.5	No
79	Barranca Parkway	Construction Circle to Fire Station	69.4	70.6	1.2	1.5	No
80	Barranca Parkway	Fire Station to Harvard Avenue	69.4	70.6	1.2	1.5	No
81	Barranca Parkway	Paseo Westpark to Santa Rosa	69.3	70.6	1.3	1.5	No
82	Barranca Parkway	Harvard Avenue to Paseo Westpark	69.2	70.2	1.0	1.5	No
83	Bay Tree	Trabuco Road to Roosevelt	56.1	57.1	1.0	5.0	No
84	Beacon	Ridge Valley to Benchmark	0.0	59.7	59.7	5.0	Yes
85	Benchmark (LN Street)	Ridge Valley (O Street) to Bosque	0.0	56.5	56.5	5.0	Yes
86	Bison Avenue	SR-73 NB Off-Ramp to California Avenue	68.6	69.6	1.0	1.5	No
87	Bonita Canyon Drive	MacArthur Boulevard to SR-73	70.0	70.3	0.3	1.5	No
88	Bonita Canyon Drive	Turtle Ridge to Shady Canyon Drive	67.5	68.6	1.1	1.5	No
89	Bonita Canyon Drive	Newport Coast Drive to Turtle Ridge	67.5	68.2	0.7	1.5	No
90	Bonita Canyon Drive	SR-73 NB Off-Ramp to Newport Coast Drive	67.5	68.0	0.5	1.5	No
91	Bosque	Cadence to Great Park Boulevard	63.0	65.2	2.2	3.0	No
92	Bosque	Irvine Boulevard to Benchmark (LN Street)	59.7	63.6	3.9	5.0	No
93	Bosque	Benchmark to Cadence	59.7	63.2	3.5	5.0	No
94	Bosque	Great Park Boulevard to Beacon	0.0	56.8	56.8	5.0	Yes
95	Bosque	Beacon to S 5th Street	0.0	56.2	56.2	5.0	Yes
96	Bryan Avenue	Jamboree Road to Market Place	68.7	69.0	0.3	1.5	No
97	Bryan Avenue	Market Place to El Camino Real	68.7	68.9	0.2	1.5	No
98	Bryan Avenue	Rubicon to Culver Drive	68.7	68.8	0.1	1.5	No
99	Bryan Avenue	El Camino Real to Rubicon	68.7	68.8	0.1	1.5	No



Table 12

100	Bryan Avenue	Eastwood to Jeffrey Road	65.8	67.1	1.3	1.5	No
101	Bryan Avenue	Westwood to Yale Avenue	66.3	66.8	0.5	1.5	No
102	Bryan Avenue	Culver Drive to Westwood	66.3	66.7	0.4	1.5	No
103	Bryan Avenue	Yale Avenue to Eastwood	65.8	66.7	0.9	1.5	No
104	Cadence	Pusan to Chinon	64.5	65.6	1.1	3.0	No
105	Cadence	Bosque to Pusan	65.7	65.3	-0.4	1.5	No
106	Cadence	Ridge Valley (O Street) to Bosque	62.6	64.0	1.4	3.0	No
107	Cadence	Chinon to Merit	62.6	62.3	-0.3	3.0	No
108	Cadence	Merit to Astor	0.0	59.4	59.4	5.0	Yes
109	California Avenue	University Drive to Academy Way	64.3	66.2	1.9	3.0	No
110	California Avenue	Campus Drive to Harvard Avenue	63.2	64.2	1.0	3.0	No
111	California Avenue	Theory to Bison Avenue	63.1	63.9	0.8	3.0	No
112	Campus Drive	Carlson Avenue to University Drive	70.9	73.2	2.3	1.5	Yes
113	Campus Drive	University Drive to Bridge Road	70.1	71.8	1.7	1.5	Yes
114	Campus Drive	Jamboree Road to Carlson Avenue	69.0	71.5	2.5	1.5	Yes
115	Campus Drive	Stanford Court to Berkeley Avenue	70.1	71.1	1.0	1.5	No
116	Campus Drive	California Avenue to Culver Drive	68.9	70.9	2.0	1.5	Yes
117	Campus Drive	Berkeley Avenue to Cornell	68.9	70.0	1.1	1.5	No
118	Campus Drive	Martin to Von Karman Avenue	67.5	69.1	1.6	1.5	Yes
119	Campus Drive	Culver Drive to Paseo Montoya (Turtle Rock Drive)	68.5	68.7	0.2	1.5	No
120	Campus Drive	Von Karman Avenue to Teller Avenue	66.8	68.4	1.6	1.5	Yes
121	Campus Drive	MacArthur Boulevard to Martin	67.5	68.2	0.7	1.5	No
122	Campus Drive	Teller Avenue to Jamboree Road	66.8	67.5	0.7	1.5	No
123	Carlson Avenue	Michelson Drive to Campus Drive	64.5	67.9	3.4	3.0	Yes
124	Chinon	Irvine Boulevard to Cadence	56.6	58.8	2.2	5.0	No
125	Creek Road	Alton Parkway to Barranca Parkway	55.3	56.3	1.0	5.0	No
126	Culver Drive	Michelson Drive to I-405 SB Off-Ramp	73.4	74.0	0.6	1.5	No
127	Culver Drive	I-405 SB Off-Ramp to I-405 NB Off Ramp	73.4	73.9	0.5	1.5	No
128	Culver Drive	I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)	73.7	73.9	0.2	1.5	No
129	Culver Drive	Scottsdale Drive to I-5 SB Off- Ramp	73.7	73.8	0.1	1.5	No
130	Culver Drive	I-405 NB Off-Ramp to San Leandro	73.4	73.6	0.2	1.5	No
131	Culver Drive	San Leandro to Main Street	73.2	73.3	0.1	1.5	No
132	Culver Drive	Harvard Avenue to University Drive	72.7	73.4	0.7	1.5	No
133	Culver Drive	Trabuco Road to Farwell Avenue	74.1	74.2	0.1	1.5	No
134	Culver Drive	Alton Parkway to Barranca Parkway	72.9	73.2	0.3	1.5	No

Table 12

135	Culver Drive	Main Street to Alton Parkway	72.7	73.1	0.4	1.5	No
136	Culver Drive	Warner Avenue to Irvine Center Drive	72.7	73.0	0.3	1.5	No
137	Culver Drive	Walnut Avenue to Scottsdale Dive	72.6	72.9	0.3	1.5	No
138	Culver Drive	Barranca Parkway to Warner Avenue	72.6	72.8	0.2	1.5	No
139	Culver Drive	Shady Canyon Drive to Palo Verde	71.4	72.0	0.6	1.5	No
140	Culver Drive	Deerfield Avenue to Walnut Avenue	72.3	72.5	0.2	1.5	No
141	Culver Drive	Sandburg Way to Michelson Drive	71.9	72.5	0.6	1.5	No
142	Culver Drive	Irvine Center Drive to Deerfield Avenue	72.1	72.4	0.3	1.5	No
143	Culver Drive	Palo Verde to Campus Drive	71.4	71.6	0.2	1.5	No
144	Culver Drive	University Drive to Sandburg Way	71.5	72.2	0.7	1.5	No
145	Culver Drive	Farwell Avenue to Bryan Avenue	72.8	73.2	0.4	1.5	No
146	Culver Drive	Campus Drive to High School	71.6	72.1	0.5	1.5	No
147	Culver Drive	High School to Harvard Avenue	71.6	72.0	0.4	1.5	No
148	Culver Drive	Bryan Avenue to Florence	71.5	71.8	0.3	1.5	No
149	Culver Drive	Portola Parkway to Settlers	68.9	71.2	2.3	1.5	Yes
150	Culver Drive	Florence to Irvine Boulevard	71.3	71.7	0.4	1.5	No
151	Culver Drive	Irvine Boulevard to Viewpark	70.0	70.5	0.5	1.5	No
152	Culver Drive	Viewpark to Meadowood	70.0	70.4	0.4	1.5	No
153	Culver Drive	Settlers to Furrow	0.0	68.5	68.5	5.0	Yes
154	Culver Drive	Meadowood to Portola Parkway	68.3	69.0	0.7	1.5	No
155	Discovery Drive	Irvine Center Drive to Laguna Canyon Road	56.6	65.5	8.9	5.0	Yes
156	Discovery Drive	Waterworks Way to Irvine Center Drive	0.0	63.6	63.6	5.0	Yes
157	East Yale Loop	Alton Parkway to Witherspoon	64.6	65.6	1.0	3.0	No
158	East Yale Loop	Osborn Street to Barranca Parkway	64.3	65.4	1.1	3.0	No
159	East Yale Loop	Yale Avenue to Springbrook South	62.3	65.0	2.7	3.0	No
160	East Yale Loop	Springbrook North to Alton Parkway	62.3	63.6	1.3	3.0	No
161	East Yale Loop	Woodspring to Yale Avenue	62.3	62.8	0.5	3.0	No
162	East Yale Loop	Barranca Parkway to Eastshore	62.3	62.4	0.1	3.0	No
163	Eastwood	Bryan Avenue to Monticello	59.5	60.8	1.3	5.0	No
164	Eastwood	Columbus to Bryan Avenue	58.5	58.8	0.3	5.0	No
165	El Camino Real	Jamboree Road to Alliance (SR-261 Bridge)	66.9	67.1	0.2	1.5	No
166	El Camino Real North	El Camino Real to Bryan Avenue	62.2	62.4	0.2	3.0	No
167	Fairbanks	Alton Parkway to Astor	61.3	69.8	8.5	3.0	Yes
168	Fairbanks	Irvine Boulevard to Alton Parkway	0.0	66.9	66.9	5.0	Yes
169	Fairchild Road	MacArthur Boulevard to Jamboree Road	63.3	64.0	0.7	3.0	No

Table 12

170	Gateway Boulevard	Alton Parkway to Irvine Center Drive	57.0	63.5	6.5	5.0	Yes
171	Gateway Boulevard	Spectrum Center Drive (Fortune Drive) to Alton Parkway	59.4	62.3	2.9	5.0	No
172	Gateway Boulevard	Irvine Center Drive to Meridian	56.8	59.2	2.4	5.0	No
173	Great Park Boulevard	Sand Canyon to Ridge Valley	70.5	74.6	4.1	1.5	Yes
174	Great Park Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	64.0	70.3	6.3	3.0	Yes
175	Great Park Boulevard (EB)	Bosque to Skyhawk	0.0	69.0	69.0	5.0	Yes
176	Great Park Boulevard (WB)	Bosque to Skyhawk	0.0	68.4	68.4	5.0	Yes
177	Harvard Avenue	University Drive to Michelson Drive	71.2	72.0	0.8	1.5	No
178	Harvard Avenue	Michelson Drive to Coronado	69.5	70.4	0.9	1.5	No
179	Harvard Avenue	San Marino to Alton Parkway	69.4	70.2	0.8	1.5	No
180	Harvard Avenue	Coronado to Main Street	69.3	70.1	0.8	1.5	No
181	Harvard Avenue	San Carlo to San Marino	69.4	70.1	0.7	1.5	No
182	Harvard Avenue	Main Street to San Carlo	69.3	70.0	0.7	1.5	No
183	Harvard Avenue	Alton Parkway to San Leon	68.5	68.8	0.3	1.5	No
184	Harvard Avenue	San Juan to Barranca Parkway	68.5	68.8	0.3	1.5	No
185	Harvard Avenue	San Leon to San Juan	68.4	68.6	0.2	1.5	No
186	Harvard Avenue	Irvine Center Drive to Deerfield Avenue	65.5	67.5	2.0	1.5	Yes
187	Harvard Avenue	Deerfield Avenue to Poplar Street	65.5	67.4	1.9	1.5	Yes
188	Harvard Avenue	Barranca Parkway to Warner Avenue	67.6	67.9	0.3	1.5	No
189	Harvard Avenue	Bridge Road to University Drive	67.2	67.9	0.7	1.5	No
190	Harvard Avenue	Paseo Westpark to Irvine Center Drive	66.1	67.8	1.7	1.5	Yes
191	Harvard Avenue	Poplar Street to Walnut Avenue	66.8	68.8	2.0	1.5	Yes
192	Harvard Avenue	California Avenue to Berkeley Avenue	66.1	67.4	1.3	1.5	No
193	Harvard Avenue	Culver Drive to California Avenue	66.1	67.3	1.2	1.5	No
194	Harvard Avenue	Berkeley to Bridge Road	66.1	67.2	1.1	1.5	No
195	Harvard Avenue	Warner Avenue to Paseo Westpark	65.9	66.7	0.8	1.5	No
196	Hicks Canyon Drive	Delamesa to Yale Avenue	58.2	58.2	0.0	5.0	No
197	Hornet (5th St)	Ridge Valley (O Street) to Bosque	0.0	57.5	57.5	5.0	Yes
198	Hubble	Irvine Center Drive to Bunsen	55.5	55.9	0.4	5.0	No
199	Irvine Boulevard	SR-133 NB Off- Ramp to Ridge Valley (O Street)	72.1	72.2	0.1	1.5	No
200	Irvine Boulevard	SR-133 SB Off-Ramp to SR-133 NB Off-Ramp	72.0	72.2	0.2	1.5	No
201	Irvine Boulevard	Sand Canyon to SR-133 SB Off-Ramp	72.9	73.0	0.1	1.5	No
202	Irvine Boulevard	Merit to Alton	71.4	71.6	0.2	1.5	No
203	Irvine Boulevard	Journey to Sand Canyon Avenue	71.4	71.6	0.2	1.5	No
204	Irvine Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	70.9	71.1	0.2	1.5	No

Table 12

205	Irvine Boulevard	Pusan Way to Chinon (B Street)	70.8	71.0	0.2	1.5	No
206	Irvine Boulevard	Palo Lado to Yale Avenue	70.4	71.2	0.8	1.5	No
207	Irvine Boulevard	Culver Drive to Palo Lado	70.5	71.2	0.7	1.5	No
208	Irvine Boulevard	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.5	71.1	0.6	1.5	No
209	Irvine Boulevard	Old Myford Road to Market Place	70.3	71.1	0.8	1.5	No
210	Irvine Boulevard	Bosque (LY Street) to Modjeska	70.5	71.1	0.6	1.5	No
211	Irvine Boulevard	Jamboree Road to Old Myford Road	70.3	71.0	0.7	1.5	No
212	Irvine Boulevard	Market Place to SR-261 SB Off-Ramp	70.3	71.0	0.7	1.5	No
213	Irvine Boulevard	Jeffrey Road to Groveland	70.6	70.9	0.3	1.5	No
214	Irvine Boulevard	Bake Parkway to Lake Forest Drive	69.8	70.5	0.7	1.5	No
215	Irvine Boulevard	Independence Way (The Groves)/ The Groves to Jeffrey Road	70.2	70.7	0.5	1.5	No
216	Irvine Boulevard	Chinon (B Street) to Merit	70.2	70.5	0.3	1.5	No
217	Irvine Boulevard	SR-261 NB Off-Ramp to Central Park	70.1	70.6	0.5	1.5	No
218	Irvine Boulevard	Pueblo Norte to Independence Way (The Groves)/ Parkwood	69.9	70.5	0.6	1.5	No
219	Irvine Boulevard	Yale Avenue to Pueblo Norte	69.9	70.4	0.5	1.5	No
220	Irvine Boulevard	Modjeska to Pusan Way	70.0	70.2	0.2	1.5	No
221	Irvine Boulevard	Central Park Avenue to Culver Drive	69.5	70.0	0.5	1.5	No
222	Irvine Boulevard	Parker to Bake Parkway	69.0	69.6	0.6	1.5	No
223	Irvine Boulevard	Alton Parkway to Fairbanks	68.4	68.6	0.2	1.5	No
224	Irvine Center Drive	Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp	71.3	72.7	1.4	1.5	No
225	Irvine Center Drive	Orange Tree to Valley Oak Drive	69.7	72.0	2.3	1.5	Yes
226	Irvine Center Drive	I-405 SB Off-Ramp to Research	70.9	72.2	1.3	1.5	No
227	Irvine Center Drive	Irvine Valley College to Orange Tree	69.7	71.9	2.2	1.5	Yes
228	Irvine Center Drive	Fontaine Avenue to Jeffrey Road	69.5	71.7	2.2	1.5	Yes
229	Irvine Center Drive	Culver Drive to Deerwood	69.7	71.6	1.9	1.5	Yes
230	Irvine Center Drive	Deerwood to Yale Avenue	69.6	71.6	2.0	1.5	Yes
231	Irvine Center Drive	Yale Avenue to Fontaine Avenue	69.4	71.6	2.2	1.5	Yes
232	Irvine Center Drive	Jeffrey Road to Irvine Valley College	69.7	71.5	1.8	1.5	Yes
233	Irvine Center Drive	Alton Parkway to Spectrum	68.9	71.3	2.4	1.5	Yes
234	Irvine Center Drive	Spectrum to Pacifica	68.9	71.3	2.4	1.5	Yes
235	Irvine Center Drive	Hearthstone to Culver Drive	69.2	71.0	1.8	1.5	Yes
236	Irvine Center Drive	Charter to Barranca Parkway	68.1	70.9	2.8	1.5	Yes
237	Irvine Center Drive	Jamboree Road to Harvard Avenue	69.7	70.6	0.9	1.5	No
238	Irvine Center Drive	Pacifica to Entertainment (Enterprise/Fortune)	69.1	70.7	1.6	1.5	Yes
239	Irvine Center Drive	Valley Oak Drive to Sand Canyon Avenue	68.1	70.7	2.6	1.5	Yes

Table 12

240	Irvine Center Drive	Harvard Avenue to Hearthstone	69.2	70.3	1.1	1.5	No
241	Irvine Center Drive	Research to Hubble	67.9	69.8	1.9	1.5	Yes
242	Irvine Center Drive	Barranca Parkway to Gateway Boulevard	66.9	70.1	3.2	1.5	Yes
243	Irvine Center Drive	Bake Parkway to Muller	67.9	69.7	1.8	1.5	Yes
244	Irvine Center Drive	Discovery to Charter	67.3	70.2	2.9	1.5	Yes
245	Irvine Center Drive	Hubble to Bake Parkway	67.8	69.5	1.7	1.5	Yes
246	Irvine Center Drive	Muller to Tesla	67.7	69.3	1.6	1.5	Yes
247	Irvine Center Drive	Sand Canyon Avenue to Odyssey	67.6	69.4	1.8	1.5	Yes
248	Irvine Center Drive	Tesla to Scientific Way	67.1	68.9	1.8	1.5	Yes
249	Irvine Center Drive	Scientific Way to Lake Forest Drive	67.2	68.7	1.5	1.5	Yes
250	Irvine Center Drive	Gateway Boulevard to Alton Parkway	66.7	68.8	2.1	1.5	Yes
251	Irvine Center Drive	Laguna Canyon Road to Discovery	66.8	68.8	2.0	1.5	Yes
252	Irvine Center Drive	Odyssey to Laguna Canyon Road	66.8	68.8	2.0	1.5	Yes
253	Irvine Center Drive (Edinger)	Redhill Avenue to Jamboree Road	69.6	71.0	1.4	1.5	No
254	Jamboree Road	I-5 SB Off-Ramp to I-5 NB Off-Ramp	74.3	74.5	0.2	1.5	No
255	Jamboree Road	I-405 SB Off-Ramp to I-405 NB Off Ramp	75.1	75.6	0.5	1.5	No
256	Jamboree Road	Walnut Avenue to Michelle Drive	73.5	73.9	0.4	1.5	No
257	Jamboree Road	I-405 NB Off-Ramp to Main Street	76.5	77.0	0.5	1.5	No
258	Jamboree Road	Michelle Drive to I-5 SB Off-Ramp	73.5	73.6	0.1	1.5	No
259	Jamboree Road	Main Street to Kelvin Avenue	75.7	76.4	0.7	1.5	No
260	Jamboree Road	Michelson Drive to I-405 SB Off-Ramp	73.6	74.4	0.8	1.5	No
261	Jamboree Road	Kelvin Avenue to McGaw Avenue	75.5	76.0	0.5	1.5	No
262	Jamboree Road	McGaw Avenue to Alton Parkway	75.4	76.0	0.6	1.5	No
263	Jamboree Road	Birch Street to Campus Drive	72.1	73.0	0.9	1.5	No
264	Jamboree Road	Dupont Drive to Michelson Drive	73.3	73.9	0.6	1.5	No
265	Jamboree Road	Alton Parkway to Beckman	75.2	75.6	0.4	1.5	No
266	Jamboree Road	Fairchild Road to Birch Street	72.2	73.5	1.3	1.5	No
267	Jamboree Road	Beckman to Barranca Parkway	75.0	75.3	0.3	1.5	No
268	Jamboree Road	I-5 NB Off-Ramp to El Camino Real	74.9	75.1	0.2	1.5	No
269	Jamboree Road	Campus Drive to Dupont Drive	72.5	73.2	0.7	1.5	No
270	Jamboree Road	El Camino Real to West Drive	74.9	75.0	0.1	1.5	No
271	Jamboree Road	West Drive to Bryan Avenue	74.9	74.9	0.0	1.5	No
272	Jamboree Road	Bryan Avenue to Irvine Boulevard	74.5	74.6	0.1	1.5	No
273	Jamboree Road	Koll Center to Fairchild Road	71.7	72.8	1.1	1.5	No
274	Jamboree Road	MacArthur Boulevard to Koll Center	71.8	72.8	1.0	1.5	No

Table 12

275	Jamboree Road	Irvine Boulevard to Portola Parkway	70.0	70.7	0.7	1.5	No
276	Jamboree Road	Warner Avenue to Edinger Avenue	79.0	79.2	0.2	1.5	No
277	Jamboree Road	Barranca Parkway to Warner Avenue	78.1	78.3	0.2	1.5	No
278	Jamboree Road	Edinger Avenue to Walnut Avenue	77.8	78.0	0.2	1.5	No
279	Jeffrey Road	Walnut Avenue to I-5 NB Off-Ramp	70.9	71.4	0.5	1.5	No
280	Jeffrey Road	I-5 NB Off-Ramp to Roosevelt	71.8	72.3	0.5	1.5	No
281	Jeffrey Road	Poplar (Meadows) to Walnut Avenue	70.4	70.9	0.5	1.5	No
282	Jeffrey Road	Alton Parkway to Barranca Parkway	70.3	70.9	0.6	1.5	No
283	Jeffrey Road	Irvine Center Drive to Poplar (Meadows)	70.2	70.7	0.5	1.5	No
284	Jeffrey Road	I-405 NB Off-Ramp to Quail Creek	70.4	70.9	0.5	1.5	No
285	Jeffrey Road	Barranca Parkway to Irvine Valley College	70.3	70.7	0.4	1.5	No
286	Jeffrey Road	Quail Creek to Alton Parkway	70.4	70.8	0.4	1.5	No
287	Jeffrey Road	Irvine Valley College to Irvine Center Drive	70.1	70.5	0.4	1.5	No
288	Jeffrey Road	Trabuco Road to Hideaway	69.4	69.6	0.2	1.5	No
289	Jeffrey Road	Hideaway to Bryan Avenue	69.4	69.6	0.2	1.5	No
290	Jeffrey Road	Roosevelt to Grove	70.0	70.4	0.4	1.5	No
291	Jeffrey Road	Grove to Trabuco Road	70.0	70.2	0.2	1.5	No
292	Jeffrey Road	Bryan Avenue to Irvine Boulevard	68.1	68.5	0.4	1.5	No
293	Jeffrey Road	Encore to Portola Parkway	64.0	65.8	1.8	3.0	No
294	Jeffrey Road	Irvine Boulevard to Encore	64.0	65.5	1.5	3.0	No
295	Jeronimo Road	Goodyear to Bake Parkway	64.4	64.6	0.2	3.0	No
296	Jeronimo Road	Alton Parkway to Goodyear	64.1	64.3	0.2	3.0	No
297	Laguna Canyon Road	Old Laguna Canyon Road to Lake Forest Drive	72.6	73.3	0.7	1.5	No
298	Laguna Canyon Road	Laguna Canyon Freeway to Quail Hill Parkway	67.7	69.9	2.2	1.5	Yes
299	Laguna Canyon Road	Discovery to Sand Canyon Avenue	64.8	69.5	4.7	3.0	Yes
300	Laguna Canyon Road	I-405 Overcrossing to Pasteur	66.0	67.9	1.9	1.5	Yes
301	Laguna Canyon Road	Irvine Center Drive to Discovery	63.6	69.0	5.4	3.0	Yes
302	Laguna Canyon Road	Quail Hill Parkway to I-405 Overcrossing	66.0	67.9	1.9	1.5	Yes
303	Laguna Canyon Road	Pasteur to Alton Parkway	65.5	67.0	1.5	1.5	Yes
304	Laguna Canyon Road	Waterworks to Irvine Center Drive	64.5	67.5	3.0	3.0	Yes
305	Laguna Canyon Road	Alton Parkway to Barranca Parkway	64.8	66.3	1.5	3.0	No
306	Laguna Canyon Road	Barranca Parkway to Waterworks	63.9	66.2	2.3	3.0	No
307	Lake Forest Drive	Hidden Canyon to Laguna Canyon Road	68.3	69.4	1.1	1.5	No
308	Lake Forest Drive	Bake Parkway to Hidden Canyon (Romano)	68.3	69.3	1.0	1.5	No
309	Lake Forest Drive	Tesla to Bake Parkway	65.3	66.4	1.1	1.5	No

Table 12

310	Lake Road	Alton Parkway to Barranca Parkway	59.0	59.2	0.2	5.0	No
311	Lynx	Irvine Boulevard to Astor	0.0	53.2	53.2	5.0	Yes
312	MacArthur Boulevard	I-405 SB Off-Ramp to Michelson Drive	76.0	76.7	0.7	1.5	No
313	MacArthur Boulevard	Main Street to I-405 NB Off-Ramp	75.8	76.7	0.9	1.5	No
314	MacArthur Boulevard	I-405 NB Off-Ramp and I-405 SB Off-Ramp	75.7	76.6	0.9	1.5	No
315	MacArthur Boulevard	Jamboree Road to Fairchild Road	69.7	69.9	0.2	1.5	No
316	MacArthur Boulevard	Fairchild Road to University Drive	69.7	69.8	0.1	1.5	No
317	MacArthur Boulevard	Fitch to Red Hill Avenue	70.4	70.5	0.1	1.5	No
318	MacArthur Boulevard	Michelson Drive to Douglas	71.3	72.2	0.9	1.5	No
319	MacArthur Boulevard	Douglas to Campus Drive	71.3	72.1	0.8	1.5	No
320	MacArthur Boulevard	Skypark to Main Street	69.0	69.5	0.5	1.5	No
321	MacArthur Boulevard	Redhill Avenue to Skypark	68.0	68.3	0.3	1.5	No
322	MacArthur Boulevard	Birch Street to Jamboree Road	66.5	67.1	0.6	1.5	No
323	MacArthur Boulevard	Campus Drive to Birch Street	68.5	69.3	0.8	1.5	No
324	Main Street	Gillette Avenue to Von Karman Avenue	69.4	70.9	1.5	1.5	Yes
325	Main Street	MacArthur Boulevard to Mercantile	69.4	70.3	0.9	1.5	No
326	Main Street	Executive Park to MacArthur Boulevard	67.7	68.4	0.7	1.5	No
327	Main Street	Von Karman Avenue to Cartwright	67.2	68.5	1.3	1.5	No
328	Main Street	McDermott to Red Hill Avenue	67.9	68.1	0.2	1.5	No
329	Main Street	Red Hill Avenue to Executive Circle	67.7	68.0	0.3	1.5	No
330	Main Street	Jamboree Road to Union	67.4	67.8	0.4	1.5	No
331	Main Street	Culver Drive to West Yale Loop	67.0	67.2	0.2	1.5	No
332	Main Street	Siglo to Jamboree Road	67.2	67.7	0.5	1.5	No
333	Main Street	Veneto to Harvard Avenue	67.4	67.5	0.1	1.5	No
334	Main Street	Paseo Westpark to Culver Drive	66.2	66.3	0.1	1.5	No
335	Main Street	Harvard Avenue to San Mateo	66.2	66.3	0.1	1.5	No
336	Marine Way	Sand Canyon Avenue to Ridge Valley (O Street)	67.8	72.3	4.5	1.5	Yes
337	Marine Way	Alton Parkway to Bake Parkway	0.0	69.4	69.4	5.0	Yes
338	Marine Way	Lynx to Barranca Parkway	0.0	69.3	69.3	5.0	Yes
339	Marine Way	County Access to Treble	59.3	68.5	9.2	5.0	Yes
340	Marine Way	Ridge Valley (O Street) to Skyhawk	62.0	68.3	6.3	3.0	Yes
341	Marine Way	Skyhawk to County Access	59.3	67.4	8.1	5.0	Yes
342	Marine Way	Barranca Parkway to Alton Parkway	52.7	66.8	14.1	5.0	Yes
343	Marine Way	Treble to Lynx	0.0	66.5	66.5	5.0	Yes
344	McGaw Avenue	Von Karman Avenue to Jamboree Road	62.2	64.5	2.3	3.0	No

Table 12

345	McGaw Avenue	Red Hill Avenue to Von Karman Avenue	62.1	64.3	2.2	3.0	No
346	McGaw Avenue	Daimler to Red Hill Avenue	61.0	62.4	1.4	3.0	No
347	McGaw Avenue	Jamboree Road to Murphy Avenue	57.6	59.6	2.0	5.0	No
348	Meadowood	Culver Drive to Canyonwood	59.5	59.8	0.3	5.0	No
349	Meridian	Spectrum to Alton Parkway	54.7	55.6	0.9	5.0	No
350	Meridian	Alton Parkway to Gateway Boulevard	53.5	54.7	1.2	5.0	No
351	Merit	Irvine Boulevard to Cadence	59.3	58.0	-1.3	5.0	No
352	Michelson Drive	Riparian to Harvard Avenue	66.7	68.3	1.6	1.5	Yes
353	Michelson Drive	Almond Tree Lane to Yale Avenue	66.3	67.2	0.9	1.5	No
354	Michelson Drive	Von Karman Avenue to Obsidian	66.7	68.2	1.5	1.5	Yes
355	Michelson Drive	Parkside to Culver Drive	66.2	67.8	1.6	1.5	Yes
356	Michelson Drive	Gillman to Seton/Sandburg Way	66.3	66.9	0.6	1.5	No
357	Michelson Drive	Carlson to Prince	65.4	67.3	1.9	1.5	Yes
358	Michelson Drive	MacArthur Boulevard to Dupont Drive	66.7	67.5	0.8	1.5	No
359	Michelson Drive	Harvard Avenue to Parkside	66.2	66.8	0.6	1.5	No
360	Michelson Drive	Bixby to Von Karman Avenue	64.9	66.8	1.9	3.0	No
361	Michelson Drive	Jamboree Road to Carlson	68.0	69.6	1.6	1.5	Yes
362	Michelson Drive	Teller to Jamboree Road	68.7	69.6	0.9	1.5	No
363	Michelson Drive	Jordan East to University Drive	66.6	67.1	0.5	1.5	No
364	Michelson Drive	Culver Drive to Angell	65.9	66.3	0.4	1.5	No
365	Modjeska (A Street)	Portola Springs to Irvine Boulevard	70.7	71.7	1.0	1.5	No
366	Modjeska (A Street)	South of Irvine Boulevard	61.4	61.1	-0.3	3.0	No
367	Muirlands Boulevard	Bake Parkway to City Limits	66.4	67.2	0.8	1.5	No
368	Muirlands Boulevard	Alton Parkway to Sterling	66.1	66.3	0.2	1.5	No
369	Muirlands Boulevard	Wrigley to Bake Parkway	66.1	66.3	0.2	1.5	No
370	Newport Coast Drive	SR-73 NB Off-Ramp to Turtle Ridge	65.9	66.6	0.7	1.5	No
371	Newport Coast Drive	Turtle Crest to Bonita Canyon Drive	65.0	65.1	0.1	1.5	No
372	Nightmist	Sand Canyon Avenue to Tulip (Road C)	60.8	61.8	1.0	3.0	No
373	Northwood	Yale Avenue to Savannah	62.3	62.5	0.2	3.0	No
374	Northwood	Goldrush to Yale Avenue	60.5	61.5	1.0	3.0	No
375	Oak Canyon Drive	Valley Oak Drive to Sand Canyon Avenue	66.2	69.7	3.5	1.5	Yes
376	Pacifica	Gateway to Barranca Parkway	63.3	65.3	2.0	3.0	No
377	Pacifica	Alton Parkway to Gateway	61.8	64.1	2.3	3.0	No
378	Pacifica	Irvine Center Drive to Fortune Drive (Spectrum Center Drive)	61.7	62.7	1.0	3.0	No
379	Pacifica	Meridian to Alton Parkway	58.1	60.9	2.8	5.0	No



Table 12

380	Park Place	Christamon South to Yale Avenue	56.8	57.0	0.2	5.0	No
381	Portola Parkway	Bee Canyon Access Road to Sand Canyon Avenue	70.3	71.7	1.4	1.5	No
382	Portola Parkway	Jeffrey Road to Bee Canyon Access Road	70.3	71.7	1.4	1.5	No
383	Portola Parkway	Arrowhead to Ridge Valley Parkway	69.6	71.4	1.8	1.5	Yes
384	Portola Parkway	Sand Canyon Avenue to Arrowhead	69.6	71.1	1.5	1.5	Yes
385	Portola Parkway	Portola Springs to SR-241 SB Off-Ramp	65.5	70.1	4.6	1.5	Yes
386	Portola Parkway	Gatepark to Culver Drive	69.6	70.7	1.1	1.5	No
387	Portola Parkway	ETC-6 (SR-261) NB Off-Ramp to Gatepark	69.6	70.7	1.1	1.5	No
388	Portola Parkway	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	69.6	70.6	1.0	1.5	No
389	Portola Parkway	Jamboree Road to Bellevue	69.6	70.5	0.9	1.5	No
390	Portola Parkway	Bellevue to ETC-6 (SR-261) SB Off-Ramp	69.6	70.5	0.9	1.5	No
391	Portola Parkway	Yale Avenue to Jeffrey Road	68.6	70.2	1.6	1.5	Yes
392	Portola Parkway	Culver Drive to Yale Avenue	68.6	69.7	1.1	1.5	No
393	Portola Parkway	Silverado to Portola Springs	66.5	68.6	2.1	1.5	Yes
394	Pusan	Irvine Boulevard to Cadence	54.0	56.2	2.2	5.0	No
395	Quail Hill Parkway	Shady Canyon Drive to Passage	67.3	67.5	0.2	1.5	No
396	Quail Hill Parkway	East Knollcrest to Laguna Canyon Road	64.8	65.4	0.6	3.0	No
397	Quassar Drive (Spectrum)	Irvine Center Drive to Spectrum Center Drive (Fortune)	54.4	54.9	0.5	5.0	No
398	Red Hill Avenue	MacArthur Boulevard to McGaw Avenue	70.8	71.6	0.8	1.5	No
399	Red Hill Avenue	I-405 Over Crossing to Main Street	69.6	70.2	0.6	1.5	No
400	Red Hill Avenue	Alton Parkway to Deere Avenue	69.5	70.1	0.6	1.5	No
401	Red Hill Avenue	McGaw Avenue to Alton Parkway	69.3	69.9	0.6	1.5	No
402	Red Hill Avenue	Deere Avenue to Barranca Parkway	69.3	69.8	0.5	1.5	No
403	Red Hill Avenue	Skypark East to MacArthur Boulevard	70.2	71.4	1.2	1.5	No
404	Red Hill Avenue	Main Street to Skypark East	69.6	70.8	1.2	1.5	No
405	Research Drive	Hubble to Bake Parkway	65.4	69.6	4.2	1.5	Yes
406	Research Drive	Scientific to Lake Forest Drive	65.6	67.4	1.8	1.5	Yes
407	Research Drive	Bake Parkway to Muller	66.2	66.7	0.5	1.5	No
408	Research Drive	Irvine Center Drive to Bunsen	64.9	65.7	0.8	3.0	No
409	Ridge Valley (O Street)	Irvine Boulevard to Trabuco Road (Great Park Boulevard)	65.5	67.3	1.8	1.5	Yes
410	Ridge Valley (O Street)	Portola Parkway to Irvine Boulevard	65.9	66.4	0.5	1.5	No
411	Ridge Valley (O Street)	Trabuco Road (Great Park Boulevard) to Marine Way	65.8	66.0	0.2	1.5	No
412	Ridge Valley (O Street)	Ranchland to Portola Parkway	58.0	58.1	0.1	5.0	No
413	Ridgeline Drive	Concordia East to University Drive	67.7	68.8	1.1	1.5	No
414	Ridgeline Drive	Turtle Rock Drive to San Simeon	67.7	68.5	0.8	1.5	No

Table 12

415	Rockfield Avenue	Whatney to McLaren	66.3	67.7	1.4	1.5	No
416	Rockfield Avenue	Bake Parkway to Whatney	62.5	64.3	1.8	3.0	No
417	Rockfield Avenue	Thomas to Bake Parkway	62.5	63.1	0.6	3.0	No
418	Roosevelt	Jeffrey Road to Vision	65.2	66.6	1.4	1.5	No
419	Roosevelt	Yale Avenue to Van Buren	67.9	68.3	0.4	1.5	No
420	Roosevelt	Vision to Bay Tree	64.5	66.3	1.8	3.0	No
421	Roosevelt	Nimitz to Jeffrey Road	65.2	65.9	0.7	1.5	No
422	Roosevelt	Tulip (Road C) to Sand Canyon Avenue	63.7	65.6	1.9	3.0	No
423	Royal Oak	Alton Parkway to Eaglecreek	63.8	64.0	0.2	3.0	No
424	Sand Canyon Avenue	Oak Canyon Drive to Burt Road	70.7	72.2	1.5	1.5	Yes
425	Sand Canyon Avenue	Irvine Center Drive to Oak Canyon Drive	70.6	72.0	1.4	1.5	No
426	Sand Canyon Avenue	I-405 NB Off-Ramp to Alton Parkway	73.6	74.7	1.1	1.5	No
427	Sand Canyon Avenue	Burt Road to I-5 SB Off-Ramp	71.2	72.7	1.5	1.5	Yes
428	Sand Canyon Avenue	Marine to I-5 NB Off-Ramp	72.7	74.6	1.9	1.5	Yes
429	Sand Canyon Avenue	Trabuco Road to Towngate	70.0	71.0	1.0	1.5	No
430	Sand Canyon Avenue	Barranca Parkway to Waterworks	69.2	70.9	1.7	1.5	Yes
431	Sand Canyon Avenue	I-5 SB Off-Ramp to Marine	72.7	73.9	1.2	1.5	No
432	Sand Canyon Avenue	Hospital to Barranca Parkway	69.3	70.8	1.5	1.5	Yes
433	Sand Canyon Avenue	Nightmist to Roosevelt	73.3	73.5	0.2	1.5	No
434	Sand Canyon Avenue	I-405 SB Off-Ramp to I-405 NB Off-Ramp	72.4	73.6	1.2	1.5	No
435	Sand Canyon Avenue	I-5 NB Off-Ramp to Nightmist	73.2	73.5	0.3	1.5	No
436	Sand Canyon Avenue	Towngate to Irvine Boulevard	69.3	70.3	1.0	1.5	No
437	Sand Canyon Avenue	Waterworks to Irvine Center Drive	69.2	70.2	1.0	1.5	No
438	Sand Canyon Avenue	Irvine Boulevard to Portola Parkway	68.0	69.2	1.2	1.5	No
439	Sand Canyon Avenue	Roosevelt to Trabuco Road	72.6	72.8	0.2	1.5	No
440	Sand Canyon Avenue	Alton Parkway to Hospital	69.7	70.8	1.1	1.5	No
441	Sand Canyon/Shady Canyon	Quail Hill Parkway to I-405 SB Ramps	71.3	71.8	0.5	1.5	No
442	Scientific Way	Irvine Center Drive to Wald	54.6	55.0	0.4	5.0	No
443	Shady Canyon Drive	Culver Drive/Bonita Canyon Drive to Cloverfield	68.6	69.3	0.7	1.5	No
444	Shady Canyon Drive	Bommer Canyon Road to Sunnyhill	67.1	67.7	0.6	1.5	No
445	Skyhawk	Great Park Boulevard to Marine Way	52.8	59.6	6.8	5.0	Yes
446	Southwood	Yale Avenue to Colt	60.5	60.6	0.1	3.0	No
447	Southwood	Challenger to Yale Avenue	59.9	60.4	0.5	5.0	No
448	Spectrum Center Drive (Fortune Drive)	Pacifica to Quassar Drive (Spectrum )	61.4	62.0	0.6	3.0	No
449	Spectrum Center Drive (Fortune Drive)	Quassar Drive (Spectrum ) to Gatewayb	62.0	62.5	0.5	3.0	No

Table 12

450	Sunnyhill	Shady Canyon Drive to Turtle Rock Drive	56.9	57.7	0.8	5.0	No
451	Technology Drive	Barranca Parkway to Alton Parkway	67.0	70.8	3.8	1.5	Yes
452	Technology Drive	Old Laguna Canyon Road to I-5/SR-133 Undercrossing	63.2	69.6	6.4	3.0	Yes
453	Technology Drive	I-5/SR-133 to Barranca Parkway	62.8	69.4	6.6	3.0	Yes
454	Technology Drive	Ada to Alton Parkway	57.8	63.7	5.9	5.0	Yes
455	Toledo Way	Bake Parkway to City Limits	65.5	65.6	0.1	1.5	No
456	Toledo Way	Goodyear to Bake Parkway	64.5	64.7	0.2	3.0	No
457	Toledo Way	Alton Parkway to Parker	63.9	64.5	0.6	3.0	No
458	Trabuco Road	Keystone to Sand Canyon Avenue	66.7	67.2	0.5	1.5	No
459	Trabuco Road	Jeffrey Road to Keystone	66.7	67.1	0.4	1.5	No
460	Trabuco Road	Culver Drive to I-5 NB Off-Ramp	66.3	66.8	0.5	1.5	No
461	Trabuco Road	Monroe to Yale Avenue	66.3	66.8	0.5	1.5	No
462	Trabuco Road	I-5 NB Off-Ramp to Monroe	66.3	66.7	0.4	1.5	No
463	Trabuco Road	Yale Avenue to Remington	65.7	66.4	0.7	1.5	No
464	Trabuco Road	Remington to Jeffrey Road	65.7	66.1	0.4	1.5	No
465	Turtle Ridge Drive	Federation Way to Bonita Canyon	0.0	68.7	68.7	5.0	Yes
466	Turtle Rock Drive	Ridgeline to Willowleaf	66.9	67.9	1.0	1.5	No
467	Turtle Rock Drive	Silkwood to Sunnyhill	67.0	67.8	0.8	1.5	No
468	Turtle Rock Drive	Canyon Park to Ridgeline	66.7	67.1	0.4	1.5	No
469	Turtle Rock Drive	Sunnyhill to Southernwood	63.9	64.0	0.1	3.0	No
470	Turtle Rock Drive	Campus Drive to Hillgate	63.8	64.1	0.3	3.0	No
471	Turtle Rock Drive	Paseo Segovia to Campus Drive	65.3	65.5	0.2	1.5	No
472	University Drive	Golden Glow to Yale Avenue	72.2	73.0	0.8	1.5	No
473	University Drive	Ridgeline to Michelson Drive	72.1	72.6	0.5	1.5	No
474	University Drive	Culver Drive to Golden Glow	72.1	72.9	0.8	1.5	No
475	University Drive	Yale Avenue to Ridgeline	72.0	72.4	0.4	1.5	No
476	University Drive	Michelson Drive to I-405 SB Off-Ramp	72.3	72.7	0.4	1.5	No
477	University Drive	Mesa to Campus Drive	73.3	74.5	1.2	1.5	No
478	University Drive	MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	73.3	74.4	1.1	1.5	No
479	University Drive	California Avenue to Mesa	73.3	74.4	1.1	1.5	No
480	University Drive	Campus Drive to Harvard Avenue	69.5	70.7	1.2	1.5	No
481	University Drive	SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	70.4	71.6	1.2	1.5	No
482	University Drive	SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps	69.2	70.2	1.0	1.5	No
483	University Drive	San Joaquin to Culver Drive	68.7	69.8	1.1	1.5	No
484	University Drive	Harvard Avenue to San Joaquin	68.7	69.8	1.1	1.5	No

Table 12

485	Valley Oak Drive	Hawkcreek to Barranca Parkway	63.0	68.1	5.1	3.0	Yes
486	Valley Oak Drive	Irvine Center Drive to Oak Canyon Drive	65.2	69.6	4.4	1.5	Yes
487	Valley Oak Drive	Barranca Parkway to Irvine Center Drive	62.9	67.1	4.2	3.0	Yes
488	Valley Oak Drive	Alton Parkway to Hawkcreek	63.8	64.9	1.1	3.0	No
489	Von Karman Avenue	Marriott to Morse Avenue	68.9	71.0	2.1	1.5	Yes
490	Von Karman Avenue	Michelson Drive to Quartz	68.8	70.9	2.1	1.5	Yes
491	Von Karman Avenue	McGaw Avenue to Alton Parkway	69.3	70.8	1.5	1.5	Yes
492	Von Karman Avenue	Alton Parkway to Barranca Parkway	68.4	70.4	2.0	1.5	Yes
493	Von Karman Avenue	Main Street to Anchor	69.2	70.7	1.5	1.5	Yes
494	Von Karman Avenue	Anchor to McGaw Avenue	69.2	70.5	1.3	1.5	No
495	Von Karman Avenue	Morse to Main Street	69.2	70.3	1.1	1.5	No
496	Von Karman Avenue	Martin to Dupont Drive	67.8	69.6	1.8	1.5	Yes
497	Von Karman Avenue	Campus Drive to Martin	67.8	69.5	1.7	1.5	Yes
498	Von Karman Avenue	Dupont Drive to Michelson Drive	67.8	69.5	1.7	1.5	Yes
499	Walnut Avenue	Jeffrey Road to I-5 SB Off-Ramp	68.9	70.9	2.0	1.5	Yes
500	Walnut Avenue	Myford Road to Jamboree Road SB Off-Ramp	68.6	69.1	0.5	1.5	No
501	Walnut Avenue	The Mall Street to Culver Drive	68.2	68.8	0.6	1.5	No
502	Walnut Avenue	Harvard Avenue to The Mall Street	68.2	68.8	0.6	1.5	No
503	Walnut Avenue	Franciscan Street to Ravenwood Street	68.0	68.5	0.5	1.5	No
504	Walnut Avenue	Ravenwood Street to Yale Avenue	68.0	68.5	0.5	1.5	No
505	Walnut Avenue	Culver Drive to Franciscan Street	68.0	68.4	0.4	1.5	No
506	Walnut Avenue	Peters Canyon Road to Harvard Avenue	67.0	68.0	1.0	1.5	No
507	Walnut Avenue	Jamboree Road NB Off-Ramp to Peters Canyon Road	67.0	67.9	0.9	1.5	No
508	Walnut Avenue	Yale Avenue to Kazan Street	66.3	67.3	1.0	1.5	No
509	Walnut Avenue	Wisteria to Jeffrey Road	66.3	67.2	0.9	1.5	No
510	Warner Avenue	Jamboree Road SB Off-ramp to Construction North	69.6	70.2	0.6	1.5	No
511	Warner Avenue	Construction North to Harvard Avenue	67.8	68.6	0.8	1.5	No
512	Warner Avenue	Harvard Avenue to Paseo Westpark	66.1	67.1	1.0	1.5	No
513	Warner Avenue	Santa Ynez to Culver Drive	65.1	66.2	1.1	1.5	No
514	Warner Avenue	Culver Drive to West Yale Loop	64.9	65.8	0.9	3.0	No
515	West Yale Loop	Alton Parkway to Blue Lake North	63.3	64.0	0.7	3.0	No
516	West Yale Loop	Eagle Run to Main Street	63.3	63.9	0.6	3.0	No
517	West Yale Loop	Thunder Run to Yale Avenue	62.7	64.0	1.3	3.0	No
518	West Yale Loop	Main Street to Timber Run	62.7	62.8	0.1	3.0	No
519	West Yale Loop	Yale Avenue to Shorebird	61.8	63.2	1.4	3.0	No

Table 12

520	West Yale Loop	Warner Avenue to Stonecreek South	61.8	62.7	0.9	3.0	No
521	West Yale Loop	Barranca Parkway to Alton Parkway	61.7	62.4	0.7	3.0	No
522	West Yale Loop	Stonecreek North to Warner Avenue	61.8	62.6	0.8	3.0	No
523	West Yale Loop	Birdsong to Barranca Parkway	61.8	62.4	0.6	3.0	No
524	Westwood	Yorktown to Bryan Avenue	63.2	63.5	0.3	3.0	No
525	Westwood	Bryan Avenue to Leaf	61.3	61.6	0.3	3.0	No
526	Yale Avenue	Deerfield Avenue to Winvale Avenue	68.5	68.6	0.1	1.5	No
527	Yale Avenue	Hicks Canyon Drive to Meadowood	67.2	67.3	0.1	1.5	No
528	Yale Avenue	Walnut Avenue to Roosevelt	70.7	71.1	0.4	1.5	No
529	Yale Avenue	Roosevelt to Trabuco Road	66.9	67.1	0.2	1.5	No
530	Yale Avenue	Irvine Center Drive to Deerfield Avenue	66.5	66.9	0.4	1.5	No
531	Yale Avenue	West Yale Loop to Irvine Center Drive	65.0	66.5	1.5	1.5	Yes
532	Yale Avenue	Winvale Avenue to Karen Ann Lane	65.6	65.7	0.1	1.5	No
533	Yale Avenue	Karen Ann Lane to Walnut Avenue	65.6	65.7	0.1	1.5	No
534	Yale Avenue	Trabuco Road to Southwood	65.1	65.6	0.5	1.5	No
535	Yale Avenue	Southwood to Bryan Avenue	65.1	65.4	0.3	1.5	No
536	Yale Avenue	Northwood to Irvine Boulevard	64.8	65.1	0.3	3.0	No
537	Yale Avenue	Bryan Avenue to Monticello	64.8	65.0	0.2	3.0	No
538	Yale Avenue	Irvine Boulevard to Park Place	64.1	64.2	0.1	3.0	No
539	Yale Avenue	University Drive to Royce	57.9	63.6	5.7	5.0	Yes
540	Yale Court	Arborwood to Portola Parkway	60.0	60.4	0.4	1.5	No

<sup>1</sup> Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use.

<sup>3</sup> Does the Project create an incremental noise level increase exceeding the significance criteria?

Table 13

Table 13: Existing and Preferred Plan Traffic Noise Level Increases

ID	Road	Segment	CNEL at Receiving Land Use (dBA) <sup>2</sup>			Incremental Noise Level Increase Threshold <sup>3</sup>	
			Existing	Preferred	Project Addition	Limit	Exceeded?
1	Ada	Barranca Parkway to Marine Way	0.0	70.8	70.8	5.0	Yes
2	Ada	Alton Parkway to Barranca Parkway	60.3	69.2	8.9	3.0	Yes
3	Alton Parkway	Enterprise to I-5 NB Off-Ramp	71.3	73.9	2.6	1.5	Yes
4	Alton Parkway	I-5 NB Off-Ramp to Technology Drive West	72.1	74.5	2.4	1.5	Yes
5	Alton Parkway	East Yale Loop to Jeffrey Road	71.3	71.8	0.5	1.5	No
6	Alton Parkway	Gateway Boulevard to Enterprise	69.3	71.7	2.4	1.5	Yes
7	Alton Parkway	Jeffrey Road to Royal Oak	70.1	70.7	0.6	1.5	No
8	Alton Parkway	Daimler Street to Red Hill Avenue	63.7	70.6	6.9	3.0	Yes
9	Alton Parkway	Culver Drive to West Yale Loop	70.4	70.6	0.2	1.5	No
10	Alton Parkway	West Yale Loop to Lake Road	70.3	70.6	0.3	1.5	No
11	Alton Parkway	Technology Drive West to Ada	70.2	72.4	2.2	1.5	Yes
12	Alton Parkway	Creek Road to East Yale Loop	70.1	70.5	0.4	1.5	No
13	Alton Parkway	Red Hill Avenue to Von Karman Avenue	68.1	70.4	2.3	1.5	Yes
14	Alton Parkway	Lake Road to Creek Road	70.1	70.3	0.2	1.5	No
15	Alton Parkway	Telemetry to Banting	69.0	70.3	1.3	1.5	No
16	Alton Parkway	Irvine Boulevard to Commercentre	70.3	70.8	0.5	1.5	No
17	Alton Parkway	Jenner to Telemetry	69.0	70.3	1.3	1.5	No
18	Alton Parkway	Irvine Center Drive to Gateway Boulevard	68.6	71.0	2.4	1.5	Yes
19	Alton Parkway	Sand Canyon Avenue to Hospital	72.1	73.7	1.6	1.5	Yes
20	Alton Parkway	Laguna Canyon Road to Jenner	69.0	70.2	1.2	1.5	No
21	Alton Parkway	Technology Drive East to Barranca Pkwy/Muirlands Blvd	69.1	70.8	1.7	1.5	Yes
22	Alton Parkway	Royal Oak to Valley Oak Drive	69.4	70.0	0.6	1.5	No
23	Alton Parkway	Banting to Pacifica	68.4	69.9	1.5	1.5	Yes
24	Alton Parkway	Barranca Pkwy/Muirlands Blvd to Jeronimo Road	70.1	70.3	0.2	1.5	No
25	Alton Parkway	Ada to Technology Drive East	69.2	70.3	1.1	1.5	No
26	Alton Parkway	Von Karman Avenue to Jamboree Road	68.7	69.6	0.9	1.5	No
27	Alton Parkway	Jeronimo Road to Hughes	69.8	70.0	0.2	1.5	No
28	Alton Parkway	Hughes to Morgan	69.5	69.8	0.3	1.5	No
29	Alton Parkway	Morgan to Toledo Way	68.8	69.0	0.2	1.5	No

Table 13

30	Alton Parkway	San Marino to Culver Drive	68.8	69.1	0.3	1.5	No
31	Alton Parkway	Jamboree Road to Murphy Avenue	68.0	68.9	0.9	1.5	No
32	Alton Parkway	Hospital to Laguna Canyon Road	70.7	71.9	1.2	1.5	No
33	Alton Parkway	Valley Oak Drive to Sand Canyon Avenue	71.1	71.8	0.7	1.5	No
34	Alton Parkway	Murphy Avenue to Harvard Avenue	68.1	68.7	0.6	1.5	No
35	Alton Parkway	Foster to Irvine Boulevard	68.0	68.7	0.7	1.5	No
36	Alton Parkway	Fairbanks to Foster	67.5	68.4	0.9	1.5	No
37	Alton Parkway	Toledo Way to Bertea	68.2	68.4	0.2	1.5	No
38	Alton Parkway	Pacifica to Meridian	69.7	71.5	1.8	1.5	Yes
39	Alton Parkway	Bertea to Fairbanks	68.1	68.3	0.2	1.5	No
40	Alton Parkway	Meridian to Irvine Center Drive	66.6	68.2	1.6	1.5	Yes
41	Alton Parkway	Paseo Westpark to San Marino	67.9	68.1	0.2	1.5	No
42	Alton Parkway	Harvard Avenue to Paseo Westpark	66.9	67.5	0.6	1.5	No
43	Astor	Lynx to Fairbanks	57.5	67.0	9.5	5.0	Yes
44	Astor	Cadence to Lynx	0.0	65.8	65.8	5.0	Yes
45	Bake Parkway	I-5 NB Off-Ramp to Rockfield Boulevard	75.4	76.6	1.2	1.5	No
46	Bake Parkway	Muirlands Boulevard to Jeronimo Road	72.7	72.9	0.2	1.5	No
47	Bake Parkway	Rockfield Boulevard to Muirlands Boulevard	74.7	75.0	0.3	1.5	No
48	Bake Parkway	Jeronimo Road to Toledo Way	71.9	72.0	0.1	1.5	No
49	Bake Parkway	Toledo Way to Cromwell	71.5	71.6	0.1	1.5	No
50	Bake Parkway	Cromwell to Irvine Boulevard	71.4	71.6	0.2	1.5	No
51	Bake Parkway	Research Drive to I-5 SB Off-Ramp	68.5	69.5	1.0	1.5	No
52	Bake Parkway	Irvine Center Drive to Research Drive	64.1	64.8	0.7	3.0	No
53	Bake Parkway	Lake Forest Drive to Irvine Center Drive	61.9	63.4	1.5	3.0	No
54	Banting	Alton Parkway to Barranca Parkway	57.6	60.2	2.6	5.0	No
55	Barranca Parkway	Pacifica to Irvine Center Drive	70.5	73.1	2.6	1.5	Yes
56	Barranca Parkway	Banting to Pacifica	70.7	72.7	2.0	1.5	Yes
57	Barranca Parkway	I-5 HOV Ramp to Technology Drive West	69.8	72.6	2.8	1.5	Yes
58	Barranca Parkway	Technology Drive West to Ada	70.4	72.6	2.2	1.5	Yes
59	Barranca Parkway	Irvine Center Drive to I-5 HOV Ramp	69.3	72.3	3.0	1.5	Yes
60	Barranca Parkway	Culver Drive to West Yale Loop	71.9	72.2	0.3	1.5	No
61	Barranca Parkway	East Yale Loop to Jeffrey Road	71.7	72.1	0.4	1.5	No
62	Barranca Parkway	West Yale Loop to Lake Road	71.6	72.0	0.4	1.5	No
63	Barranca Parkway	Ada to Alton Parkway	70.2	72.0	1.8	1.5	Yes
64	Barranca Parkway	Lake Road to Creek Road	71.2	71.7	0.5	1.5	No

Table 13

65	Barranca Parkway	Red Hill Avenue to Armstrong Avenue	73.3	74.7	1.4	1.5	No
66	Barranca Parkway	Discovery/Herchel to Banting	69.7	71.6	1.9	1.5	Yes
67	Barranca Parkway	Lyon to East Yale Loop	71.0	71.5	0.5	1.5	No
68	Barranca Parkway	Creek Road to Lyon	70.9	71.4	0.5	1.5	No
69	Barranca Parkway	Von Karman Avenue to Jamboree Road	71.5	72.7	1.2	1.5	No
70	Barranca Parkway	Sand Canyon Avenue to Laguna Canyon Road	68.5	70.8	2.3	1.5	Yes
71	Barranca Parkway	Armstrong Avenue to Von Karman Avenue	72.0	72.3	0.3	1.5	No
72	Barranca Parkway	Valley Oak Drive to Sand Canyon Avenue	69.1	70.6	1.5	1.5	Yes
73	Barranca Parkway	Jamboree Road to Construction Circle	70.1	71.0	0.9	1.5	No
74	Barranca Parkway	Santa Rosa to Culver Drive	69.8	70.9	1.1	1.5	No
75	Barranca Parkway	FedEx to Discovery/Herchel	68.8	70.2	1.4	1.5	No
76	Barranca Parkway	Jeffrey Road to Valley Oak Drive	68.3	70.2	1.9	1.5	Yes
77	Barranca Parkway	Laguna Canyon Road to FedEx	68.8	70.1	1.3	1.5	No
78	Barranca Parkway	Pullman Street to Red Hill Avenue	72.7	73.6	0.9	1.5	No
79	Barranca Parkway	Construction Circle to Fire Station	69.4	70.5	1.1	1.5	No
80	Barranca Parkway	Fire Station to Harvard Avenue	69.4	70.5	1.1	1.5	No
81	Barranca Parkway	Paseo Westpark to Santa Rosa	69.3	70.4	1.1	1.5	No
82	Barranca Parkway	Harvard Avenue to Paseo Westpark	69.2	70.1	0.9	1.5	No
83	Bay Tree	Trabuco Road to Roosevelt	56.1	57.2	1.1	5.0	No
84	Beacon	Ridge Valley to Benchmark	0.0	59.6	59.6	5.0	Yes
85	Benchmark (LN Street)	Ridge Valley (O Street) to Bosque	0.0	56.5	56.5	5.0	Yes
86	Bison Avenue	SR-73 NB Off-Ramp to California Avenue	68.6	69.6	1.0	1.5	No
87	Bonita Canyon Drive	MacArthur Boulevard to SR-73	70.0	70.3	0.3	1.5	No
88	Bonita Canyon Drive	Turtle Ridge to Shady Canyon Drive	67.5	68.6	1.1	1.5	No
89	Bonita Canyon Drive	Newport Coast Drive to Turtle Ridge	67.5	68.2	0.7	1.5	No
90	Bonita Canyon Drive	SR-73 NB Off-Ramp to Newport Coast Drive	67.5	68.0	0.5	1.5	No
91	Bosque	Cadence to Great Park Boulevard	63.0	65.2	2.2	3.0	No
92	Bosque	Irvine Boulevard to Benchmark (LN Street)	59.7	63.5	3.8	5.0	No
93	Bosque	Benchmark to Cadence	59.7	63.1	3.4	5.0	No
94	Bosque	Great Park Boulevard to Beacon	0.0	56.7	56.7	5.0	Yes
95	Bosque	Beacon to S 5th Street	0.0	56.1	56.1	5.0	Yes
96	Bryan Avenue	Jamboree Road to Market Place	68.7	68.9	0.2	1.5	No
97	Bryan Avenue	Market Place to El Camino Real	68.7	68.9	0.2	1.5	No
98	Bryan Avenue	Rubicon to Culver Drive	68.7	68.9	0.2	1.5	No
99	Bryan Avenue	El Camino Real to Rubicon	68.7	68.8	0.1	1.5	No



Table 13

100	Bryan Avenue	Eastwood to Jeffrey Road	65.8	66.9	1.1	1.5	No
101	Bryan Avenue	Westwood to Yale Avenue	66.3	66.6	0.3	1.5	No
102	Bryan Avenue	Culver Drive to Westwood	66.3	66.6	0.3	1.5	No
103	Bryan Avenue	Yale Avenue to Eastwood	65.8	66.4	0.6	1.5	No
104	Cadence	Pusan to Chinon	64.5	65.6	1.1	3.0	No
105	Cadence	Bosque to Pusan	65.7	65.3	-0.4	1.5	No
106	Cadence	Ridge Valley (O Street) to Bosque	62.6	63.9	1.3	3.0	No
107	Cadence	Chinon to Merit	62.6	62.2	-0.4	3.0	No
108	Cadence	Merit to Astor	0.0	59.4	59.4	5.0	Yes
109	California Avenue	University Drive to Academy Way	64.3	66.2	1.9	3.0	No
110	California Avenue	Campus Drive to Harvard Avenue	63.2	64.2	1.0	3.0	No
111	California Avenue	Theory to Bison Avenue	63.1	63.9	0.8	3.0	No
112	Campus Drive	Carlson Avenue to University Drive	70.9	73.2	2.3	1.5	Yes
113	Campus Drive	University Drive to Bridge Road	70.1	71.8	1.7	1.5	Yes
114	Campus Drive	Jamboree Road to Carlson Avenue	69.0	71.5	2.5	1.5	Yes
115	Campus Drive	Stanford Court to Berkeley Avenue	70.1	71.1	1.0	1.5	No
116	Campus Drive	California Avenue to Culver Drive	68.9	70.9	2.0	1.5	Yes
117	Campus Drive	Berkeley Avenue to Cornell	68.9	70.0	1.1	1.5	No
118	Campus Drive	Martin to Von Karman Avenue	67.5	69.0	1.5	1.5	Yes
119	Campus Drive	Culver Drive to Paseo Montoya (Turtle Rock Drive)	68.5	68.7	0.2	1.5	No
120	Campus Drive	Von Karman Avenue to Teller Avenue	66.8	68.3	1.5	1.5	Yes
121	Campus Drive	MacArthur Boulevard to Martin	67.5	68.2	0.7	1.5	No
122	Campus Drive	Teller Avenue to Jamboree Road	66.8	67.5	0.7	1.5	No
123	Carlson Avenue	Michelson Drive to Campus Drive	64.5	67.9	3.4	3.0	Yes
124	Chinon	Irvine Boulevard to Cadence	56.6	59.0	2.4	5.0	No
125	Creek Road	Alton Parkway to Barranca Parkway	55.3	56.1	0.8	5.0	No
126	Culver Drive	Michelson Drive to I-405 SB Off-Ramp	73.4	73.9	0.5	1.5	No
127	Culver Drive	I-405 SB Off-Ramp to I-405 NB Off Ramp	73.4	73.8	0.4	1.5	No
128	Culver Drive	I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)	73.7	73.9	0.2	1.5	No
129	Culver Drive	Scottsdale Drive to I-5 SB Off- Ramp	73.7	73.9	0.2	1.5	No
130	Culver Drive	I-405 NB Off-Ramp to San Leandro	73.4	73.6	0.2	1.5	No
131	Culver Drive	San Leandro to Main Street	73.2	73.3	0.1	1.5	No
132	Culver Drive	Harvard Avenue to University Drive	72.7	73.3	0.6	1.5	No
133	Culver Drive	Trabuco Road to Farwell Avenue	74.1	74.3	0.2	1.5	No
134	Culver Drive	Alton Parkway to Barranca Parkway	72.9	73.2	0.3	1.5	No

Table 13

135	Culver Drive	Main Street to Alton Parkway	72.7	73.1	0.4	1.5	No
136	Culver Drive	Warner Avenue to Irvine Center Drive	72.7	73.0	0.3	1.5	No
137	Culver Drive	Walnut Avenue to Scottsdale Dive	72.6	72.9	0.3	1.5	No
138	Culver Drive	Barranca Parkway to Warner Avenue	72.6	72.8	0.2	1.5	No
139	Culver Drive	Shady Canyon Drive to Palo Verde	71.4	72.0	0.6	1.5	No
140	Culver Drive	Deerfield Avenue to Walnut Avenue	72.3	72.5	0.2	1.5	No
141	Culver Drive	Sandburg Way to Michelson Drive	71.9	72.5	0.6	1.5	No
142	Culver Drive	Irvine Center Drive to Deerfield Avenue	72.1	72.4	0.3	1.5	No
143	Culver Drive	Palo Verde to Campus Drive	71.4	71.6	0.2	1.5	No
144	Culver Drive	University Drive to Sandburg Way	71.5	72.2	0.7	1.5	No
145	Culver Drive	Farwell Avenue to Bryan Avenue	72.8	73.2	0.4	1.5	No
146	Culver Drive	Campus Drive to High School	71.6	72.1	0.5	1.5	No
147	Culver Drive	High School to Harvard Avenue	71.6	72.0	0.4	1.5	No
148	Culver Drive	Bryan Avenue to Florence	71.5	71.8	0.3	1.5	No
149	Culver Drive	Portola Parkway to Settlers	68.9	71.1	2.2	1.5	Yes
150	Culver Drive	Florence to Irvine Boulevard	71.3	71.7	0.4	1.5	No
151	Culver Drive	Irvine Boulevard to Viewpark	70.0	70.5	0.5	1.5	No
152	Culver Drive	Viewpark to Meadowood	70.0	70.4	0.4	1.5	No
153	Culver Drive	Settlers to Furrow	0.0	68.4	68.4	5.0	Yes
154	Culver Drive	Meadowood to Portola Parkway	68.3	69.0	0.7	1.5	No
155	Discovery Drive	Irvine Center Drive to Laguna Canyon Road	56.6	64.0	7.4	5.0	Yes
156	Discovery Drive	Waterworks Way to Irvine Center Drive	0.0	61.2	61.2	5.0	Yes
157	East Yale Loop	Alton Parkway to Witherspoon	64.6	65.5	0.9	3.0	No
158	East Yale Loop	Osborn Street to Barranca Parkway	64.3	65.3	1.0	3.0	No
159	East Yale Loop	Yale Avenue to Springbrook South	62.3	64.8	2.5	3.0	No
160	East Yale Loop	Springbrook North to Alton Parkway	62.3	63.5	1.2	3.0	No
161	East Yale Loop	Woodspring to Yale Avenue	62.3	62.7	0.4	3.0	No
162	East Yale Loop	Barranca Parkway to Eastshore	62.3	62.4	0.1	3.0	No
163	Eastwood	Bryan Avenue to Monticello	59.5	60.8	1.3	5.0	No
164	Eastwood	Columbus to Bryan Avenue	58.5	58.7	0.2	5.0	No
165	El Camino Real	Jamboree Road to Alliance (SR-261 Bridge)	66.9	67.1	0.2	1.5	No
166	El Camino Real North	El Camino Real to Bryan Avenue	62.2	62.4	0.2	3.0	No
167	Fairbanks	Alton Parkway to Astor	61.3	69.7	8.4	3.0	Yes
168	Fairbanks	Irvine Boulevard to Alton Parkway	0.0	66.9	66.9	5.0	Yes
169	Fairchild Road	MacArthur Boulevard to Jamboree Road	63.3	64.1	0.8	3.0	No

Table 13

170	Gateway Boulevard	Alton Parkway to Irvine Center Drive	57.0	63.3	6.3	5.0	Yes
171	Gateway Boulevard	Spectrum Center Drive (Fortune Drive) to Alton Parkway	59.4	62.1	2.7	5.0	No
172	Gateway Boulevard	Irvine Center Drive to Meridian	56.8	59.1	2.3	5.0	No
173	Great Park Boulevard	Sand Canyon to Ridge Valley	70.5	74.4	3.9	1.5	Yes
174	Great Park Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	64.0	70.2	6.2	3.0	Yes
175	Great Park Boulevard (EB)	Bosque to Skyhawk	0.0	68.8	68.8	5.0	Yes
176	Great Park Boulevard (WB)	Bosque to Skyhawk	0.0	68.3	68.3	5.0	Yes
177	Harvard Avenue	University Drive to Michelson Drive	71.2	72.0	0.8	1.5	No
178	Harvard Avenue	Michelson Drive to Coronado	69.5	70.4	0.9	1.5	No
179	Harvard Avenue	San Marino to Alton Parkway	69.4	70.1	0.7	1.5	No
180	Harvard Avenue	Coronado to Main Street	69.3	70.1	0.8	1.5	No
181	Harvard Avenue	San Carlo to San Marino	69.4	70.0	0.6	1.5	No
182	Harvard Avenue	Main Street to San Carlo	69.3	70.0	0.7	1.5	No
183	Harvard Avenue	Alton Parkway to San Leon	68.5	68.8	0.3	1.5	No
184	Harvard Avenue	San Juan to Barranca Parkway	68.5	68.8	0.3	1.5	No
185	Harvard Avenue	San Leon to San Juan	68.4	68.6	0.2	1.5	No
186	Harvard Avenue	Irvine Center Drive to Deerfield Avenue	65.5	67.4	1.9	1.5	Yes
187	Harvard Avenue	Deerfield Avenue to Poplar Street	65.5	67.3	1.8	1.5	Yes
188	Harvard Avenue	Barranca Parkway to Warner Avenue	67.6	67.8	0.2	1.5	No
189	Harvard Avenue	Bridge Road to University Drive	67.2	67.8	0.6	1.5	No
190	Harvard Avenue	Paseo Westpark to Irvine Center Drive	66.1	67.8	1.7	1.5	Yes
191	Harvard Avenue	Poplar Street to Walnut Avenue	66.8	68.7	1.9	1.5	Yes
192	Harvard Avenue	California Avenue to Berkeley Avenue	66.1	67.2	1.1	1.5	No
193	Harvard Avenue	Culver Drive to California Avenue	66.1	67.2	1.1	1.5	No
194	Harvard Avenue	Berkeley to Bridge Road	66.1	67.1	1.0	1.5	No
195	Harvard Avenue	Warner Avenue to Paseo Westpark	65.9	66.8	0.9	1.5	No
196	Hicks Canyon Drive	Delamesa to Yale Avenue	58.2	58.2	0.0	5.0	No
197	Hornet (5th St)	Ridge Valley (O Street) to Bosque	0.0	57.5	57.5	5.0	Yes
198	Hubble	Irvine Center Drive to Bunsen	55.5	55.9	0.4	5.0	No
199	Irvine Boulevard	SR-133 NB Off- Ramp to Ridge Valley (O Street)	72.1	72.3	0.2	1.5	No
200	Irvine Boulevard	SR-133 SB Off-Ramp to SR-133 NB Off-Ramp	72.0	72.2	0.2	1.5	No
201	Irvine Boulevard	Sand Canyon to SR-133 SB Off-Ramp	72.9	73.1	0.2	1.5	No
202	Irvine Boulevard	Merit to Alton	71.4	71.6	0.2	1.5	No
203	Irvine Boulevard	Journey to Sand Canyon Avenue	71.4	71.6	0.2	1.5	No
204	Irvine Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	70.9	71.2	0.3	1.5	No

Table 13

205	Irvine Boulevard	Pusan Way to Chinon (B Street)	70.8	71.0	0.2	1.5	No
206	Irvine Boulevard	Palo Lado to Yale Avenue	70.4	71.1	0.7	1.5	No
207	Irvine Boulevard	Culver Drive to Palo Lado	70.5	71.0	0.5	1.5	No
208	Irvine Boulevard	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.5	70.9	0.4	1.5	No
209	Irvine Boulevard	Old Myford Road to Market Place	70.3	71.0	0.7	1.5	No
210	Irvine Boulevard	Bosque (LY Street) to Modjeska	70.5	70.9	0.4	1.5	No
211	Irvine Boulevard	Jamboree Road to Old Myford Road	70.3	70.9	0.6	1.5	No
212	Irvine Boulevard	Market Place to SR-261 SB Off-Ramp	70.3	70.9	0.6	1.5	No
213	Irvine Boulevard	Jeffrey Road to Groveland	70.6	70.8	0.2	1.5	No
214	Irvine Boulevard	Bake Parkway to Lake Forest Drive	69.8	70.6	0.8	1.5	No
215	Irvine Boulevard	Independence Way (The Groves)/ The Groves to Jeffrey Road	70.2	70.6	0.4	1.5	No
216	Irvine Boulevard	Chinon (B Street) to Merit	70.2	70.5	0.3	1.5	No
217	Irvine Boulevard	SR-261 NB Off-Ramp to Central Park	70.1	70.5	0.4	1.5	No
218	Irvine Boulevard	Pueblo Norte to Independence Way (The Groves)/ Parkwood	69.9	70.3	0.4	1.5	No
219	Irvine Boulevard	Yale Avenue to Pueblo Norte	69.9	70.3	0.4	1.5	No
220	Irvine Boulevard	Modjeska to Pusan Way	70.0	70.2	0.2	1.5	No
221	Irvine Boulevard	Central Park Avenue to Culver Drive	69.5	69.9	0.4	1.5	No
222	Irvine Boulevard	Parker to Bake Parkway	69.0	69.5	0.5	1.5	No
223	Irvine Boulevard	Alton Parkway to Fairbanks	68.4	68.6	0.2	1.5	No
224	Irvine Center Drive	Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp	71.3	72.6	1.3	1.5	No
225	Irvine Center Drive	Orange Tree to Valley Oak Drive	69.7	71.8	2.1	1.5	Yes
226	Irvine Center Drive	I-405 SB Off-Ramp to Research	70.9	72.1	1.2	1.5	No
227	Irvine Center Drive	Irvine Valley College to Orange Tree	69.7	71.7	2.0	1.5	Yes
228	Irvine Center Drive	Fontaine Avenue to Jeffrey Road	69.5	71.5	2.0	1.5	Yes
229	Irvine Center Drive	Culver Drive to Deerwood	69.7	71.4	1.7	1.5	Yes
230	Irvine Center Drive	Deerwood to Yale Avenue	69.6	71.4	1.8	1.5	Yes
231	Irvine Center Drive	Yale Avenue to Fontaine Avenue	69.4	71.4	2.0	1.5	Yes
232	Irvine Center Drive	Jeffrey Road to Irvine Valley College	69.7	71.3	1.6	1.5	Yes
233	Irvine Center Drive	Alton Parkway to Spectrum	68.9	71.0	2.1	1.5	Yes
234	Irvine Center Drive	Spectrum to Pacifica	68.9	71.0	2.1	1.5	Yes
235	Irvine Center Drive	Hearthstone to Culver Drive	69.2	70.9	1.7	1.5	Yes
236	Irvine Center Drive	Charter to Barranca Parkway	68.1	70.6	2.5	1.5	Yes
237	Irvine Center Drive	Jamboree Road to Harvard Avenue	69.7	70.5	0.8	1.5	No
238	Irvine Center Drive	Pacifica to Entertainment (Enterprise/Fortune)	69.1	70.5	1.4	1.5	No
239	Irvine Center Drive	Valley Oak Drive to Sand Canyon Avenue	68.1	70.5	2.4	1.5	Yes

Table 13

240	Irvine Center Drive	Harvard Avenue to Hearthstone	69.2	70.2	1.0	1.5	No
241	Irvine Center Drive	Research to Hubble	67.9	69.7	1.8	1.5	Yes
242	Irvine Center Drive	Barranca Parkway to Gateway Boulevard	66.9	69.8	2.9	1.5	Yes
243	Irvine Center Drive	Bake Parkway to Muller	67.9	69.7	1.8	1.5	Yes
244	Irvine Center Drive	Discovery to Charter	67.3	69.8	2.5	1.5	Yes
245	Irvine Center Drive	Hubble to Bake Parkway	67.8	69.5	1.7	1.5	Yes
246	Irvine Center Drive	Muller to Tesla	67.7	69.3	1.6	1.5	Yes
247	Irvine Center Drive	Sand Canyon Avenue to Odyssey	67.6	69.2	1.6	1.5	Yes
248	Irvine Center Drive	Tesla to Scientific Way	67.1	68.9	1.8	1.5	Yes
249	Irvine Center Drive	Scientific Way to Lake Forest Drive	67.2	68.7	1.5	1.5	Yes
250	Irvine Center Drive	Gateway Boulevard to Alton Parkway	66.7	68.6	1.9	1.5	Yes
251	Irvine Center Drive	Laguna Canyon Road to Discovery	66.8	68.6	1.8	1.5	Yes
252	Irvine Center Drive	Odyssey to Laguna Canyon Road	66.8	68.5	1.7	1.5	Yes
253	Irvine Center Drive (Edinger)	Redhill Avenue to Jamboree Road	69.6	70.9	1.3	1.5	No
254	Jamboree Road	I-5 SB Off-Ramp to I-5 NB Off-Ramp	74.3	74.5	0.2	1.5	No
255	Jamboree Road	I-405 SB Off-Ramp to I-405 NB Off Ramp	75.1	75.6	0.5	1.5	No
256	Jamboree Road	Walnut Avenue to Michelle Drive	73.5	73.9	0.4	1.5	No
257	Jamboree Road	I-405 NB Off-Ramp to Main Street	76.5	77.0	0.5	1.5	No
258	Jamboree Road	Michelle Drive to I-5 SB Off-Ramp	73.5	73.6	0.1	1.5	No
259	Jamboree Road	Main Street to Kelvin Avenue	75.7	76.3	0.6	1.5	No
260	Jamboree Road	Michelson Drive to I-405 SB Off-Ramp	73.6	74.3	0.7	1.5	No
261	Jamboree Road	Kelvin Avenue to McGaw Avenue	75.5	76.0	0.5	1.5	No
262	Jamboree Road	McGaw Avenue to Alton Parkway	75.4	75.9	0.5	1.5	No
263	Jamboree Road	Birch Street to Campus Drive	72.1	72.9	0.8	1.5	No
264	Jamboree Road	Dupont Drive to Michelson Drive	73.3	73.8	0.5	1.5	No
265	Jamboree Road	Alton Parkway to Beckman	75.2	75.5	0.3	1.5	No
266	Jamboree Road	Fairchild Road to Birch Street	72.2	73.4	1.2	1.5	No
267	Jamboree Road	Beckman to Barranca Parkway	75.0	75.2	0.2	1.5	No
268	Jamboree Road	I-5 NB Off-Ramp to El Camino Real	74.9	75.1	0.2	1.5	No
269	Jamboree Road	Campus Drive to Dupont Drive	72.5	73.1	0.6	1.5	No
270	Jamboree Road	El Camino Real to West Drive	74.9	75.0	0.1	1.5	No
271	Jamboree Road	West Drive to Bryan Avenue	74.9	75.0	0.1	1.5	No
272	Jamboree Road	Bryan Avenue to Irvine Boulevard	74.5	74.7	0.2	1.5	No
273	Jamboree Road	Koll Center to Fairchild Road	71.7	72.7	1.0	1.5	No
274	Jamboree Road	MacArthur Boulevard to Koll Center	71.8	72.6	0.8	1.5	No

Table 13

275	Jamboree Road	Irvine Boulevard to Portola Parkway	70.0	70.7	0.7	1.5	No
276	Jamboree Road	Warner Avenue to Edinger Avenue	79.0	79.1	0.1	1.5	No
277	Jamboree Road	Barranca Parkway to Warner Avenue	78.1	78.3	0.2	1.5	No
278	Jamboree Road	Edinger Avenue to Walnut Avenue	77.8	78.0	0.2	1.5	No
279	Jeffrey Road	Walnut Avenue to I-5 NB Off-Ramp	70.9	71.3	0.4	1.5	No
280	Jeffrey Road	I-5 NB Off-Ramp to Roosevelt	71.8	72.2	0.4	1.5	No
281	Jeffrey Road	Poplar (Meadows) to Walnut Avenue	70.4	70.9	0.5	1.5	No
282	Jeffrey Road	Alton Parkway to Barranca Parkway	70.3	70.8	0.5	1.5	No
283	Jeffrey Road	Irvine Center Drive to Poplar (Meadows)	70.2	70.7	0.5	1.5	No
284	Jeffrey Road	I-405 NB Off-Ramp to Quail Creek	70.4	70.7	0.3	1.5	No
285	Jeffrey Road	Barranca Parkway to Irvine Valley College	70.3	70.6	0.3	1.5	No
286	Jeffrey Road	Quail Creek to Alton Parkway	70.4	70.6	0.2	1.5	No
287	Jeffrey Road	Irvine Valley College to Irvine Center Drive	70.1	70.4	0.3	1.5	No
288	Jeffrey Road	Trabuco Road to Hideaway	69.4	69.6	0.2	1.5	No
289	Jeffrey Road	Hideaway to Bryan Avenue	69.4	69.6	0.2	1.5	No
290	Jeffrey Road	Roosevelt to Grove	70.0	70.4	0.4	1.5	No
291	Jeffrey Road	Grove to Trabuco Road	70.0	70.2	0.2	1.5	No
292	Jeffrey Road	Bryan Avenue to Irvine Boulevard	68.1	68.5	0.4	1.5	No
293	Jeffrey Road	Encore to Portola Parkway	64.0	65.8	1.8	3.0	No
294	Jeffrey Road	Irvine Boulevard to Encore	64.0	65.5	1.5	3.0	No
295	Jeronimo Road	Goodyear to Bake Parkway	64.4	64.6	0.2	3.0	No
296	Jeronimo Road	Alton Parkway to Goodyear	64.1	64.3	0.2	3.0	No
297	Laguna Canyon Road	Old Laguna Canyon Road to Lake Forest Drive	72.6	73.3	0.7	1.5	No
298	Laguna Canyon Road	Laguna Canyon Freeway to Quail Hill Parkway	67.7	69.9	2.2	1.5	Yes
299	Laguna Canyon Road	Discovery to Sand Canyon Avenue	64.8	69.1	4.3	3.0	Yes
300	Laguna Canyon Road	I-405 Overcrossing to Pasteur	66.0	67.9	1.9	1.5	Yes
301	Laguna Canyon Road	Irvine Center Drive to Discovery	63.6	67.5	3.9	3.0	Yes
302	Laguna Canyon Road	Quail Hill Parkway to I-405 Overcrossing	66.0	67.9	1.9	1.5	Yes
303	Laguna Canyon Road	Pasteur to Alton Parkway	65.5	66.9	1.4	1.5	No
304	Laguna Canyon Road	Waterworks to Irvine Center Drive	64.5	66.4	1.9	3.0	No
305	Laguna Canyon Road	Alton Parkway to Barranca Parkway	64.8	66.1	1.3	3.0	No
306	Laguna Canyon Road	Barranca Parkway to Waterworks	63.9	65.6	1.7	3.0	No
307	Lake Forest Drive	Hidden Canyon to Laguna Canyon Road	68.3	69.3	1.0	1.5	No
308	Lake Forest Drive	Bake Parkway to Hidden Canyon (Romano)	68.3	69.3	1.0	1.5	No
309	Lake Forest Drive	Tesla to Bake Parkway	65.3	66.3	1.0	1.5	No

Table 13

310	Lake Road	Alton Parkway to Barranca Parkway	59.0	59.2	0.2	5.0	No
311	Lynx	Irvine Boulevard to Astor	0.0	53.2	53.2	5.0	Yes
312	MacArthur Boulevard	I-405 SB Off-Ramp to Michelson Drive	76.0	76.7	0.7	1.5	No
313	MacArthur Boulevard	Main Street to I-405 NB Off-Ramp	75.8	76.6	0.8	1.5	No
314	MacArthur Boulevard	I-405 NB Off-Ramp and I-405 SB Off-Ramp	75.7	76.6	0.9	1.5	No
315	MacArthur Boulevard	Jamboree Road to Fairchild Road	69.7	69.9	0.2	1.5	No
316	MacArthur Boulevard	Fairchild Road to University Drive	69.7	69.9	0.2	1.5	No
317	MacArthur Boulevard	Fitch to Red Hill Avenue	70.4	70.5	0.1	1.5	No
318	MacArthur Boulevard	Michelson Drive to Douglas	71.3	72.1	0.8	1.5	No
319	MacArthur Boulevard	Douglas to Campus Drive	71.3	72.1	0.8	1.5	No
320	MacArthur Boulevard	Skypark to Main Street	69.0	69.5	0.5	1.5	No
321	MacArthur Boulevard	Redhill Avenue to Skypark	68.0	68.3	0.3	1.5	No
322	MacArthur Boulevard	Birch Street to Jamboree Road	66.5	67.0	0.5	1.5	No
323	MacArthur Boulevard	Campus Drive to Birch Street	68.5	69.3	0.8	1.5	No
324	Main Street	Gillette Avenue to Von Karman Avenue	69.4	70.7	1.3	1.5	No
325	Main Street	MacArthur Boulevard to Mercantile	69.4	70.2	0.8	1.5	No
326	Main Street	Executive Park to MacArthur Boulevard	67.7	68.4	0.7	1.5	No
327	Main Street	Von Karman Avenue to Cartwright	67.2	68.3	1.1	1.5	No
328	Main Street	McDermott to Red Hill Avenue	67.9	68.1	0.2	1.5	No
329	Main Street	Red Hill Avenue to Executive Circle	67.7	68.0	0.3	1.5	No
330	Main Street	Jamboree Road to Union	67.4	67.8	0.4	1.5	No
331	Main Street	Culver Drive to West Yale Loop	67.0	67.1	0.1	1.5	No
332	Main Street	Siglo to Jamboree Road	67.2	67.7	0.5	1.5	No
333	Main Street	Veneto to Harvard Avenue	67.4	67.5	0.1	1.5	No
334	Main Street	Paseo Westpark to Culver Drive	66.2	66.4	0.2	1.5	No
335	Main Street	Harvard Avenue to San Mateo	66.2	66.4	0.2	1.5	No
336	Marine Way	Sand Canyon Avenue to Ridge Valley (O Street)	67.8	72.3	4.5	1.5	Yes
337	Marine Way	Alton Parkway to Bake Parkway	0.0	69.3	69.3	5.0	Yes
338	Marine Way	Lynx to Barranca Parkway	0.0	69.3	69.3	5.0	Yes
339	Marine Way	County Access to Treble	59.3	68.4	9.1	5.0	Yes
340	Marine Way	Ridge Valley (O Street) to Skyhawk	62.0	68.2	6.2	3.0	Yes
341	Marine Way	Skyhawk to County Access	59.3	67.1	7.8	5.0	Yes
342	Marine Way	Barranca Parkway to Alton Parkway	52.7	66.8	14.1	5.0	Yes
343	Marine Way	Treble to Lynx	0.0	66.4	66.4	5.0	Yes
344	McGaw Avenue	Von Karman Avenue to Jamboree Road	62.2	64.3	2.1	3.0	No

Table 13

345	McGaw Avenue	Red Hill Avenue to Von Karman Avenue	62.1	64.1	2.0	3.0	No
346	McGaw Avenue	Daimler to Red Hill Avenue	61.0	62.4	1.4	3.0	No
347	McGaw Avenue	Jamboree Road to Murphy Avenue	57.6	59.3	1.7	5.0	No
348	Meadowood	Culver Drive to Canyonwood	59.5	59.8	0.3	5.0	No
349	Meridian	Spectrum to Alton Parkway	54.7	55.3	0.6	5.0	No
350	Meridian	Alton Parkway to Gateway Boulevard	53.5	54.6	1.1	5.0	No
351	Merit	Irvine Boulevard to Cadence	59.3	57.9	-1.4	5.0	No
352	Michelson Drive	Riparian to Harvard Avenue	66.7	68.3	1.6	1.5	Yes
353	Michelson Drive	Almond Tree Lane to Yale Avenue	66.3	67.1	0.8	1.5	No
354	Michelson Drive	Von Karman Avenue to Obsidian	66.7	68.0	1.3	1.5	No
355	Michelson Drive	Parkside to Culver Drive	66.2	67.8	1.6	1.5	Yes
356	Michelson Drive	Gillman to Seton/Sandburg Way	66.3	66.8	0.5	1.5	No
357	Michelson Drive	Carlson to Prince	65.4	67.3	1.9	1.5	Yes
358	Michelson Drive	MacArthur Boulevard to Dupont Drive	66.7	67.3	0.6	1.5	No
359	Michelson Drive	Harvard Avenue to Parkside	66.2	66.8	0.6	1.5	No
360	Michelson Drive	Bixby to Von Karman Avenue	64.9	66.7	1.8	3.0	No
361	Michelson Drive	Jamboree Road to Carlson	68.0	69.6	1.6	1.5	Yes
362	Michelson Drive	Teller to Jamboree Road	68.7	69.6	0.9	1.5	No
363	Michelson Drive	Jordan East to University Drive	66.6	66.9	0.3	1.5	No
364	Michelson Drive	Culver Drive to Angell	65.9	66.2	0.3	1.5	No
365	Modjeska (A Street)	Portola Springs to Irvine Boulevard	70.7	71.7	1.0	1.5	No
366	Modjeska (A Street)	South of Irvine Boulevard	61.4	61.1	-0.3	3.0	No
367	Muirlands Boulevard	Bake Parkway to City Limits	66.4	67.1	0.7	1.5	No
368	Muirlands Boulevard	Alton Parkway to Sterling	66.1	66.3	0.2	1.5	No
369	Muirlands Boulevard	Wrigley to Bake Parkway	66.1	66.3	0.2	1.5	No
370	Newport Coast Drive	SR-73 NB Off-Ramp to Turtle Ridge	65.9	66.6	0.7	1.5	No
371	Newport Coast Drive	Turtle Crest to Bonita Canyon Drive	65.0	65.1	0.1	1.5	No
372	Nightmist	Sand Canyon Avenue to Tulip (Road C)	60.8	61.9	1.1	3.0	No
373	Northwood	Yale Avenue to Savannah	62.3	62.5	0.2	3.0	No
374	Northwood	Goldrush to Yale Avenue	60.5	61.5	1.0	3.0	No
375	Oak Canyon Drive	Valley Oak Drive to Sand Canyon Avenue	66.2	69.2	3.0	1.5	Yes
376	Pacifica	Gateway to Barranca Parkway	63.3	65.2	1.9	3.0	No
377	Pacifica	Alton Parkway to Gateway	61.8	64.0	2.2	3.0	No
378	Pacifica	Irvine Center Drive to Fortune Drive (Spectrum Center Drive)	61.7	62.7	1.0	3.0	No
379	Pacifica	Meridian to Alton Parkway	58.1	60.8	2.7	5.0	No



Table 13

380	Park Place	Christamon South to Yale Avenue	56.8	57.0	0.2	5.0	No
381	Portola Parkway	Bee Canyon Access Road to Sand Canyon Avenue	70.3	71.5	1.2	1.5	No
382	Portola Parkway	Jeffrey Road to Bee Canyon Access Road	70.3	71.5	1.2	1.5	No
383	Portola Parkway	Arrowhead to Ridge Valley Parkway	69.6	71.4	1.8	1.5	Yes
384	Portola Parkway	Sand Canyon Avenue to Arrowhead	69.6	71.0	1.4	1.5	No
385	Portola Parkway	Portola Springs to SR-241 SB Off-Ramp	65.5	70.1	4.6	1.5	Yes
386	Portola Parkway	Gatepark to Culver Drive	69.6	70.6	1.0	1.5	No
387	Portola Parkway	ETC-6 (SR-261) NB Off-Ramp to Gatepark	69.6	70.5	0.9	1.5	No
388	Portola Parkway	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	69.6	70.4	0.8	1.5	No
389	Portola Parkway	Jamboree Road to Bellevue	69.6	70.4	0.8	1.5	No
390	Portola Parkway	Bellevue to ETC-6 (SR-261) SB Off-Ramp	69.6	70.3	0.7	1.5	No
391	Portola Parkway	Yale Avenue to Jeffrey Road	68.6	70.1	1.5	1.5	Yes
392	Portola Parkway	Culver Drive to Yale Avenue	68.6	69.6	1.0	1.5	No
393	Portola Parkway	Silverado to Portola Springs	66.5	68.5	2.0	1.5	Yes
394	Pusan	Irvine Boulevard to Cadence	54.0	56.2	2.2	5.0	No
395	Quail Hill Parkway	Shady Canyon Drive to Passage	67.3	67.4	0.1	1.5	No
396	Quail Hill Parkway	East Knollcrest to Laguna Canyon Road	64.8	65.5	0.7	3.0	No
397	Quassar Drive (Spectrum)	Irvine Center Drive to Spectrum Center Drive (Fortune)	54.4	54.8	0.4	5.0	No
398	Red Hill Avenue	MacArthur Boulevard to McGaw Avenue	70.8	71.5	0.7	1.5	No
399	Red Hill Avenue	I-405 Over Crossing to Main Street	69.6	70.1	0.5	1.5	No
400	Red Hill Avenue	Alton Parkway to Deere Avenue	69.5	70.0	0.5	1.5	No
401	Red Hill Avenue	McGaw Avenue to Alton Parkway	69.3	69.9	0.6	1.5	No
402	Red Hill Avenue	Deere Avenue to Barranca Parkway	69.3	69.8	0.5	1.5	No
403	Red Hill Avenue	Skypark East to MacArthur Boulevard	70.2	71.3	1.1	1.5	No
404	Red Hill Avenue	Main Street to Skypark East	69.6	70.6	1.0	1.5	No
405	Research Drive	Hubble to Bake Parkway	65.4	69.5	4.1	1.5	Yes
406	Research Drive	Scientific to Lake Forest Drive	65.6	67.4	1.8	1.5	Yes
407	Research Drive	Bake Parkway to Muller	66.2	66.6	0.4	1.5	No
408	Research Drive	Irvine Center Drive to Bunsen	64.9	65.6	0.7	3.0	No
409	Ridge Valley (O Street)	Irvine Boulevard to Trabuco Road (Great Park Boulevard)	65.5	67.3	1.8	1.5	Yes
410	Ridge Valley (O Street)	Portola Parkway to Irvine Boulevard	65.9	66.4	0.5	1.5	No
411	Ridge Valley (O Street)	Trabuco Road (Great Park Boulevard) to Marine Way	65.8	66.0	0.2	1.5	No
412	Ridge Valley (O Street)	Ranchland to Portola Parkway	58.0	58.1	0.1	5.0	No
413	Ridgeline Drive	Concordia East to University Drive	67.7	68.7	1.0	1.5	No
414	Ridgeline Drive	Turtle Rock Drive to San Simeon	67.7	68.4	0.7	1.5	No

Table 13

415	Rockfield Avenue	Whatney to McLaren	66.3	67.6	1.3	1.5	No
416	Rockfield Avenue	Bake Parkway to Whatney	62.5	64.1	1.6	3.0	No
417	Rockfield Avenue	Thomas to Bake Parkway	62.5	63.1	0.6	3.0	No
418	Roosevelt	Jeffrey Road to Vision	65.2	66.5	1.3	1.5	No
419	Roosevelt	Yale Avenue to Van Buren	67.9	68.2	0.3	1.5	No
420	Roosevelt	Vision to Bay Tree	64.5	66.2	1.7	3.0	No
421	Roosevelt	Nimitz to Jeffrey Road	65.2	65.9	0.7	1.5	No
422	Roosevelt	Tulip (Road C) to Sand Canyon Avenue	63.7	65.6	1.9	3.0	No
423	Royal Oak	Alton Parkway to Eaglecreek	63.8	64.0	0.2	3.0	No
424	Sand Canyon Avenue	Oak Canyon Drive to Burt Road	70.7	72.1	1.4	1.5	No
425	Sand Canyon Avenue	Irvine Center Drive to Oak Canyon Drive	70.6	71.9	1.3	1.5	No
426	Sand Canyon Avenue	I-405 NB Off-Ramp to Alton Parkway	73.6	74.6	1.0	1.5	No
427	Sand Canyon Avenue	Burt Road to I-5 SB Off-Ramp	71.2	72.7	1.5	1.5	Yes
428	Sand Canyon Avenue	Marine to I-5 NB Off-Ramp	72.7	74.6	1.9	1.5	Yes
429	Sand Canyon Avenue	Trabuco Road to Towngate	70.0	71.1	1.1	1.5	No
430	Sand Canyon Avenue	Barranca Parkway to Waterworks	69.2	70.8	1.6	1.5	Yes
431	Sand Canyon Avenue	I-5 SB Off-Ramp to Marine	72.7	73.8	1.1	1.5	No
432	Sand Canyon Avenue	Hospital to Barranca Parkway	69.3	70.6	1.3	1.5	No
433	Sand Canyon Avenue	Nightmist to Roosevelt	73.3	73.5	0.2	1.5	No
434	Sand Canyon Avenue	I-405 SB Off-Ramp to I-405 NB Off-Ramp	72.4	73.5	1.1	1.5	No
435	Sand Canyon Avenue	I-5 NB Off-Ramp to Nightmist	73.2	73.5	0.3	1.5	No
436	Sand Canyon Avenue	Towngate to Irvine Boulevard	69.3	70.4	1.1	1.5	No
437	Sand Canyon Avenue	Waterworks to Irvine Center Drive	69.2	70.2	1.0	1.5	No
438	Sand Canyon Avenue	Irvine Boulevard to Portola Parkway	68.0	69.2	1.2	1.5	No
439	Sand Canyon Avenue	Roosevelt to Trabuco Road	72.6	72.8	0.2	1.5	No
440	Sand Canyon Avenue	Alton Parkway to Hospital	69.7	70.6	0.9	1.5	No
441	Sand Canyon/Shady Canyon	Quail Hill Parkway to I-405 SB Ramps	71.3	71.7	0.4	1.5	No
442	Scientific Way	Irvine Center Drive to Wald	54.6	55.0	0.4	5.0	No
443	Shady Canyon Drive	Culver Drive/Bonita Canyon Drive to Cloverfield	68.6	69.2	0.6	1.5	No
444	Shady Canyon Drive	Bommer Canyon Road to Sunnyhill	67.1	67.5	0.4	1.5	No
445	Skyhawk	Great Park Boulevard to Marine Way	52.8	59.6	6.8	5.0	Yes
446	Southwood	Yale Avenue to Colt	60.5	60.5	0.0	3.0	No
447	Southwood	Challenger to Yale Avenue	59.9	60.2	0.3	5.0	No
448	Spectrum Center Drive (Fortune Drive)	Pacifica to Quassar Drive (Spectrum )	61.4	61.9	0.5	3.0	No
449	Spectrum Center Drive (Fortune Drive)	Quassar Drive (Spectrum ) to Gatewayb	62.0	62.4	0.4	3.0	No

Table 13

450	Sunnyhill	Shady Canyon Drive to Turtle Rock Drive	56.9	57.6	0.7	5.0	No
451	Technology Drive	Barranca Parkway to Alton Parkway	67.0	70.6	3.6	1.5	Yes
452	Technology Drive	Old Laguna Canyon Road to I-5/SR-133 Undercrossing	63.2	69.2	6.0	3.0	Yes
453	Technology Drive	I-5/SR-133 to Barranca Parkway	62.8	69.1	6.3	3.0	Yes
454	Technology Drive	Ada to Alton Parkway	57.8	63.0	5.2	5.0	Yes
455	Toledo Way	Bake Parkway to City Limits	65.5	65.7	0.2	1.5	No
456	Toledo Way	Goodyear to Bake Parkway	64.5	64.7	0.2	3.0	No
457	Toledo Way	Alton Parkway to Parker	63.9	64.3	0.4	3.0	No
458	Trabuco Road	Keystone to Sand Canyon Avenue	66.7	67.1	0.4	1.5	No
459	Trabuco Road	Jeffrey Road to Keystone	66.7	66.9	0.2	1.5	No
460	Trabuco Road	Culver Drive to I-5 NB Off-Ramp	66.3	66.7	0.4	1.5	No
461	Trabuco Road	Monroe to Yale Avenue	66.3	66.6	0.3	1.5	No
462	Trabuco Road	I-5 NB Off-Ramp to Monroe	66.3	66.5	0.2	1.5	No
463	Trabuco Road	Yale Avenue to Remington	65.7	66.2	0.5	1.5	No
464	Trabuco Road	Remington to Jeffrey Road	65.7	66.0	0.3	1.5	No
465	Turtle Ridge Drive	Federation Way to Bonita Canyon	0.0	68.8	68.8	5.0	Yes
466	Turtle Rock Drive	Ridgeline to Willowleaf	66.9	67.8	0.9	1.5	No
467	Turtle Rock Drive	Silkwood to Sunnyhill	67.0	67.7	0.7	1.5	No
468	Turtle Rock Drive	Canyon Park to Ridgeline	66.7	67.0	0.3	1.5	No
469	Turtle Rock Drive	Sunnyhill to Southernwood	63.9	64.0	0.1	3.0	No
470	Turtle Rock Drive	Campus Drive to Hillgate	63.8	64.1	0.3	3.0	No
471	Turtle Rock Drive	Paseo Segovia to Campus Drive	65.3	65.4	0.1	1.5	No
472	University Drive	Golden Glow to Yale Avenue	72.2	72.9	0.7	1.5	No
473	University Drive	Ridgeline to Michelson Drive	72.1	72.5	0.4	1.5	No
474	University Drive	Culver Drive to Golden Glow	72.1	72.8	0.7	1.5	No
475	University Drive	Yale Avenue to Ridgeline	72.0	72.3	0.3	1.5	No
476	University Drive	Michelson Drive to I-405 SB Off-Ramp	72.3	72.7	0.4	1.5	No
477	University Drive	Mesa to Campus Drive	73.3	74.5	1.2	1.5	No
478	University Drive	MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	73.3	74.4	1.1	1.5	No
479	University Drive	California Avenue to Mesa	73.3	74.3	1.0	1.5	No
480	University Drive	Campus Drive to Harvard Avenue	69.5	70.6	1.1	1.5	No
481	University Drive	SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	70.4	71.5	1.1	1.5	No
482	University Drive	SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps	69.2	70.1	0.9	1.5	No
483	University Drive	San Joaquin to Culver Drive	68.7	69.7	1.0	1.5	No
484	University Drive	Harvard Avenue to San Joaquin	68.7	69.7	1.0	1.5	No

Table 13

485	Valley Oak Drive	Hawkcreek to Barranca Parkway	63.0	68.0	5.0	3.0	Yes
486	Valley Oak Drive	Irvine Center Drive to Oak Canyon Drive	65.2	69.0	3.8	1.5	Yes
487	Valley Oak Drive	Barranca Parkway to Irvine Center Drive	62.9	66.7	3.8	3.0	Yes
488	Valley Oak Drive	Alton Parkway to Hawkcreek	63.8	64.8	1.0	3.0	No
489	Von Karman Avenue	Marriott to Morse Avenue	68.9	70.9	2.0	1.5	Yes
490	Von Karman Avenue	Michelson Drive to Quartz	68.8	70.7	1.9	1.5	Yes
491	Von Karman Avenue	McGaw Avenue to Alton Parkway	69.3	70.7	1.4	1.5	No
492	Von Karman Avenue	Alton Parkway to Barranca Parkway	68.4	70.3	1.9	1.5	Yes
493	Von Karman Avenue	Main Street to Anchor	69.2	70.6	1.4	1.5	No
494	Von Karman Avenue	Anchor to McGaw Avenue	69.2	70.4	1.2	1.5	No
495	Von Karman Avenue	Morse to Main Street	69.2	70.2	1.0	1.5	No
496	Von Karman Avenue	Martin to Dupont Drive	67.8	69.5	1.7	1.5	Yes
497	Von Karman Avenue	Campus Drive to Martin	67.8	69.5	1.7	1.5	Yes
498	Von Karman Avenue	Dupont Drive to Michelson Drive	67.8	69.5	1.7	1.5	Yes
499	Walnut Avenue	Jeffrey Road to I-5 SB Off-Ramp	68.9	70.9	2.0	1.5	Yes
500	Walnut Avenue	Myford Road to Jamboree Road SB Off-Ramp	68.6	69.1	0.5	1.5	No
501	Walnut Avenue	The Mall Street to Culver Drive	68.2	68.7	0.5	1.5	No
502	Walnut Avenue	Harvard Avenue to The Mall Street	68.2	68.7	0.5	1.5	No
503	Walnut Avenue	Franciscan Street to Ravenwood Street	68.0	68.4	0.4	1.5	No
504	Walnut Avenue	Ravenwood Street to Yale Avenue	68.0	68.4	0.4	1.5	No
505	Walnut Avenue	Culver Drive to Franciscan Street	68.0	68.3	0.3	1.5	No
506	Walnut Avenue	Peters Canyon Road to Harvard Avenue	67.0	67.9	0.9	1.5	No
507	Walnut Avenue	Jamboree Road NB Off-Ramp to Peters Canyon Road	67.0	67.8	0.8	1.5	No
508	Walnut Avenue	Yale Avenue to Kazan Street	66.3	67.1	0.8	1.5	No
509	Walnut Avenue	Wisteria to Jeffrey Road	66.3	67.1	0.8	1.5	No
510	Warner Avenue	Jamboree Road SB Off-ramp to Construction North	69.6	70.2	0.6	1.5	No
511	Warner Avenue	Construction North to Harvard Avenue	67.8	68.6	0.8	1.5	No
512	Warner Avenue	Harvard Avenue to Paseo Westpark	66.1	67.0	0.9	1.5	No
513	Warner Avenue	Santa Ynez to Culver Drive	65.1	66.0	0.9	1.5	No
514	Warner Avenue	Culver Drive to West Yale Loop	64.9	65.7	0.8	3.0	No
515	West Yale Loop	Alton Parkway to Blue Lake North	63.3	64.0	0.7	3.0	No
516	West Yale Loop	Eagle Run to Main Street	63.3	63.8	0.5	3.0	No
517	West Yale Loop	Thunder Run to Yale Avenue	62.7	63.9	1.2	3.0	No
518	West Yale Loop	Main Street to Timber Run	62.7	62.9	0.2	3.0	No
519	West Yale Loop	Yale Avenue to Shorebird	61.8	62.9	1.1	3.0	No

Table 13

520	West Yale Loop	Warner Avenue to Stonecreek South	61.8	62.6	0.8	3.0	No
521	West Yale Loop	Barranca Parkway to Alton Parkway	61.7	62.4	0.7	3.0	No
522	West Yale Loop	Stonecreek North to Warner Avenue	61.8	62.4	0.6	3.0	No
523	West Yale Loop	Birdsong to Barranca Parkway	61.8	62.3	0.5	3.0	No
524	Westwood	Yorktown to Bryan Avenue	63.2	63.6	0.4	3.0	No
525	Westwood	Bryan Avenue to Leaf	61.3	61.5	0.2	3.0	No
526	Yale Avenue	Deerfield Avenue to Winvale Avenue	68.5	68.6	0.1	1.5	No
527	Yale Avenue	Hicks Canyon Drive to Meadowood	67.2	67.3	0.1	1.5	No
528	Yale Avenue	Walnut Avenue to Roosevelt	70.7	71.0	0.3	1.5	No
529	Yale Avenue	Roosevelt to Trabuco Road	66.9	67.0	0.1	1.5	No
530	Yale Avenue	Irvine Center Drive to Deerfield Avenue	66.5	66.9	0.4	1.5	No
531	Yale Avenue	West Yale Loop to Irvine Center Drive	65.0	66.3	1.3	1.5	No
532	Yale Avenue	Winvale Avenue to Karen Ann Lane	65.6	65.7	0.1	1.5	No
533	Yale Avenue	Karen Ann Lane to Walnut Avenue	65.6	65.7	0.1	1.5	No
534	Yale Avenue	Trabuco Road to Southwood	65.1	65.6	0.5	1.5	No
535	Yale Avenue	Southwood to Bryan Avenue	65.1	65.4	0.3	1.5	No
536	Yale Avenue	Northwood to Irvine Boulevard	64.8	65.1	0.3	3.0	No
537	Yale Avenue	Bryan Avenue to Monticello	64.8	65.0	0.2	3.0	No
538	Yale Avenue	Irvine Boulevard to Park Place	64.1	64.3	0.2	3.0	No
539	Yale Avenue	University Drive to Royce	57.9	63.4	5.5	5.0	Yes
540	Yale Court	Arborwood to Portola Parkway	60.0	60.3	0.3	1.5	No

<sup>1</sup> Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use.

<sup>3</sup> Does the Project create an incremental noise level increase exceeding the significance criteria?

Table 14

Table 13: Existing and Cumulative Conservative Plan Traffic Noise Level Increases

ID	Road	Segment	CNEL at Receiving Land Use (dBA) <sup>2</sup>				Incremental Noise Level Increase Threshold <sup>3</sup>	
			Existing	Conservative	Cumulative Conservative	Cumulative Increase	Limit	Exceeded?
1	Ada	Barranca Parkway to Marine Way	0.0	70.8	70.8	70.8	5.0	Yes
2	Ada	Alton Parkway to Barranca Parkway	60.3	69.3	69.3	9.0	3.0	Yes
3	Alton Parkway	Enterprise to I-5 NB Off-Ramp	71.3	74.1	74.1	2.8	1.5	Yes
4	Alton Parkway	I-5 NB Off-Ramp to Technology Drive West	72.1	74.8	74.8	2.7	1.5	Yes
5	Alton Parkway	East Yale Loop to Jeffrey Road	71.3	71.8	71.8	0.5	1.5	No
6	Alton Parkway	Gateway Boulevard to Enterprise	69.3	72.0	72.0	2.7	1.5	Yes
7	Alton Parkway	Jeffrey Road to Royal Oak	70.1	70.9	70.9	0.8	1.5	No
8	Alton Parkway	Daimler Street to Red Hill Avenue	63.7	70.7	70.7	7.0	3.0	Yes
9	Alton Parkway	Culver Drive to West Yale Loop	70.4	70.7	70.7	0.3	1.5	No
10	Alton Parkway	West Yale Loop to Lake Road	70.3	70.7	70.7	0.4	1.5	No
11	Alton Parkway	Technology Drive West to Ada	70.2	72.6	72.6	2.4	1.5	Yes
12	Alton Parkway	Creek Road to East Yale Loop	70.1	70.6	70.7	0.6	1.5	No
13	Alton Parkway	Red Hill Avenue to Von Karman Avenue	68.1	70.5	70.6	2.5	1.5	Yes
14	Alton Parkway	Lake Road to Creek Road	70.1	70.4	70.4	0.3	1.5	No
15	Alton Parkway	Telemetry to Banting	69.0	70.4	70.5	1.5	1.5	Yes
16	Alton Parkway	Irvine Boulevard to Commercentre	70.3	70.8	70.8	0.5	1.5	No
17	Alton Parkway	Jenner to Telemetry	69.0	70.4	70.4	1.4	1.5	No
18	Alton Parkway	Irvine Center Drive to Gateway Boulevard	68.6	71.2	71.3	2.7	1.5	Yes
19	Alton Parkway	Sand Canyon Avenue to Hospital	72.1	73.7	73.7	1.6	1.5	Yes
20	Alton Parkway	Laguna Canyon Road to Jenner	69.0	70.3	70.3	1.3	1.5	No
21	Alton Parkway	Technology Drive East to Barranca Pkwy/Muirlands Blvd	69.1	71.2	71.2	2.1	1.5	Yes
22	Alton Parkway	Royal Oak to Valley Oak Drive	69.4	70.1	70.1	0.7	1.5	No
23	Alton Parkway	Banting to Pacifica	68.4	70.0	70.1	1.7	1.5	Yes
24	Alton Parkway	Barranca Pkwy/Muirlands Blvd to Jeronimo Road	70.1	70.9	71.0	0.9	1.5	No
25	Alton Parkway	Ada to Technology Drive East	69.2	70.7	70.7	1.5	1.5	Yes
26	Alton Parkway	Von Karman Avenue to Jamboree Road	68.7	69.7	69.8	1.1	1.5	No
27	Alton Parkway	Jeronimo Road to Hughes	69.8	69.9	69.9	0.1	1.5	No
28	Alton Parkway	Hughes to Morgan	69.5	69.8	69.8	0.3	1.5	No
29	Alton Parkway	Morgan to Toledo Way	68.8	69.1	69.1	0.3	1.5	No
30	Alton Parkway	San Marino to Culver Drive	68.8	69.2	69.2	0.4	1.5	No
31	Alton Parkway	Jamboree Road to Murphy Avenue	68.0	69.0	69.2	1.2	1.5	No

Table 14

32	Alton Parkway	Hospital to Laguna Canyon Road	70.7	72.0	72.1	1.4	1.5	No
33	Alton Parkway	Valley Oak Drive to Sand Canyon Avenue	71.1	71.8	71.9	0.8	1.5	No
34	Alton Parkway	Murphy Avenue to Harvard Avenue	68.1	68.8	69.0	0.9	1.5	No
35	Alton Parkway	Foster to Irvine Boulevard	68.0	68.7	68.7	0.7	1.5	No
36	Alton Parkway	Fairbanks to Foster	67.5	68.5	68.6	1.1	1.5	No
37	Alton Parkway	Toledo Way to Berteia	68.2	68.4	68.4	0.2	1.5	No
38	Alton Parkway	Pacifica to Meridian	69.7	71.7	71.7	2.0	1.5	Yes
39	Alton Parkway	Berteia to Fairbanks	68.1	68.3	68.3	0.2	1.5	No
40	Alton Parkway	Meridian to Irvine Center Drive	66.6	68.3	68.3	1.7	1.5	Yes
41	Alton Parkway	Paseo Westpark to San Marino	67.9	68.3	68.3	0.4	1.5	No
42	Alton Parkway	Harvard Avenue to Paseo Westpark	66.9	67.7	67.9	1.0	1.5	No
43	Astor	Lynx to Fairbanks	57.5	67.1	67.1	9.6	5.0	Yes
44	Astor	Cadence to Lynx	0.0	65.9	65.9	65.9	5.0	Yes
45	Bake Parkway	I-5 NB Off-Ramp to Rockfield Boulevard	75.4	76.7	76.7	1.3	1.5	No
46	Bake Parkway	Muirlands Boulevard to Jeronimo Road	72.7	73.0	73.1	0.4	1.5	No
47	Bake Parkway	Rockfield Boulevard to Muirlands Boulevard	74.7	75.1	75.1	0.4	1.5	No
48	Bake Parkway	Jeronimo Road to Toledo Way	71.9	72.1	72.2	0.3	1.5	No
49	Bake Parkway	Toledo Way to Cromwell	71.5	71.7	71.7	0.2	1.5	No
50	Bake Parkway	Cromwell to Irvine Boulevard	71.4	71.6	71.6	0.2	1.5	No
51	Bake Parkway	Research Drive to I-5 SB Off-Ramp	68.5	69.6	69.7	1.2	1.5	No
52	Bake Parkway	Irvine Center Drive to Research Drive	64.1	64.9	65.1	1.0	3.0	No
53	Bake Parkway	Lake Forest Drive to Irvine Center Drive	61.9	63.4	63.7	1.8	3.0	No
54	Banting	Alton Parkway to Barranca Parkway	57.6	60.3	60.3	2.7	5.0	No
55	Barranca Parkway	Pacifica to Irvine Center Drive	70.5	73.3	73.3	2.8	1.5	Yes
56	Barranca Parkway	Banting to Pacifica	70.7	72.8	72.8	2.1	1.5	Yes
57	Barranca Parkway	I-5 HOV Ramp to Technology Drive West	69.8	73.0	73.0	3.2	1.5	Yes
58	Barranca Parkway	Technology Drive West to Ada	70.4	72.7	72.7	2.3	1.5	Yes
59	Barranca Parkway	Irvine Center Drive to I-5 HOV Ramp	69.3	72.6	72.6	3.3	1.5	Yes
60	Barranca Parkway	Culver Drive to West Yale Loop	71.9	72.3	72.3	0.4	1.5	No
61	Barranca Parkway	East Yale Loop to Jeffrey Road	71.7	72.2	72.3	0.6	1.5	No
62	Barranca Parkway	West Yale Loop to Lake Road	71.6	72.1	72.1	0.5	1.5	No
63	Barranca Parkway	Ada to Alton Parkway	70.2	72.1	72.2	2.0	1.5	Yes
64	Barranca Parkway	Lake Road to Creek Road	71.2	71.8	71.8	0.6	1.5	No
65	Barranca Parkway	Red Hill Avenue to Armstrong Avenue	73.3	74.7	74.8	1.5	1.5	Yes
66	Barranca Parkway	Discovery/Herchel to Banting	69.7	71.6	71.7	2.0	1.5	Yes
67	Barranca Parkway	Lyon to East Yale Loop	71.0	71.6	71.6	0.6	1.5	No
68	Barranca Parkway	Creek Road to Lyon	70.9	71.5	71.5	0.6	1.5	No

Table 14

69	Barranca Parkway	Von Karman Avenue to Jamboree Road	71.5	72.8	72.8	1.3	1.5	No
70	Barranca Parkway	Sand Canyon Avenue to Laguna Canyon Road	68.5	71.1	71.1	2.6	1.5	Yes
71	Barranca Parkway	Armstrong Avenue to Von Karman Avenue	72.0	72.5	72.5	0.5	1.5	No
72	Barranca Parkway	Valley Oak Drive to Sand Canyon Avenue	69.1	70.8	70.8	1.7	1.5	Yes
73	Barranca Parkway	Jamboree Road to Construction Circle	70.1	71.2	71.2	1.1	1.5	No
74	Barranca Parkway	Santa Rosa to Culver Drive	69.8	71.0	71.1	1.3	1.5	No
75	Barranca Parkway	FedEx to Discovery/Herchel	68.8	70.5	70.6	1.8	1.5	Yes
76	Barranca Parkway	Jeffrey Road to Valley Oak Drive	68.3	70.4	70.5	2.2	1.5	Yes
77	Barranca Parkway	Laguna Canyon Road to FedEx	68.8	70.4	70.4	1.6	1.5	Yes
78	Barranca Parkway	Pullman Street to Red Hill Avenue	72.7	73.7	73.6	0.9	1.5	No
79	Barranca Parkway	Construction Circle to Fire Station	69.4	70.6	70.6	1.2	1.5	No
80	Barranca Parkway	Fire Station to Harvard Avenue	69.4	70.6	70.6	1.2	1.5	No
81	Barranca Parkway	Paseo Westpark to Santa Rosa	69.3	70.6	70.6	1.3	1.5	No
82	Barranca Parkway	Harvard Avenue to Paseo Westpark	69.2	70.2	70.3	1.1	1.5	No
83	Bay Tree	Trabuco Road to Roosevelt	56.1	57.1	57.1	1.0	5.0	No
84	Beacon	Ridge Valley to Benchmark	0.0	59.7	59.7	59.7	5.0	Yes
85	Benchmark (LN Street)	Ridge Valley (O Street) to Bosque	0.0	56.5	56.5	56.5	5.0	Yes
86	Bison Avenue	SR-73 NB Off-Ramp to California Avenue	68.6	69.6	69.7	1.1	1.5	No
87	Bonita Canyon Drive	MacArthur Boulevard to SR-73	70.0	70.3	70.3	0.3	1.5	No
88	Bonita Canyon Drive	Turtle Ridge to Shady Canyon Drive	67.5	68.6	68.6	1.1	1.5	No
89	Bonita Canyon Drive	Newport Coast Drive to Turtle Ridge	67.5	68.2	68.2	0.7	1.5	No
90	Bonita Canyon Drive	SR-73 NB Off-Ramp to Newport Coast Drive	67.5	68.0	68.1	0.6	1.5	No
91	Bosque	Cadence to Great Park Boulevard	63.0	65.2	65.2	2.2	3.0	No
92	Bosque	Irvine Boulevard to Benchmark (LN Street)	59.7	63.6	63.6	3.9	5.0	No
93	Bosque	Benchmark to Cadence	59.7	63.2	63.2	3.5	5.0	No
94	Bosque	Great Park Boulevard to Beacon	0.0	56.8	56.8	56.8	5.0	Yes
95	Bosque	Beacon to S 5th Street	0.0	56.2	56.2	56.2	5.0	Yes
96	Bryan Avenue	Jamboree Road to Market Place	68.7	69.0	69.1	0.4	1.5	No
97	Bryan Avenue	Market Place to El Camino Real	68.7	68.9	68.8	0.1	1.5	No
98	Bryan Avenue	Rubicon to Culver Drive	68.7	68.8	68.9	0.2	1.5	No
99	Bryan Avenue	El Camino Real to Rubicon	68.7	68.8	68.9	0.2	1.5	No
100	Bryan Avenue	Eastwood to Jeffrey Road	65.8	67.1	67.2	1.4	1.5	No
101	Bryan Avenue	Westwood to Yale Avenue	66.3	66.8	66.8	0.5	1.5	No
102	Bryan Avenue	Culver Drive to Westwood	66.3	66.7	66.7	0.4	1.5	No
103	Bryan Avenue	Yale Avenue to Eastwood	65.8	66.7	66.8	1.0	1.5	No
104	Cadence	Pusan to Chinon	64.5	65.6	65.6	1.1	3.0	No
105	Cadence	Bosque to Pusan	65.7	65.3	65.3	-0.4	1.5	No



Table 14

106	Cadence	Ridge Valley (O Street) to Bosque	62.6	64.0	64.0	1.4	3.0	No
107	Cadence	Chinon to Merit	62.6	62.3	62.4	-0.2	3.0	No
108	Cadence	Merit to Astor	0.0	59.4	59.4	59.4	5.0	Yes
109	California Avenue	University Drive to Academy Way	64.3	66.2	67.3	3.0	3.0	Yes
110	California Avenue	Campus Drive to Harvard Avenue	63.2	64.2	64.2	1.0	3.0	No
111	California Avenue	Theory to Bison Avenue	63.1	63.9	64.0	0.9	3.0	No
112	Campus Drive	Carlson Avenue to University Drive	70.9	73.2	73.3	2.4	1.5	Yes
113	Campus Drive	University Drive to Bridge Road	70.1	71.8	71.8	1.7	1.5	Yes
114	Campus Drive	Jamboree Road to Carlson Avenue	69.0	71.5	71.6	2.6	1.5	Yes
115	Campus Drive	Stanford Court to Berkeley Avenue	70.1	71.1	71.1	1.0	1.5	No
116	Campus Drive	California Avenue to Culver Drive	68.9	70.9	70.9	2.0	1.5	Yes
117	Campus Drive	Berkeley Avenue to Cornell	68.9	70.0	69.9	1.0	1.5	No
118	Campus Drive	Martin to Von Karman Avenue	67.5	69.1	69.2	1.7	1.5	Yes
119	Campus Drive	Culver Drive to Paseo Montoya (Turtle Rock Drive)	68.5	68.7	68.7	0.2	1.5	No
120	Campus Drive	Von Karman Avenue to Teller Avenue	66.8	68.4	68.5	1.7	1.5	Yes
121	Campus Drive	MacArthur Boulevard to Martin	67.5	68.2	68.3	0.8	1.5	No
122	Campus Drive	Teller Avenue to Jamboree Road	66.8	67.5	67.6	0.8	1.5	No
123	Carlson Avenue	Michelson Drive to Campus Drive	64.5	67.9	67.9	3.4	3.0	Yes
124	Chinon	Irvine Boulevard to Cadence	56.6	58.8	58.8	2.2	5.0	No
125	Creek Road	Alton Parkway to Barranca Parkway	55.3	56.3	56.3	1.0	5.0	No
126	Culver Drive	Michelson Drive to I-405 SB Off-Ramp	73.4	74.0	73.9	0.5	1.5	No
127	Culver Drive	I-405 SB Off-Ramp to I-405 NB Off Ramp	73.4	73.9	73.8	0.4	1.5	No
128	Culver Drive	I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)	73.7	73.9	73.9	0.2	1.5	No
129	Culver Drive	Scottsdale Drive to I-5 SB Off- Ramp	73.7	73.8	73.8	0.1	1.5	No
130	Culver Drive	I-405 NB Off-Ramp to San Leandro	73.4	73.6	73.6	0.2	1.5	No
131	Culver Drive	San Leandro to Main Street	73.2	73.3	73.3	0.1	1.5	No
132	Culver Drive	Harvard Avenue to University Drive	72.7	73.4	73.4	0.7	1.5	No
133	Culver Drive	Trabuco Road to Farwell Avenue	74.1	74.2	74.2	0.1	1.5	No
134	Culver Drive	Alton Parkway to Barranca Parkway	72.9	73.2	73.2	0.3	1.5	No
135	Culver Drive	Main Street to Alton Parkway	72.7	73.1	73.1	0.4	1.5	No
136	Culver Drive	Warner Avenue to Irvine Center Drive	72.7	73.0	73.0	0.3	1.5	No
137	Culver Drive	Walnut Avenue to Scottsdale Dive	72.6	72.9	72.8	0.2	1.5	No
138	Culver Drive	Barranca Parkway to Warner Avenue	72.6	72.8	72.9	0.3	1.5	No
139	Culver Drive	Shady Canyon Drive to Palo Verde	71.4	72.0	72.0	0.6	1.5	No
140	Culver Drive	Deerfield Avenue to Walnut Avenue	72.3	72.5	72.5	0.2	1.5	No
141	Culver Drive	Sandburg Way to Michelson Drive	71.9	72.5	72.5	0.6	1.5	No
142	Culver Drive	Irvine Center Drive to Deerfield Avenue	72.1	72.4	72.4	0.3	1.5	No

Table 14

143	Culver Drive	Palo Verde to Campus Drive	71.4	71.6	71.6	0.2	1.5	No
144	Culver Drive	University Drive to Sandburg Way	71.5	72.2	72.2	0.7	1.5	No
145	Culver Drive	Farwell Avenue to Bryan Avenue	72.8	73.2	73.2	0.4	1.5	No
146	Culver Drive	Campus Drive to High School	71.6	72.1	72.1	0.5	1.5	No
147	Culver Drive	High School to Harvard Avenue	71.6	72.0	72.0	0.4	1.5	No
148	Culver Drive	Bryan Avenue to Florence	71.5	71.8	71.8	0.3	1.5	No
149	Culver Drive	Portola Parkway to Settlers	68.9	71.2	71.2	2.3	1.5	Yes
150	Culver Drive	Florence to Irvine Boulevard	71.3	71.7	71.7	0.4	1.5	No
151	Culver Drive	Irvine Boulevard to Viewpark	70.0	70.5	70.5	0.5	1.5	No
152	Culver Drive	Viewpark to Meadowood	70.0	70.4	70.4	0.4	1.5	No
153	Culver Drive	Settlers to Furrow	0.0	68.5	68.6	68.6	5.0	Yes
154	Culver Drive	Meadowood to Portola Parkway	68.3	69.0	69.0	0.7	1.5	No
155	Discovery Drive	Irvine Center Drive to Laguna Canyon Road	56.6	65.5	65.5	8.9	5.0	Yes
156	Discovery Drive	Waterworks Way to Irvine Center Drive	0.0	63.6	63.6	63.6	5.0	Yes
157	East Yale Loop	Alton Parkway to Witherspoon	64.6	65.6	65.6	1.0	3.0	No
158	East Yale Loop	Osborn Street to Barranca Parkway	64.3	65.4	65.4	1.1	3.0	No
159	East Yale Loop	Yale Avenue to Springbrook South	62.3	65.0	65.0	2.7	3.0	No
160	East Yale Loop	Springbrook North to Alton Parkway	62.3	63.6	63.6	1.3	3.0	No
161	East Yale Loop	Woodspring to Yale Avenue	62.3	62.8	62.9	0.6	3.0	No
162	East Yale Loop	Barranca Parkway to Eastshore	62.3	62.4	62.5	0.2	3.0	No
163	Eastwood	Bryan Avenue to Monticello	59.5	60.8	60.9	1.4	5.0	No
164	Eastwood	Columbus to Bryan Avenue	58.5	58.8	58.9	0.4	5.0	No
165	El Camino Real	Jamboree Road to Alliance (SR-261 Bridge)	66.9	67.1	67.2	0.3	1.5	No
166	El Camino Real North	El Camino Real to Bryan Avenue	62.2	62.4	62.4	0.2	3.0	No
167	Fairbanks	Alton Parkway to Astor	61.3	69.8	69.9	8.6	3.0	Yes
168	Fairbanks	Irvine Boulevard to Alton Parkway	0.0	66.9	66.9	66.9	5.0	Yes
169	Fairchild Road	MacArthur Boulevard to Jamboree Road	63.3	64.0	64.0	0.7	3.0	No
170	Gateway Boulevard	Alton Parkway to Irvine Center Drive	57.0	63.5	63.5	6.5	5.0	Yes
171	Gateway Boulevard	Spectrum Center Drive (Fortune Drive) to Alton Parkway	59.4	62.3	62.2	2.8	5.0	No
172	Gateway Boulevard	Irvine Center Drive to Meridian	56.8	59.2	59.2	2.4	5.0	No
173	Great Park Boulevard	Sand Canyon to Ridge Valley	70.5	74.6	74.6	4.1	1.5	Yes
174	Great Park Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	64.0	70.3	70.4	6.4	3.0	Yes
175	Great Park Boulevard (EB)	Bosque to Skyhawk	0.0	69.0	69.1	69.1	5.0	Yes
176	Great Park Boulevard (WB)	Bosque to Skyhawk	0.0	68.4	68.4	68.4	5.0	Yes
177	Harvard Avenue	University Drive to Michelson Drive	71.2	72.0	72.1	0.9	1.5	No
178	Harvard Avenue	Michelson Drive to Coronado	69.5	70.4	70.5	1.0	1.5	No
179	Harvard Avenue	San Marino to Alton Parkway	69.4	70.2	70.3	0.9	1.5	No

Table 14

180	Harvard Avenue	Coronado to Main Street	69.3	70.1	70.2	0.9	1.5	No
181	Harvard Avenue	San Carlo to San Marino	69.4	70.1	70.2	0.8	1.5	No
182	Harvard Avenue	Main Street to San Carlo	69.3	70.0	70.1	0.8	1.5	No
183	Harvard Avenue	Alton Parkway to San Leon	68.5	68.8	68.6	0.1	1.5	No
184	Harvard Avenue	San Juan to Barranca Parkway	68.5	68.8	68.7	0.2	1.5	No
185	Harvard Avenue	San Leon to San Juan	68.4	68.6	68.6	0.2	1.5	No
186	Harvard Avenue	Irvine Center Drive to Deerfield Avenue	65.5	67.5	67.5	2.0	1.5	Yes
187	Harvard Avenue	Deerfield Avenue to Poplar Street	65.5	67.4	67.4	1.9	1.5	Yes
188	Harvard Avenue	Barranca Parkway to Warner Avenue	67.6	67.9	67.9	0.3	1.5	No
189	Harvard Avenue	Bridge Road to University Drive	67.2	67.9	67.8	0.6	1.5	No
190	Harvard Avenue	Paseo Westpark to Irvine Center Drive	66.1	67.8	67.8	1.7	1.5	Yes
191	Harvard Avenue	Poplar Street to Walnut Avenue	66.8	68.8	68.9	2.1	1.5	Yes
192	Harvard Avenue	California Avenue to Berkeley Avenue	66.1	67.4	67.3	1.2	1.5	No
193	Harvard Avenue	Culver Drive to California Avenue	66.1	67.3	67.3	1.2	1.5	No
194	Harvard Avenue	Berkeley to Bridge Road	66.1	67.2	67.2	1.1	1.5	No
195	Harvard Avenue	Warner Avenue to Paseo Westpark	65.9	66.7	66.8	0.9	1.5	No
196	Hicks Canyon Drive	Delamesa to Yale Avenue	58.2	58.2	58.2	0.0	5.0	No
197	Hornet (5th St)	Ridge Valley (O Street) to Bosque	0.0	57.5	57.5	57.5	5.0	Yes
198	Hubble	Irvine Center Drive to Bunsen	55.5	55.9	56.1	0.6	5.0	No
199	Irvine Boulevard	SR-133 NB Off- Ramp to Ridge Valley (O Street)	72.1	72.2	72.3	0.2	1.5	No
200	Irvine Boulevard	SR-133 SB Off-Ramp to SR-133 NB Off-Ramp	72.0	72.2	72.2	0.2	1.5	No
201	Irvine Boulevard	Sand Canyon to SR-133 SB Off-Ramp	72.9	73.0	73.0	0.1	1.5	No
202	Irvine Boulevard	Merit to Alton	71.4	71.6	71.6	0.2	1.5	No
203	Irvine Boulevard	Journey to Sand Canyon Avenue	71.4	71.6	71.7	0.3	1.5	No
204	Irvine Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	70.9	71.1	71.2	0.3	1.5	No
205	Irvine Boulevard	Pusan Way to Chinon (B Street)	70.8	71.0	71.0	0.2	1.5	No
206	Irvine Boulevard	Palo Lado to Yale Avenue	70.4	71.2	71.3	0.9	1.5	No
207	Irvine Boulevard	Culver Drive to Palo Lado	70.5	71.2	71.3	0.8	1.5	No
208	Irvine Boulevard	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.5	71.1	71.1	0.6	1.5	No
209	Irvine Boulevard	Old Myford Road to Market Place	70.3	71.1	71.2	0.9	1.5	No
210	Irvine Boulevard	Bosque (LY Street) to Modjeska	70.5	71.1	71.2	0.7	1.5	No
211	Irvine Boulevard	Jamboree Road to Old Myford Road	70.3	71.0	71.1	0.8	1.5	No
212	Irvine Boulevard	Market Place to SR-261 SB Off-Ramp	70.3	71.0	71.1	0.8	1.5	No
213	Irvine Boulevard	Jeffrey Road to Groveland	70.6	70.9	71.1	0.5	1.5	No
214	Irvine Boulevard	Bake Parkway to Lake Forest Drive	69.8	70.5	70.6	0.8	1.5	No
215	Irvine Boulevard	Independence Way (The Groves)/ The Groves to Jeffrey Road	70.2	70.7	70.8	0.6	1.5	No
216	Irvine Boulevard	Chinon (B Street) to Merit	70.2	70.5	70.5	0.3	1.5	No

Table 14

217	Irvine Boulevard	SR-261 NB Off-Ramp to Central Park	70.1	70.6	70.7	0.6	1.5	No
218	Irvine Boulevard	Pueblo Norte to Independence Way (The Groves)/ Parkwood	69.9	70.5	70.6	0.7	1.5	No
219	Irvine Boulevard	Yale Avenue to Pueblo Norte	69.9	70.4	70.5	0.6	1.5	No
220	Irvine Boulevard	Modjeska to Pusan Way	70.0	70.2	70.2	0.2	1.5	No
221	Irvine Boulevard	Central Park Avenue to Culver Drive	69.5	70.0	70.0	0.5	1.5	No
222	Irvine Boulevard	Parker to Bake Parkway	69.0	69.6	69.7	0.7	1.5	No
223	Irvine Boulevard	Alton Parkway to Fairbanks	68.4	68.6	68.6	0.2	1.5	No
224	Irvine Center Drive	Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp	71.3	72.7	72.8	1.5	1.5	Yes
225	Irvine Center Drive	Orange Tree to Valley Oak Drive	69.7	72.0	72.0	2.3	1.5	Yes
226	Irvine Center Drive	I-405 SB Off-Ramp to Research	70.9	72.2	72.3	1.4	1.5	No
227	Irvine Center Drive	Irvine Valley College to Orange Tree	69.7	71.9	71.9	2.2	1.5	Yes
228	Irvine Center Drive	Fontaine Avenue to Jeffrey Road	69.5	71.7	71.7	2.2	1.5	Yes
229	Irvine Center Drive	Culver Drive to Deerwood	69.7	71.6	71.6	1.9	1.5	Yes
230	Irvine Center Drive	Deerwood to Yale Avenue	69.6	71.6	71.6	2.0	1.5	Yes
231	Irvine Center Drive	Yale Avenue to Fontaine Avenue	69.4	71.6	71.7	2.3	1.5	Yes
232	Irvine Center Drive	Jeffrey Road to Irvine Valley College	69.7	71.5	71.5	1.8	1.5	Yes
233	Irvine Center Drive	Alton Parkway to Spectrum	68.9	71.3	71.4	2.5	1.5	Yes
234	Irvine Center Drive	Spectrum to Pacifica	68.9	71.3	71.3	2.4	1.5	Yes
235	Irvine Center Drive	Hearthstone to Culver Drive	69.2	71.0	71.0	1.8	1.5	Yes
236	Irvine Center Drive	Charter to Barranca Parkway	68.1	70.9	71.0	2.9	1.5	Yes
237	Irvine Center Drive	Jamboree Road to Harvard Avenue	69.7	70.6	70.6	0.9	1.5	No
238	Irvine Center Drive	Pacifica to Entertainment (Enterprise/Fortune)	69.1	70.7	70.7	1.6	1.5	Yes
239	Irvine Center Drive	Valley Oak Drive to Sand Canyon Avenue	68.1	70.7	70.7	2.6	1.5	Yes
240	Irvine Center Drive	Harvard Avenue to Hearthstone	69.2	70.3	70.3	1.1	1.5	No
241	Irvine Center Drive	Research to Hubble	67.9	69.8	70.0	2.1	1.5	Yes
242	Irvine Center Drive	Barranca Parkway to Gateway Boulevard	66.9	70.1	70.2	3.3	1.5	Yes
243	Irvine Center Drive	Bake Parkway to Muller	67.9	69.7	69.8	1.9	1.5	Yes
244	Irvine Center Drive	Discovery to Charter	67.3	70.2	70.2	2.9	1.5	Yes
245	Irvine Center Drive	Hubble to Bake Parkway	67.8	69.5	69.6	1.8	1.5	Yes
246	Irvine Center Drive	Muller to Tesla	67.7	69.3	69.4	1.7	1.5	Yes
247	Irvine Center Drive	Sand Canyon Avenue to Odyssey	67.6	69.4	69.4	1.8	1.5	Yes
248	Irvine Center Drive	Tesla to Scientific Way	67.1	68.9	69.1	2.0	1.5	Yes
249	Irvine Center Drive	Scientific Way to Lake Forest Drive	67.2	68.7	68.9	1.7	1.5	Yes
250	Irvine Center Drive	Gateway Boulevard to Alton Parkway	66.7	68.8	68.9	2.2	1.5	Yes
251	Irvine Center Drive	Laguna Canyon Road to Discovery	66.8	68.8	68.9	2.1	1.5	Yes
252	Irvine Center Drive	Odyssey to Laguna Canyon Road	66.8	68.8	68.9	2.1	1.5	Yes
253	Irvine Center Drive (Edinger)	Redhill Avenue to Jamboree Road	69.6	71.0	71.1	1.5	1.5	Yes

Table 14

254	Jamboree Road	I-5 SB Off-Ramp to I-5 NB Off-Ramp	74.3	74.5	74.5	0.2	1.5	No
255	Jamboree Road	I-405 SB Off-Ramp to I-405 NB Off Ramp	75.1	75.6	75.7	0.6	1.5	No
256	Jamboree Road	Walnut Avenue to Michelle Drive	73.5	73.9	73.9	0.4	1.5	No
257	Jamboree Road	I-405 NB Off-Ramp to Main Street	76.5	77.0	77.0	0.5	1.5	No
258	Jamboree Road	Michelle Drive to I-5 SB Off-Ramp	73.5	73.6	73.6	0.1	1.5	No
259	Jamboree Road	Main Street to Kelvin Avenue	75.7	76.4	76.4	0.7	1.5	No
260	Jamboree Road	Michelson Drive to I-405 SB Off-Ramp	73.6	74.4	74.4	0.8	1.5	No
261	Jamboree Road	Kelvin Avenue to McGaw Avenue	75.5	76.0	76.1	0.6	1.5	No
262	Jamboree Road	McGaw Avenue to Alton Parkway	75.4	76.0	76.0	0.6	1.5	No
263	Jamboree Road	Birch Street to Campus Drive	72.1	73.0	73.1	1.0	1.5	No
264	Jamboree Road	Dupont Drive to Michelson Drive	73.3	73.9	74.0	0.7	1.5	No
265	Jamboree Road	Alton Parkway to Beckman	75.2	75.6	75.7	0.5	1.5	No
266	Jamboree Road	Fairchild Road to Birch Street	72.2	73.5	73.6	1.4	1.5	No
267	Jamboree Road	Beckman to Barranca Parkway	75.0	75.3	75.3	0.3	1.5	No
268	Jamboree Road	I-5 NB Off-Ramp to El Camino Real	74.9	75.1	75.1	0.2	1.5	No
269	Jamboree Road	Campus Drive to Dupont Drive	72.5	73.2	73.2	0.7	1.5	No
270	Jamboree Road	El Camino Real to West Drive	74.9	75.0	74.9	0.0	1.5	No
271	Jamboree Road	West Drive to Bryan Avenue	74.9	74.9	74.9	0.0	1.5	No
272	Jamboree Road	Bryan Avenue to Irvine Boulevard	74.5	74.6	74.6	0.1	1.5	No
273	Jamboree Road	Koll Center to Fairchild Road	71.7	72.8	72.9	1.2	1.5	No
274	Jamboree Road	MacArthur Boulevard to Koll Center	71.8	72.8	72.8	1.0	1.5	No
275	Jamboree Road	Irvine Boulevard to Portola Parkway	70.0	70.7	70.7	0.7	1.5	No
276	Jamboree Road	Warner Avenue to Edinger Avenue	79.0	79.2	79.2	0.2	1.5	No
277	Jamboree Road	Barranca Parkway to Warner Avenue	78.1	78.3	78.4	0.3	1.5	No
278	Jamboree Road	Edinger Avenue to Walnut Avenue	77.8	78.0	78.0	0.2	1.5	No
279	Jeffrey Road	Walnut Avenue to I-5 NB Off-Ramp	70.9	71.4	71.4	0.5	1.5	No
280	Jeffrey Road	I-5 NB Off-Ramp to Roosevelt	71.8	72.3	72.3	0.5	1.5	No
281	Jeffrey Road	Poplar (Meadows) to Walnut Avenue	70.4	70.9	71.0	0.6	1.5	No
282	Jeffrey Road	Alton Parkway to Barranca Parkway	70.3	70.9	70.9	0.6	1.5	No
283	Jeffrey Road	Irvine Center Drive to Poplar (Meadows)	70.2	70.7	70.8	0.6	1.5	No
284	Jeffrey Road	I-405 NB Off-Ramp to Quail Creek	70.4	70.9	71.0	0.6	1.5	No
285	Jeffrey Road	Barranca Parkway to Irvine Valley College	70.3	70.7	70.7	0.4	1.5	No
286	Jeffrey Road	Quail Creek to Alton Parkway	70.4	70.8	70.8	0.4	1.5	No
287	Jeffrey Road	Irvine Valley College to Irvine Center Drive	70.1	70.5	70.5	0.4	1.5	No
288	Jeffrey Road	Trabuco Road to Hideaway	69.4	69.6	69.7	0.3	1.5	No
289	Jeffrey Road	Hideaway to Bryan Avenue	69.4	69.6	69.7	0.3	1.5	No
290	Jeffrey Road	Roosevelt to Grove	70.0	70.4	70.4	0.4	1.5	No

Table 14

291	Jeffrey Road	Grove to Trabuco Road	70.0	70.2	70.2	0.2	1.5	No
292	Jeffrey Road	Bryan Avenue to Irvine Boulevard	68.1	68.5	68.6	0.5	1.5	No
293	Jeffrey Road	Encore to Portola Parkway	64.0	65.8	65.5	1.5	3.0	No
294	Jeffrey Road	Irvine Boulevard to Encore	64.0	65.5	65.4	1.4	3.0	No
295	Jeronimo Road	Goodyear to Bake Parkway	64.4	64.6	64.6	0.2	3.0	No
296	Jeronimo Road	Alton Parkway to Goodyear	64.1	64.3	64.3	0.2	3.0	No
297	Laguna Canyon Road	Old Laguna Canyon Road to Lake Forest Drive	72.6	73.3	73.4	0.8	1.5	No
298	Laguna Canyon Road	Laguna Canyon Freeway to Quail Hill Parkway	67.7	69.9	70.0	2.3	1.5	Yes
299	Laguna Canyon Road	Discovery to Sand Canyon Avenue	64.8	69.5	69.5	4.7	3.0	Yes
300	Laguna Canyon Road	I-405 Overcrossing to Pasteur	66.0	67.9	68.0	2.0	1.5	Yes
301	Laguna Canyon Road	Irvine Center Drive to Discovery	63.6	69.0	69.0	5.4	3.0	Yes
302	Laguna Canyon Road	Quail Hill Parkway to I-405 Overcrossing	66.0	67.9	68.0	2.0	1.5	Yes
303	Laguna Canyon Road	Pasteur to Alton Parkway	65.5	67.0	67.1	1.6	1.5	Yes
304	Laguna Canyon Road	Waterworks to Irvine Center Drive	64.5	67.5	67.5	3.0	3.0	Yes
305	Laguna Canyon Road	Alton Parkway to Barranca Parkway	64.8	66.3	66.4	1.6	3.0	No
306	Laguna Canyon Road	Barranca Parkway to Waterworks	63.9	66.2	66.3	2.4	3.0	No
307	Lake Forest Drive	Hidden Canyon to Laguna Canyon Road	68.3	69.4	69.6	1.3	1.5	No
308	Lake Forest Drive	Bake Parkway to Hidden Canyon (Romano)	68.3	69.3	69.5	1.2	1.5	No
309	Lake Forest Drive	Tesla to Bake Parkway	65.3	66.4	66.6	1.3	1.5	No
310	Lake Road	Alton Parkway to Barranca Parkway	59.0	59.2	59.2	0.2	5.0	No
311	Lynx	Irvine Boulevard to Astor	0.0	53.2	53.2	53.2	5.0	Yes
312	MacArthur Boulevard	I-405 SB Off-Ramp to Michelson Drive	76.0	76.7	76.8	0.8	1.5	No
313	MacArthur Boulevard	Main Street to I-405 NB Off-Ramp	75.8	76.7	76.7	0.9	1.5	No
314	MacArthur Boulevard	I-405 NB Off-Ramp and I-405 SB Off-Ramp	75.7	76.6	76.6	0.9	1.5	No
315	MacArthur Boulevard	Jamboree Road to Fairchild Road	69.7	69.9	69.9	0.2	1.5	No
316	MacArthur Boulevard	Fairchild Road to University Drive	69.7	69.8	69.8	0.1	1.5	No
317	MacArthur Boulevard	Fitch to Red Hill Avenue	70.4	70.5	70.5	0.1	1.5	No
318	MacArthur Boulevard	Michelson Drive to Douglas	71.3	72.2	72.3	1.0	1.5	No
319	MacArthur Boulevard	Douglas to Campus Drive	71.3	72.1	72.3	1.0	1.5	No
320	MacArthur Boulevard	Skypark to Main Street	69.0	69.5	69.5	0.5	1.5	No
321	MacArthur Boulevard	Redhill Avenue to Skypark	68.0	68.3	68.4	0.4	1.5	No
322	MacArthur Boulevard	Birch Street to Jamboree Road	66.5	67.1	67.2	0.7	1.5	No
323	MacArthur Boulevard	Campus Drive to Birch Street	68.5	69.3	69.5	1.0	1.5	No
324	Main Street	Gillette Avenue to Von Karman Avenue	69.4	70.9	70.9	1.5	1.5	Yes
325	Main Street	MacArthur Boulevard to Mercantile	69.4	70.3	70.3	0.9	1.5	No
326	Main Street	Executive Park to MacArthur Boulevard	67.7	68.4	68.5	0.8	1.5	No
327	Main Street	Von Karman Avenue to Cartwright	67.2	68.5	68.5	1.3	1.5	No

Table 14

328	Main Street	McDermott to Red Hill Avenue	67.9	68.1	68.1	0.2	1.5	No
329	Main Street	Red Hill Avenue to Executive Circle	67.7	68.0	68.0	0.3	1.5	No
330	Main Street	Jamboree Road to Union	67.4	67.8	67.9	0.5	1.5	No
331	Main Street	Culver Drive to West Yale Loop	67.0	67.2	67.2	0.2	1.5	No
332	Main Street	Siglo to Jamboree Road	67.2	67.7	67.7	0.5	1.5	No
333	Main Street	Veneto to Harvard Avenue	67.4	67.5	67.6	0.2	1.5	No
334	Main Street	Paseo Westpark to Culver Drive	66.2	66.3	66.4	0.2	1.5	No
335	Main Street	Harvard Avenue to San Mateo	66.2	66.3	66.3	0.1	1.5	No
336	Marine Way	Sand Canyon Avenue to Ridge Valley (O Street)	67.8	72.3	72.3	4.5	1.5	Yes
337	Marine Way	Alton Parkway to Bake Parkway	0.0	69.4	69.5	69.5	5.0	Yes
338	Marine Way	Lynx to Barranca Parkway	0.0	69.3	69.3	69.3	5.0	Yes
339	Marine Way	County Access to Treble	59.3	68.5	68.5	9.2	5.0	Yes
340	Marine Way	Ridge Valley (O Street) to Skyhawk	62.0	68.3	68.3	6.3	3.0	Yes
341	Marine Way	Skyhawk to County Access	59.3	67.4	67.4	8.1	5.0	Yes
342	Marine Way	Barranca Parkway to Alton Parkway	52.7	66.8	66.8	14.1	5.0	Yes
343	Marine Way	Treble to Lynx	0.0	66.5	66.6	66.6	5.0	Yes
344	McGaw Avenue	Von Karman Avenue to Jamboree Road	62.2	64.5	64.5	2.3	3.0	No
345	McGaw Avenue	Red Hill Avenue to Von Karman Avenue	62.1	64.3	64.4	2.3	3.0	No
346	McGaw Avenue	Daimler to Red Hill Avenue	61.0	62.4	62.4	1.4	3.0	No
347	McGaw Avenue	Jamboree Road to Murphy Avenue	57.6	59.6	59.5	1.9	5.0	No
348	Meadowood	Culver Drive to Canyonwood	59.5	59.8	59.6	0.1	5.0	No
349	Meridian	Spectrum to Alton Parkway	54.7	55.6	55.7	1.0	5.0	No
350	Meridian	Alton Parkway to Gateway Boulevard	53.5	54.7	54.8	1.3	5.0	No
351	Merit	Irvine Boulevard to Cadence	59.3	58.0	58.0	-1.3	5.0	No
352	Michelson Drive	Riparian to Harvard Avenue	66.7	68.3	68.3	1.6	1.5	Yes
353	Michelson Drive	Almond Tree Lane to Yale Avenue	66.3	67.2	67.2	0.9	1.5	No
354	Michelson Drive	Von Karman Avenue to Obsidian	66.7	68.2	68.1	1.4	1.5	No
355	Michelson Drive	Parkside to Culver Drive	66.2	67.8	67.8	1.6	1.5	Yes
356	Michelson Drive	Gillman to Seton/Sandburg Way	66.3	66.9	66.9	0.6	1.5	No
357	Michelson Drive	Carlson to Prince	65.4	67.3	67.3	1.9	1.5	Yes
358	Michelson Drive	MacArthur Boulevard to Dupont Drive	66.7	67.5	67.5	0.8	1.5	No
359	Michelson Drive	Harvard Avenue to Parkside	66.2	66.8	66.8	0.6	1.5	No
360	Michelson Drive	Bixby to Von Karman Avenue	64.9	66.8	66.9	2.0	3.0	No
361	Michelson Drive	Jamboree Road to Carlson	68.0	69.6	69.6	1.6	1.5	Yes
362	Michelson Drive	Teller to Jamboree Road	68.7	69.6	69.6	0.9	1.5	No
363	Michelson Drive	Jordan East to University Drive	66.6	67.1	67.1	0.5	1.5	No
364	Michelson Drive	Culver Drive to Angell	65.9	66.3	66.3	0.4	1.5	No

Table 14

365	Modjeska (A Street)	Portola Springs to Irvine Boulevard	70.7	71.7	71.7	1.0	1.5	No
366	Modjeska (A Street)	South of Irvine Boulevard	61.4	61.1	61.0	-0.4	3.0	No
367	Muirlands Boulevard	Bake Parkway to City Limits	66.4	67.2	67.3	0.9	1.5	No
368	Muirlands Boulevard	Alton Parkway to Sterling	66.1	66.3	66.2	0.1	1.5	No
369	Muirlands Boulevard	Wrigley to Bake Parkway	66.1	66.3	66.3	0.2	1.5	No
370	Newport Coast Drive	SR-73 NB Off-Ramp to Turtle Ridge	65.9	66.6	66.7	0.8	1.5	No
371	Newport Coast Drive	Turtle Crest to Bonita Canyon Drive	65.0	65.1	65.1	0.1	1.5	No
372	Nightmist	Sand Canyon Avenue to Tulip (Road C)	60.8	61.8	61.7	0.9	3.0	No
373	Northwood	Yale Avenue to Savannah	62.3	62.5	62.5	0.2	3.0	No
374	Northwood	Goldrush to Yale Avenue	60.5	61.5	61.6	1.1	3.0	No
375	Oak Canyon Drive	Valley Oak Drive to Sand Canyon Avenue	66.2	69.7	69.7	3.5	1.5	Yes
376	Pacifica	Gateway to Barranca Parkway	63.3	65.3	65.3	2.0	3.0	No
377	Pacifica	Alton Parkway to Gateway	61.8	64.1	64.2	2.4	3.0	No
378	Pacifica	Irvine Center Drive to Fortune Drive (Spectrum Center Drive)	61.7	62.7	62.7	1.0	3.0	No
379	Pacifica	Meridian to Alton Parkway	58.1	60.9	60.9	2.8	5.0	No
380	Park Place	Christamon South to Yale Avenue	56.8	57.0	57.0	0.2	5.0	No
381	Portola Parkway	Bee Canyon Access Road to Sand Canyon Avenue	70.3	71.7	71.8	1.5	1.5	Yes
382	Portola Parkway	Jeffrey Road to Bee Canyon Access Road	70.3	71.7	71.8	1.5	1.5	Yes
383	Portola Parkway	Arrowhead to Ridge Valley Parkway	69.6	71.4	71.5	1.9	1.5	Yes
384	Portola Parkway	Sand Canyon Avenue to Arrowhead	69.6	71.1	71.1	1.5	1.5	Yes
385	Portola Parkway	Portola Springs to SR-241 SB Off-Ramp	65.5	70.1	70.1	4.6	1.5	Yes
386	Portola Parkway	Gatepark to Culver Drive	69.6	70.7	70.9	1.3	1.5	No
387	Portola Parkway	ETC-6 (SR-261) NB Off-Ramp to Gatepark	69.6	70.7	70.8	1.2	1.5	No
388	Portola Parkway	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	69.6	70.6	70.7	1.1	1.5	No
389	Portola Parkway	Jamboree Road to Bellevue	69.6	70.5	70.6	1.0	1.5	No
390	Portola Parkway	Bellevue to ETC-6 (SR-261) SB Off-Ramp	69.6	70.5	70.6	1.0	1.5	No
391	Portola Parkway	Yale Avenue to Jeffrey Road	68.6	70.2	70.4	1.8	1.5	Yes
392	Portola Parkway	Culver Drive to Yale Avenue	68.6	69.7	69.8	1.2	1.5	No
393	Portola Parkway	Silverado to Portola Springs	66.5	68.6	68.7	2.2	1.5	Yes
394	Pusan	Irvine Boulevard to Cadence	54.0	56.2	56.1	2.1	5.0	No
395	Quail Hill Parkway	Shady Canyon Drive to Passage	67.3	67.5	67.5	0.2	1.5	No
396	Quail Hill Parkway	East Knollcrest to Laguna Canyon Road	64.8	65.4	65.4	0.6	3.0	No
397	Quassar Drive (Spectrum)	Irvine Center Drive to Spectrum Center Drive (Fortune)	54.4	54.9	55.0	0.6	5.0	No
398	Red Hill Avenue	MacArthur Boulevard to McGaw Avenue	70.8	71.6	71.7	0.9	1.5	No
399	Red Hill Avenue	I-405 Over Crossing to Main Street	69.6	70.2	70.3	0.7	1.5	No
400	Red Hill Avenue	Alton Parkway to Deere Avenue	69.5	70.1	70.1	0.6	1.5	No
401	Red Hill Avenue	McGaw Avenue to Alton Parkway	69.3	69.9	70.1	0.8	1.5	No



Table 14

402	Red Hill Avenue	Deere Avenue to Barranca Parkway	69.3	69.8	69.9	0.6	1.5	No
403	Red Hill Avenue	Skypark East to MacArthur Boulevard	70.2	71.4	71.5	1.3	1.5	No
404	Red Hill Avenue	Main Street to Skypark East	69.6	70.8	70.9	1.3	1.5	No
405	Research Drive	Hubble to Bake Parkway	65.4	69.6	69.7	4.3	1.5	Yes
406	Research Drive	Scientific to Lake Forest Drive	65.6	67.4	67.8	2.2	1.5	Yes
407	Research Drive	Bake Parkway to Muller	66.2	66.7	66.8	0.6	1.5	No
408	Research Drive	Irvine Center Drive to Bunsen	64.9	65.7	65.8	0.9	3.0	No
409	Ridge Valley (O Street)	Irvine Boulevard to Trabuco Road (Great Park Boulevard)	65.5	67.3	67.3	1.8	1.5	Yes
410	Ridge Valley (O Street)	Portola Parkway to Irvine Boulevard	65.9	66.4	66.4	0.5	1.5	No
411	Ridge Valley (O Street)	Trabuco Road (Great Park Boulevard) to Marine Way	65.8	66.0	66.0	0.2	1.5	No
412	Ridge Valley (O Street)	Ranchland to Portola Parkway	58.0	58.1	58.1	0.1	5.0	No
413	Ridgeline Drive	Concordia East to University Drive	67.7	68.8	68.8	1.1	1.5	No
414	Ridgeline Drive	Turtle Rock Drive to San Simeon	67.7	68.5	68.5	0.8	1.5	No
415	Rockfield Avenue	Whatney to McLaren	66.3	67.7	67.8	1.5	1.5	Yes
416	Rockfield Avenue	Bake Parkway to Whatney	62.5	64.3	64.4	1.9	3.0	No
417	Rockfield Avenue	Thomas to Bake Parkway	62.5	63.1	63.2	0.7	3.0	No
418	Roosevelt	Jeffrey Road to Vision	65.2	66.6	66.7	1.5	1.5	Yes
419	Roosevelt	Yale Avenue to Van Buren	67.9	68.3	68.3	0.4	1.5	No
420	Roosevelt	Vision to Bay Tree	64.5	66.3	66.5	2.0	3.0	No
421	Roosevelt	Nimitz to Jeffrey Road	65.2	65.9	65.9	0.7	1.5	No
422	Roosevelt	Tulip (Road C) to Sand Canyon Avenue	63.7	65.6	65.7	2.0	3.0	No
423	Royal Oak	Alton Parkway to Eaglecreek	63.8	64.0	64.0	0.2	3.0	No
424	Sand Canyon Avenue	Oak Canyon Drive to Burt Road	70.7	72.2	72.2	1.5	1.5	Yes
425	Sand Canyon Avenue	Irvine Center Drive to Oak Canyon Drive	70.6	72.0	72.0	1.4	1.5	No
426	Sand Canyon Avenue	I-405 NB Off-Ramp to Alton Parkway	73.6	74.7	74.7	1.1	1.5	No
427	Sand Canyon Avenue	Burt Road to I-5 SB Off-Ramp	71.2	72.7	72.8	1.6	1.5	Yes
428	Sand Canyon Avenue	Marine to I-5 NB Off-Ramp	72.7	74.6	74.8	2.1	1.5	Yes
429	Sand Canyon Avenue	Trabuco Road to Towngate	70.0	71.0	71.2	1.2	1.5	No
430	Sand Canyon Avenue	Barranca Parkway to Waterworks	69.2	70.9	71.0	1.8	1.5	Yes
431	Sand Canyon Avenue	I-5 SB Off-Ramp to Marine	72.7	73.9	74.0	1.3	1.5	No
432	Sand Canyon Avenue	Hospital to Barranca Parkway	69.3	70.8	70.9	1.6	1.5	Yes
433	Sand Canyon Avenue	Nightmist to Roosevelt	73.3	73.5	73.6	0.3	1.5	No
434	Sand Canyon Avenue	I-405 SB Off-Ramp to I-405 NB Off-Ramp	72.4	73.6	73.6	1.2	1.5	No
435	Sand Canyon Avenue	I-5 NB Off-Ramp to Nightmist	73.2	73.5	73.6	0.4	1.5	No
436	Sand Canyon Avenue	Towngate to Irvine Boulevard	69.3	70.3	70.6	1.3	1.5	No
437	Sand Canyon Avenue	Waterworks to Irvine Center Drive	69.2	70.2	70.3	1.1	1.5	No
438	Sand Canyon Avenue	Irvine Boulevard to Portola Parkway	68.0	69.2	70.3	2.3	1.5	Yes

Table 14

439	Sand Canyon Avenue	Roosevelt to Trabuco Road	72.6	72.8	72.8	0.2	1.5	No
440	Sand Canyon Avenue	Alton Parkway to Hospital	69.7	70.8	70.9	1.2	1.5	No
441	Sand Canyon/Shady Canyon	Quail Hill Parkway to I-405 SB Ramps	71.3	71.8	71.8	0.5	1.5	No
442	Scientific Way	Irvine Center Drive to Wald	54.6	55.0	55.0	0.4	5.0	No
443	Shady Canyon Drive	Culver Drive/Bonita Canyon Drive to Cloverfield	68.6	69.3	69.4	0.8	1.5	No
444	Shady Canyon Drive	Bommer Canyon Road to Sunnyhill	67.1	67.7	67.8	0.7	1.5	No
445	Skyhawk	Great Park Boulevard to Marine Way	52.8	59.6	59.5	6.7	5.0	Yes
446	Southwood	Yale Avenue to Colt	60.5	60.6	60.6	0.1	3.0	No
447	Southwood	Challenger to Yale Avenue	59.9	60.4	60.4	0.5	5.0	No
448	Spectrum Center Drive (Fortune Drive)	Pacifica to Quassar Drive (Spectrum )	61.4	62.0	61.9	0.5	3.0	No
449	Spectrum Center Drive (Fortune Drive)	Quassar Drive (Spectrum ) to Gatewayb	62.0	62.5	62.5	0.5	3.0	No
450	Sunnyhill	Shady Canyon Drive to Turtle Rock Drive	56.9	57.7	57.8	0.9	5.0	No
451	Technology Drive	Barranca Parkway to Alton Parkway	67.0	70.8	70.8	3.8	1.5	Yes
452	Technology Drive	Old Laguna Canyon Road to I-5/SR-133 Undercrossing	63.2	69.6	69.6	6.4	3.0	Yes
453	Technology Drive	I-5/SR-133 to Barranca Parkway	62.8	69.4	69.4	6.6	3.0	Yes
454	Technology Drive	Ada to Alton Parkway	57.8	63.7	63.7	5.9	5.0	Yes
455	Toledo Way	Bake Parkway to City Limits	65.5	65.6	65.6	0.1	1.5	No
456	Toledo Way	Goodyear to Bake Parkway	64.5	64.7	64.7	0.2	3.0	No
457	Toledo Way	Alton Parkway to Parker	63.9	64.5	64.5	0.6	3.0	No
458	Trabuco Road	Keystone to Sand Canyon Avenue	66.7	67.2	67.3	0.6	1.5	No
459	Trabuco Road	Jeffrey Road to Keystone	66.7	67.1	67.1	0.4	1.5	No
460	Trabuco Road	Culver Drive to I-5 NB Off-Ramp	66.3	66.8	66.9	0.6	1.5	No
461	Trabuco Road	Monroe to Yale Avenue	66.3	66.8	66.9	0.6	1.5	No
462	Trabuco Road	I-5 NB Off-Ramp to Monroe	66.3	66.7	66.8	0.5	1.5	No
463	Trabuco Road	Yale Avenue to Remington	65.7	66.4	66.5	0.8	1.5	No
464	Trabuco Road	Remington to Jeffrey Road	65.7	66.1	66.2	0.5	1.5	No
465	Turtle Ridge Drive	Federation Way to Bonita Canyon	0.0	68.7	68.7	68.7	5.0	Yes
466	Turtle Rock Drive	Ridgeline to Willowleaf	66.9	67.9	67.9	1.0	1.5	No
467	Turtle Rock Drive	Silkwood to Sunnyhill	67.0	67.8	67.8	0.8	1.5	No
468	Turtle Rock Drive	Canyon Park to Ridgeline	66.7	67.1	67.1	0.4	1.5	No
469	Turtle Rock Drive	Sunnyhill to Southernwood	63.9	64.0	64.0	0.1	3.0	No
470	Turtle Rock Drive	Campus Drive to Hillgate	63.8	64.1	64.2	0.4	3.0	No
471	Turtle Rock Drive	Paseo Segovia to Campus Drive	65.3	65.5	65.4	0.1	1.5	No
472	University Drive	Golden Glow to Yale Avenue	72.2	73.0	73.1	0.9	1.5	No
473	University Drive	Ridgeline to Michelson Drive	72.1	72.6	72.6	0.5	1.5	No
474	University Drive	Culver Drive to Golden Glow	72.1	72.9	72.9	0.8	1.5	No
475	University Drive	Yale Avenue to Ridgeline	72.0	72.4	72.4	0.4	1.5	No

Table 14

476	University Drive	Michelson Drive to I-405 SB Off-Ramp	72.3	72.7	72.8	0.5	1.5	No
477	University Drive	Mesa to Campus Drive	73.3	74.5	74.6	1.3	1.5	No
478	University Drive	MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	73.3	74.4	74.7	1.4	1.5	No
479	University Drive	California Avenue to Mesa	73.3	74.4	74.5	1.2	1.5	No
480	University Drive	Campus Drive to Harvard Avenue	69.5	70.7	70.8	1.3	1.5	No
481	University Drive	SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	70.4	71.6	71.8	1.4	1.5	No
482	University Drive	SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps	69.2	70.2	70.4	1.2	1.5	No
483	University Drive	San Joaquin to Culver Drive	68.7	69.8	69.9	1.2	1.5	No
484	University Drive	Harvard Avenue to San Joaquin	68.7	69.8	69.9	1.2	1.5	No
485	Valley Oak Drive	Hawkcreek to Barranca Parkway	63.0	68.1	68.1	5.1	3.0	Yes
486	Valley Oak Drive	Irvine Center Drive to Oak Canyon Drive	65.2	69.6	69.5	4.3	1.5	Yes
487	Valley Oak Drive	Barranca Parkway to Irvine Center Drive	62.9	67.1	67.2	4.3	3.0	Yes
488	Valley Oak Drive	Alton Parkway to Hawkcreek	63.8	64.9	64.9	1.1	3.0	No
489	Von Karman Avenue	Marriott to Morse Avenue	68.9	71.0	71.0	2.1	1.5	Yes
490	Von Karman Avenue	Michelson Drive to Quartz	68.8	70.9	70.9	2.1	1.5	Yes
491	Von Karman Avenue	McGaw Avenue to Alton Parkway	69.3	70.8	70.8	1.5	1.5	Yes
492	Von Karman Avenue	Alton Parkway to Barranca Parkway	68.4	70.4	70.4	2.0	1.5	Yes
493	Von Karman Avenue	Main Street to Anchor	69.2	70.7	70.7	1.5	1.5	Yes
494	Von Karman Avenue	Anchor to McGaw Avenue	69.2	70.5	70.6	1.4	1.5	No
495	Von Karman Avenue	Morse to Main Street	69.2	70.3	70.3	1.1	1.5	No
496	Von Karman Avenue	Martin to Dupont Drive	67.8	69.6	69.7	1.9	1.5	Yes
497	Von Karman Avenue	Campus Drive to Martin	67.8	69.5	69.6	1.8	1.5	Yes
498	Von Karman Avenue	Dupont Drive to Michelson Drive	67.8	69.5	69.6	1.8	1.5	Yes
499	Walnut Avenue	Jeffrey Road to I-5 SB Off-Ramp	68.9	70.9	71.0	2.1	1.5	Yes
500	Walnut Avenue	Myford Road to Jamboree Road SB Off-Ramp	68.6	69.1	69.2	0.6	1.5	No
501	Walnut Avenue	The Mall Street to Culver Drive	68.2	68.8	68.9	0.7	1.5	No
502	Walnut Avenue	Harvard Avenue to The Mall Street	68.2	68.8	68.8	0.6	1.5	No
503	Walnut Avenue	Franciscan Street to Ravenwood Street	68.0	68.5	68.6	0.6	1.5	No
504	Walnut Avenue	Ravenwood Street to Yale Avenue	68.0	68.5	68.5	0.5	1.5	No
505	Walnut Avenue	Culver Drive to Franciscan Street	68.0	68.4	68.4	0.4	1.5	No
506	Walnut Avenue	Peters Canyon Road to Harvard Avenue	67.0	68.0	68.1	1.1	1.5	No
507	Walnut Avenue	Jamboree Road NB Off-Ramp to Peters Canyon Road	67.0	67.9	67.9	0.9	1.5	No
508	Walnut Avenue	Yale Avenue to Kazan Street	66.3	67.3	67.3	1.0	1.5	No
509	Walnut Avenue	Wisteria to Jeffrey Road	66.3	67.2	67.2	0.9	1.5	No
510	Warner Avenue	Jamboree Road SB Off-ramp to Construction North	69.6	70.2	70.1	0.5	1.5	No
511	Warner Avenue	Construction North to Harvard Avenue	67.8	68.6	68.6	0.8	1.5	No
512	Warner Avenue	Harvard Avenue to Paseo Westpark	66.1	67.1	67.1	1.0	1.5	No

Table 14

513	Warner Avenue	Santa Ynez to Culver Drive	65.1	66.2	66.2	1.1	1.5	No
514	Warner Avenue	Culver Drive to West Yale Loop	64.9	65.8	65.9	1.0	3.0	No
515	West Yale Loop	Alton Parkway to Blue Lake North	63.3	64.0	64.0	0.7	3.0	No
516	West Yale Loop	Eagle Run to Main Street	63.3	63.9	63.8	0.5	3.0	No
517	West Yale Loop	Thunder Run to Yale Avenue	62.7	64.0	64.0	1.3	3.0	No
518	West Yale Loop	Main Street to Timber Run	62.7	62.8	62.9	0.2	3.0	No
519	West Yale Loop	Yale Avenue to Shorebird	61.8	63.2	63.3	1.5	3.0	No
520	West Yale Loop	Warner Avenue to Stonecreek South	61.8	62.7	62.7	0.9	3.0	No
521	West Yale Loop	Barranca Parkway to Alton Parkway	61.7	62.4	62.4	0.7	3.0	No
522	West Yale Loop	Stonecreek North to Warner Avenue	61.8	62.6	62.6	0.8	3.0	No
523	West Yale Loop	Birdsong to Barranca Parkway	61.8	62.4	62.5	0.7	3.0	No
524	Westwood	Yorktown to Bryan Avenue	63.2	63.5	63.5	0.3	3.0	No
525	Westwood	Bryan Avenue to Leaf	61.3	61.6	61.6	0.3	3.0	No
526	Yale Avenue	Deerfield Avenue to Winvale Avenue	68.5	68.6	68.6	0.1	1.5	No
527	Yale Avenue	Hicks Canyon Drive to Meadowood	67.2	67.3	67.3	0.1	1.5	No
528	Yale Avenue	Walnut Avenue to Roosevelt	70.7	71.1	71.2	0.5	1.5	No
529	Yale Avenue	Roosevelt to Trabuco Road	66.9	67.1	67.1	0.2	1.5	No
530	Yale Avenue	Irvine Center Drive to Deerfield Avenue	66.5	66.9	66.8	0.3	1.5	No
531	Yale Avenue	West Yale Loop to Irvine Center Drive	65.0	66.5	66.6	1.6	1.5	Yes
532	Yale Avenue	Winvale Avenue to Karen Ann Lane	65.6	65.7	65.8	0.2	1.5	No
533	Yale Avenue	Karen Ann Lane to Walnut Avenue	65.6	65.7	65.8	0.2	1.5	No
534	Yale Avenue	Trabuco Road to Southwood	65.1	65.6	65.7	0.6	1.5	No
535	Yale Avenue	Southwood to Bryan Avenue	65.1	65.4	65.4	0.3	1.5	No
536	Yale Avenue	Northwood to Irvine Boulevard	64.8	65.1	65.2	0.4	3.0	No
537	Yale Avenue	Bryan Avenue to Monticello	64.8	65.0	65.0	0.2	3.0	No
538	Yale Avenue	Irvine Boulevard to Park Place	64.1	64.2	64.2	0.1	3.0	No
539	Yale Avenue	University Drive to Royce	57.9	63.6	63.5	5.6	5.0	Yes
540	Yale Court	Arborwood to Portola Parkway	60.0	60.4	60.4	0.4	1.5	No
<sup>1</sup> Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses. <sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use. <sup>3</sup> Does the Project create an incremental noise level increase exceeding the significance criteria?								

Table 15

Table 15: Existing and Cumulative Preferred Plan Traffic Noise Level Increases

ID	Road	Segment	CNEL at Receiving Land Use (dBA) <sup>2</sup>				Incremental Noise Level Increase Threshold <sup>3</sup>	
			Existing	Preferred	Cumulative Preferred	Cumulative Increase	Limit	Exceeded?
1	Ada	Barranca Parkway to Marine Way	0.0	70.8	70.8	70.8	5.0	Yes
2	Ada	Alton Parkway to Barranca Parkway	60.3	69.2	69.2	8.9	3.0	Yes
3	Alton Parkway	Enterprise to I-5 NB Off-Ramp	71.3	73.9	73.9	2.6	1.5	Yes
4	Alton Parkway	I-5 NB Off-Ramp to Technology Drive West	72.1	74.5	74.5	2.4	1.5	Yes
5	Alton Parkway	East Yale Loop to Jeffrey Road	71.3	71.8	71.8	0.5	1.5	No
6	Alton Parkway	Gateway Boulevard to Enterprise	69.3	71.7	71.7	2.4	1.5	Yes
7	Alton Parkway	Jeffrey Road to Royal Oak	70.1	70.7	70.8	0.7	1.5	No
8	Alton Parkway	Daimler Street to Red Hill Avenue	63.7	70.6	70.6	6.9	3.0	Yes
9	Alton Parkway	Culver Drive to West Yale Loop	70.4	70.6	70.6	0.2	1.5	No
10	Alton Parkway	West Yale Loop to Lake Road	70.3	70.6	70.6	0.3	1.5	No
11	Alton Parkway	Technology Drive West to Ada	70.2	72.4	72.4	2.2	1.5	Yes
12	Alton Parkway	Creek Road to East Yale Loop	70.1	70.5	70.6	0.5	1.5	No
13	Alton Parkway	Red Hill Avenue to Von Karman Avenue	68.1	70.4	70.5	2.4	1.5	Yes
14	Alton Parkway	Lake Road to Creek Road	70.1	70.3	70.3	0.2	1.5	No
15	Alton Parkway	Telemetry to Banting	69.0	70.3	70.4	1.4	1.5	No
16	Alton Parkway	Irvine Boulevard to Commercentre	70.3	70.8	70.9	0.6	1.5	No
17	Alton Parkway	Jenner to Telemetry	69.0	70.3	70.3	1.3	1.5	No
18	Alton Parkway	Irvine Center Drive to Gateway Boulevard	68.6	71.0	71.0	2.4	1.5	Yes
19	Alton Parkway	Sand Canyon Avenue to Hospital	72.1	73.7	73.7	1.6	1.5	Yes
20	Alton Parkway	Laguna Canyon Road to Jenner	69.0	70.2	70.2	1.2	1.5	No
21	Alton Parkway	Technology Drive East to Barranca Pkwy/Muirlands Blvd	69.1	70.8	70.8	1.7	1.5	Yes
22	Alton Parkway	Royal Oak to Valley Oak Drive	69.4	70.0	70.0	0.6	1.5	No
23	Alton Parkway	Banting to Pacifica	68.4	69.9	69.9	1.5	1.5	Yes
24	Alton Parkway	Barranca Pkwy/Muirlands Blvd to Jeronimo Road	70.1	70.3	70.3	0.2	1.5	No
25	Alton Parkway	Ada to Technology Drive East	69.2	70.3	70.3	1.1	1.5	No
26	Alton Parkway	Von Karman Avenue to Jamboree Road	68.7	69.6	69.7	1.0	1.5	No
27	Alton Parkway	Jeronimo Road to Hughes	69.8	70.0	70.0	0.2	1.5	No
28	Alton Parkway	Hughes to Morgan	69.5	69.8	69.8	0.3	1.5	No
29	Alton Parkway	Morgan to Toledo Way	68.8	69.0	69.0	0.2	1.5	No
30	Alton Parkway	San Marino to Culver Drive	68.8	69.1	69.1	0.3	1.5	No
31	Alton Parkway	Jamboree Road to Murphy Avenue	68.0	68.9	69.1	1.1	1.5	No

Table 15

32	Alton Parkway	Hospital to Laguna Canyon Road	70.7	71.9	72.0	1.3	1.5	No
33	Alton Parkway	Valley Oak Drive to Sand Canyon Avenue	71.1	71.8	71.8	0.7	1.5	No
34	Alton Parkway	Murphy Avenue to Harvard Avenue	68.1	68.7	68.9	0.8	1.5	No
35	Alton Parkway	Foster to Irvine Boulevard	68.0	68.7	68.7	0.7	1.5	No
36	Alton Parkway	Fairbanks to Foster	67.5	68.4	68.5	1.0	1.5	No
37	Alton Parkway	Toledo Way to Berteia	68.2	68.4	68.4	0.2	1.5	No
38	Alton Parkway	Pacifica to Meridian	69.7	71.5	71.6	1.9	1.5	Yes
39	Alton Parkway	Berteia to Fairbanks	68.1	68.3	68.3	0.2	1.5	No
40	Alton Parkway	Meridian to Irvine Center Drive	66.6	68.2	68.2	1.6	1.5	Yes
41	Alton Parkway	Paseo Westpark to San Marino	67.9	68.1	68.2	0.3	1.5	No
42	Alton Parkway	Harvard Avenue to Paseo Westpark	66.9	67.5	67.7	0.8	1.5	No
43	Astor	Lynx to Fairbanks	57.5	67.0	67.0	9.5	5.0	Yes
44	Astor	Cadence to Lynx	0.0	65.8	65.8	65.8	5.0	Yes
45	Bake Parkway	I-5 NB Off-Ramp to Rockfield Boulevard	75.4	76.6	76.6	1.2	1.5	No
46	Bake Parkway	Muirlands Boulevard to Jeronimo Road	72.7	72.9	72.9	0.2	1.5	No
47	Bake Parkway	Rockfield Boulevard to Muirlands Boulevard	74.7	75.0	75.0	0.3	1.5	No
48	Bake Parkway	Jeronimo Road to Toledo Way	71.9	72.0	72.0	0.1	1.5	No
49	Bake Parkway	Toledo Way to Cromwell	71.5	71.6	71.7	0.2	1.5	No
50	Bake Parkway	Cromwell to Irvine Boulevard	71.4	71.6	71.6	0.2	1.5	No
51	Bake Parkway	Research Drive to I-5 SB Off-Ramp	68.5	69.5	69.6	1.1	1.5	No
52	Bake Parkway	Irvine Center Drive to Research Drive	64.1	64.8	65.0	0.9	3.0	No
53	Bake Parkway	Lake Forest Drive to Irvine Center Drive	61.9	63.4	63.7	1.8	3.0	No
54	Banting	Alton Parkway to Barranca Parkway	57.6	60.2	60.1	2.5	5.0	No
55	Barranca Parkway	Pacifica to Irvine Center Drive	70.5	73.1	73.1	2.6	1.5	Yes
56	Barranca Parkway	Banting to Pacifica	70.7	72.7	72.7	2.0	1.5	Yes
57	Barranca Parkway	I-5 HOV Ramp to Technology Drive West	69.8	72.6	72.7	2.9	1.5	Yes
58	Barranca Parkway	Technology Drive West to Ada	70.4	72.6	72.6	2.2	1.5	Yes
59	Barranca Parkway	Irvine Center Drive to I-5 HOV Ramp	69.3	72.3	72.4	3.1	1.5	Yes
60	Barranca Parkway	Culver Drive to West Yale Loop	71.9	72.2	72.2	0.3	1.5	No
61	Barranca Parkway	East Yale Loop to Jeffrey Road	71.7	72.1	72.1	0.4	1.5	No
62	Barranca Parkway	West Yale Loop to Lake Road	71.6	72.0	72.0	0.4	1.5	No
63	Barranca Parkway	Ada to Alton Parkway	70.2	72.0	72.0	1.8	1.5	Yes
64	Barranca Parkway	Lake Road to Creek Road	71.2	71.7	71.7	0.5	1.5	No
65	Barranca Parkway	Red Hill Avenue to Armstrong Avenue	73.3	74.7	74.7	1.4	1.5	No
66	Barranca Parkway	Discovery/Herchel to Banting	69.7	71.6	71.6	1.9	1.5	Yes
67	Barranca Parkway	Lyon to East Yale Loop	71.0	71.5	71.5	0.5	1.5	No
68	Barranca Parkway	Creek Road to Lyon	70.9	71.4	71.4	0.5	1.5	No

Table 15

69	Barranca Parkway	Von Karman Avenue to Jamboree Road	71.5	72.7	72.7	1.2	1.5	No
70	Barranca Parkway	Sand Canyon Avenue to Laguna Canyon Road	68.5	70.8	70.8	2.3	1.5	Yes
71	Barranca Parkway	Armstrong Avenue to Von Karman Avenue	72.0	72.3	72.4	0.4	1.5	No
72	Barranca Parkway	Valley Oak Drive to Sand Canyon Avenue	69.1	70.6	70.7	1.6	1.5	Yes
73	Barranca Parkway	Jamboree Road to Construction Circle	70.1	71.0	71.1	1.0	1.5	No
74	Barranca Parkway	Santa Rosa to Culver Drive	69.8	70.9	71.0	1.2	1.5	No
75	Barranca Parkway	FedEx to Discovery/Herchel	68.8	70.2	70.3	1.5	1.5	Yes
76	Barranca Parkway	Jeffrey Road to Valley Oak Drive	68.3	70.2	70.3	2.0	1.5	Yes
77	Barranca Parkway	Laguna Canyon Road to FedEx	68.8	70.1	70.1	1.3	1.5	No
78	Barranca Parkway	Pullman Street to Red Hill Avenue	72.7	73.6	73.6	0.9	1.5	No
79	Barranca Parkway	Construction Circle to Fire Station	69.4	70.5	70.5	1.1	1.5	No
80	Barranca Parkway	Fire Station to Harvard Avenue	69.4	70.5	70.5	1.1	1.5	No
81	Barranca Parkway	Paseo Westpark to Santa Rosa	69.3	70.4	70.5	1.2	1.5	No
82	Barranca Parkway	Harvard Avenue to Paseo Westpark	69.2	70.1	70.2	1.0	1.5	No
83	Bay Tree	Trabuco Road to Roosevelt	56.1	57.2	57.2	1.1	5.0	No
84	Beacon	Ridge Valley to Benchmark	0.0	59.6	59.7	59.7	5.0	Yes
85	Benchmark (LN Street)	Ridge Valley (O Street) to Bosque	0.0	56.5	56.5	56.5	5.0	Yes
86	Bison Avenue	SR-73 NB Off-Ramp to California Avenue	68.6	69.6	69.7	1.1	1.5	No
87	Bonita Canyon Drive	MacArthur Boulevard to SR-73	70.0	70.3	70.3	0.3	1.5	No
88	Bonita Canyon Drive	Turtle Ridge to Shady Canyon Drive	67.5	68.6	68.6	1.1	1.5	No
89	Bonita Canyon Drive	Newport Coast Drive to Turtle Ridge	67.5	68.2	68.2	0.7	1.5	No
90	Bonita Canyon Drive	SR-73 NB Off-Ramp to Newport Coast Drive	67.5	68.0	68.0	0.5	1.5	No
91	Bosque	Cadence to Great Park Boulevard	63.0	65.2	65.2	2.2	3.0	No
92	Bosque	Irvine Boulevard to Benchmark (LN Street)	59.7	63.5	63.5	3.8	5.0	No
93	Bosque	Benchmark to Cadence	59.7	63.1	63.1	3.4	5.0	No
94	Bosque	Great Park Boulevard to Beacon	0.0	56.7	56.7	56.7	5.0	Yes
95	Bosque	Beacon to S 5th Street	0.0	56.1	56.1	56.1	5.0	Yes
96	Bryan Avenue	Jamboree Road to Market Place	68.7	68.9	69.0	0.3	1.5	No
97	Bryan Avenue	Market Place to El Camino Real	68.7	68.9	68.9	0.2	1.5	No
98	Bryan Avenue	Rubicon to Culver Drive	68.7	68.9	68.9	0.2	1.5	No
99	Bryan Avenue	El Camino Real to Rubicon	68.7	68.8	68.9	0.2	1.5	No
100	Bryan Avenue	Eastwood to Jeffrey Road	65.8	66.9	67.0	1.2	1.5	No
101	Bryan Avenue	Westwood to Yale Avenue	66.3	66.6	66.7	0.4	1.5	No
102	Bryan Avenue	Culver Drive to Westwood	66.3	66.6	66.6	0.3	1.5	No
103	Bryan Avenue	Yale Avenue to Eastwood	65.8	66.4	66.5	0.7	1.5	No
104	Cadence	Pusan to Chinon	64.5	65.6	65.6	1.1	3.0	No
105	Cadence	Bosque to Pusan	65.7	65.3	65.3	-0.4	1.5	No

Table 15

106	Cadence	Ridge Valley (O Street) to Bosque	62.6	63.9	63.9	1.3	3.0	No
107	Cadence	Chinon to Merit	62.6	62.2	62.2	-0.4	3.0	No
108	Cadence	Merit to Astor	0.0	59.4	59.4	59.4	5.0	Yes
109	California Avenue	University Drive to Academy Way	64.3	66.2	67.2	2.9	3.0	No
110	California Avenue	Campus Drive to Harvard Avenue	63.2	64.2	64.2	1.0	3.0	No
111	California Avenue	Theory to Bison Avenue	63.1	63.9	64.0	0.9	3.0	No
112	Campus Drive	Carlson Avenue to University Drive	70.9	73.2	73.3	2.4	1.5	Yes
113	Campus Drive	University Drive to Bridge Road	70.1	71.8	71.7	1.6	1.5	Yes
114	Campus Drive	Jamboree Road to Carlson Avenue	69.0	71.5	71.5	2.5	1.5	Yes
115	Campus Drive	Stanford Court to Berkeley Avenue	70.1	71.1	71.0	0.9	1.5	No
116	Campus Drive	California Avenue to Culver Drive	68.9	70.9	70.9	2.0	1.5	Yes
117	Campus Drive	Berkeley Avenue to Cornell	68.9	70.0	69.9	1.0	1.5	No
118	Campus Drive	Martin to Von Karman Avenue	67.5	69.0	69.1	1.6	1.5	Yes
119	Campus Drive	Culver Drive to Paseo Montoya (Turtle Rock Drive)	68.5	68.7	68.7	0.2	1.5	No
120	Campus Drive	Von Karman Avenue to Teller Avenue	66.8	68.3	68.5	1.7	1.5	Yes
121	Campus Drive	MacArthur Boulevard to Martin	67.5	68.2	68.3	0.8	1.5	No
122	Campus Drive	Teller Avenue to Jamboree Road	66.8	67.5	67.5	0.7	1.5	No
123	Carlson Avenue	Michelson Drive to Campus Drive	64.5	67.9	67.9	3.4	3.0	Yes
124	Chinon	Irvine Boulevard to Cadence	56.6	59.0	59.0	2.4	5.0	No
125	Creek Road	Alton Parkway to Barranca Parkway	55.3	56.1	56.2	0.9	5.0	No
126	Culver Drive	Michelson Drive to I-405 SB Off-Ramp	73.4	73.9	73.9	0.5	1.5	No
127	Culver Drive	I-405 SB Off-Ramp to I-405 NB Off Ramp	73.4	73.8	73.8	0.4	1.5	No
128	Culver Drive	I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)	73.7	73.9	73.9	0.2	1.5	No
129	Culver Drive	Scottsdale Drive to I-5 SB Off- Ramp	73.7	73.9	73.9	0.2	1.5	No
130	Culver Drive	I-405 NB Off-Ramp to San Leandro	73.4	73.6	73.6	0.2	1.5	No
131	Culver Drive	San Leandro to Main Street	73.2	73.3	73.3	0.1	1.5	No
132	Culver Drive	Harvard Avenue to University Drive	72.7	73.3	73.3	0.6	1.5	No
133	Culver Drive	Trabuco Road to Farwell Avenue	74.1	74.3	74.2	0.1	1.5	No
134	Culver Drive	Alton Parkway to Barranca Parkway	72.9	73.2	73.2	0.3	1.5	No
135	Culver Drive	Main Street to Alton Parkway	72.7	73.1	73.1	0.4	1.5	No
136	Culver Drive	Warner Avenue to Irvine Center Drive	72.7	73.0	73.0	0.3	1.5	No
137	Culver Drive	Walnut Avenue to Scottsdale Dive	72.6	72.9	72.9	0.3	1.5	No
138	Culver Drive	Barranca Parkway to Warner Avenue	72.6	72.8	72.9	0.3	1.5	No
139	Culver Drive	Shady Canyon Drive to Palo Verde	71.4	72.0	72.0	0.6	1.5	No
140	Culver Drive	Deerfield Avenue to Walnut Avenue	72.3	72.5	72.5	0.2	1.5	No
141	Culver Drive	Sandburg Way to Michelson Drive	71.9	72.5	72.5	0.6	1.5	No
142	Culver Drive	Irvine Center Drive to Deerfield Avenue	72.1	72.4	72.4	0.3	1.5	No



Table 15

143	Culver Drive	Palo Verde to Campus Drive	71.4	71.6	71.6	0.2	1.5	No
144	Culver Drive	University Drive to Sandburg Way	71.5	72.2	72.2	0.7	1.5	No
145	Culver Drive	Farwell Avenue to Bryan Avenue	72.8	73.2	73.2	0.4	1.5	No
146	Culver Drive	Campus Drive to High School	71.6	72.1	72.1	0.5	1.5	No
147	Culver Drive	High School to Harvard Avenue	71.6	72.0	72.0	0.4	1.5	No
148	Culver Drive	Bryan Avenue to Florence	71.5	71.8	71.8	0.3	1.5	No
149	Culver Drive	Portola Parkway to Settlers	68.9	71.1	71.2	2.3	1.5	Yes
150	Culver Drive	Florence to Irvine Boulevard	71.3	71.7	71.7	0.4	1.5	No
151	Culver Drive	Irvine Boulevard to Viewpark	70.0	70.5	70.5	0.5	1.5	No
152	Culver Drive	Viewpark to Meadowood	70.0	70.4	70.4	0.4	1.5	No
153	Culver Drive	Settlers to Furrow	0.0	68.4	68.5	68.5	5.0	Yes
154	Culver Drive	Meadowood to Portola Parkway	68.3	69.0	69.0	0.7	1.5	No
155	Discovery Drive	Irvine Center Drive to Laguna Canyon Road	56.6	64.0	64.0	7.4	5.0	Yes
156	Discovery Drive	Waterworks Way to Irvine Center Drive	0.0	61.2	61.2	61.2	5.0	Yes
157	East Yale Loop	Alton Parkway to Witherspoon	64.6	65.5	65.5	0.9	3.0	No
158	East Yale Loop	Osborn Street to Barranca Parkway	64.3	65.3	65.3	1.0	3.0	No
159	East Yale Loop	Yale Avenue to Springbrook South	62.3	64.8	64.9	2.6	3.0	No
160	East Yale Loop	Springbrook North to Alton Parkway	62.3	63.5	63.6	1.3	3.0	No
161	East Yale Loop	Woodspring to Yale Avenue	62.3	62.7	62.7	0.4	3.0	No
162	East Yale Loop	Barranca Parkway to Eastshore	62.3	62.4	62.4	0.1	3.0	No
163	Eastwood	Bryan Avenue to Monticello	59.5	60.8	60.8	1.3	5.0	No
164	Eastwood	Columbus to Bryan Avenue	58.5	58.7	58.8	0.3	5.0	No
165	El Camino Real	Jamboree Road to Alliance (SR-261 Bridge)	66.9	67.1	67.1	0.2	1.5	No
166	El Camino Real North	El Camino Real to Bryan Avenue	62.2	62.4	62.4	0.2	3.0	No
167	Fairbanks	Alton Parkway to Astor	61.3	69.7	69.8	8.5	3.0	Yes
168	Fairbanks	Irvine Boulevard to Alton Parkway	0.0	66.9	66.9	66.9	5.0	Yes
169	Fairchild Road	MacArthur Boulevard to Jamboree Road	63.3	64.1	64.0	0.7	3.0	No
170	Gateway Boulevard	Alton Parkway to Irvine Center Drive	57.0	63.3	63.3	6.3	5.0	Yes
171	Gateway Boulevard	Spectrum Center Drive (Fortune Drive) to Alton Parkway	59.4	62.1	62.1	2.7	5.0	No
172	Gateway Boulevard	Irvine Center Drive to Meridian	56.8	59.1	59.2	2.4	5.0	No
173	Great Park Boulevard	Sand Canyon to Ridge Valley	70.5	74.4	74.5	4.0	1.5	Yes
174	Great Park Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	64.0	70.2	70.2	6.2	3.0	Yes
175	Great Park Boulevard (EB)	Bosque to Skyhawk	0.0	68.8	68.9	68.9	5.0	Yes
176	Great Park Boulevard (WB)	Bosque to Skyhawk	0.0	68.3	68.3	68.3	5.0	Yes
177	Harvard Avenue	University Drive to Michelson Drive	71.2	72.0	72.0	0.8	1.5	No
178	Harvard Avenue	Michelson Drive to Coronado	69.5	70.4	70.5	1.0	1.5	No
179	Harvard Avenue	San Marino to Alton Parkway	69.4	70.1	70.2	0.8	1.5	No

Table 15

180	Harvard Avenue	Coronado to Main Street	69.3	70.1	70.2	0.9	1.5	No
181	Harvard Avenue	San Carlo to San Marino	69.4	70.0	70.1	0.7	1.5	No
182	Harvard Avenue	Main Street to San Carlo	69.3	70.0	70.0	0.7	1.5	No
183	Harvard Avenue	Alton Parkway to San Leon	68.5	68.8	68.6	0.1	1.5	No
184	Harvard Avenue	San Juan to Barranca Parkway	68.5	68.8	68.7	0.2	1.5	No
185	Harvard Avenue	San Leon to San Juan	68.4	68.6	68.6	0.2	1.5	No
186	Harvard Avenue	Irvine Center Drive to Deerfield Avenue	65.5	67.4	67.4	1.9	1.5	Yes
187	Harvard Avenue	Deerfield Avenue to Poplar Street	65.5	67.3	67.4	1.9	1.5	Yes
188	Harvard Avenue	Barranca Parkway to Warner Avenue	67.6	67.8	67.9	0.3	1.5	No
189	Harvard Avenue	Bridge Road to University Drive	67.2	67.8	67.8	0.6	1.5	No
190	Harvard Avenue	Paseo Westpark to Irvine Center Drive	66.1	67.8	67.8	1.7	1.5	Yes
191	Harvard Avenue	Poplar Street to Walnut Avenue	66.8	68.7	68.8	2.0	1.5	Yes
192	Harvard Avenue	California Avenue to Berkeley Avenue	66.1	67.2	67.2	1.1	1.5	No
193	Harvard Avenue	Culver Drive to California Avenue	66.1	67.2	67.2	1.1	1.5	No
194	Harvard Avenue	Berkeley to Bridge Road	66.1	67.1	67.1	1.0	1.5	No
195	Harvard Avenue	Warner Avenue to Paseo Westpark	65.9	66.8	66.8	0.9	1.5	No
196	Hicks Canyon Drive	Delamesa to Yale Avenue	58.2	58.2	58.2	0.0	5.0	No
197	Hornet (5th St)	Ridge Valley (O Street) to Bosque	0.0	57.5	57.6	57.6	5.0	Yes
198	Hubble	Irvine Center Drive to Bunsen	55.5	55.9	56.1	0.6	5.0	No
199	Irvine Boulevard	SR-133 NB Off- Ramp to Ridge Valley (O Street)	72.1	72.3	72.3	0.2	1.5	No
200	Irvine Boulevard	SR-133 SB Off-Ramp to SR-133 NB Off-Ramp	72.0	72.2	72.1	0.1	1.5	No
201	Irvine Boulevard	Sand Canyon to SR-133 SB Off-Ramp	72.9	73.1	73.1	0.2	1.5	No
202	Irvine Boulevard	Merit to Alton	71.4	71.6	71.6	0.2	1.5	No
203	Irvine Boulevard	Journey to Sand Canyon Avenue	71.4	71.6	71.7	0.3	1.5	No
204	Irvine Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	70.9	71.2	71.1	0.2	1.5	No
205	Irvine Boulevard	Pusan Way to Chinon (B Street)	70.8	71.0	71.0	0.2	1.5	No
206	Irvine Boulevard	Palo Lado to Yale Avenue	70.4	71.1	71.2	0.8	1.5	No
207	Irvine Boulevard	Culver Drive to Palo Lado	70.5	71.0	71.1	0.6	1.5	No
208	Irvine Boulevard	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.5	70.9	71.0	0.5	1.5	No
209	Irvine Boulevard	Old Myford Road to Market Place	70.3	71.0	71.0	0.7	1.5	No
210	Irvine Boulevard	Bosque (LY Street) to Modjeska	70.5	70.9	71.0	0.5	1.5	No
211	Irvine Boulevard	Jamboree Road to Old Myford Road	70.3	70.9	70.9	0.6	1.5	No
212	Irvine Boulevard	Market Place to SR-261 SB Off-Ramp	70.3	70.9	70.9	0.6	1.5	No
213	Irvine Boulevard	Jeffrey Road to Groveland	70.6	70.8	71.0	0.4	1.5	No
214	Irvine Boulevard	Bake Parkway to Lake Forest Drive	69.8	70.6	70.7	0.9	1.5	No
215	Irvine Boulevard	Independence Way (The Groves)/ The Groves to Jeffrey Road	70.2	70.6	70.6	0.4	1.5	No
216	Irvine Boulevard	Chinon (B Street) to Merit	70.2	70.5	70.5	0.3	1.5	No

Table 15

217	Irvine Boulevard	SR-261 NB Off-Ramp to Central Park	70.1	70.5	70.5	0.4	1.5	No
218	Irvine Boulevard	Pueblo Norte to Independence Way (The Groves)/ Parkwood	69.9	70.3	70.4	0.5	1.5	No
219	Irvine Boulevard	Yale Avenue to Pueblo Norte	69.9	70.3	70.4	0.5	1.5	No
220	Irvine Boulevard	Modjeska to Pusan Way	70.0	70.2	70.2	0.2	1.5	No
221	Irvine Boulevard	Central Park Avenue to Culver Drive	69.5	69.9	69.9	0.4	1.5	No
222	Irvine Boulevard	Parker to Bake Parkway	69.0	69.5	69.7	0.7	1.5	No
223	Irvine Boulevard	Alton Parkway to Fairbanks	68.4	68.6	68.6	0.2	1.5	No
224	Irvine Center Drive	Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp	71.3	72.6	72.7	1.4	1.5	No
225	Irvine Center Drive	Orange Tree to Valley Oak Drive	69.7	71.8	71.9	2.2	1.5	Yes
226	Irvine Center Drive	I-405 SB Off-Ramp to Research	70.9	72.1	72.3	1.4	1.5	No
227	Irvine Center Drive	Irvine Valley College to Orange Tree	69.7	71.7	71.8	2.1	1.5	Yes
228	Irvine Center Drive	Fontaine Avenue to Jeffrey Road	69.5	71.5	71.5	2.0	1.5	Yes
229	Irvine Center Drive	Culver Drive to Deerwood	69.7	71.4	71.5	1.8	1.5	Yes
230	Irvine Center Drive	Deerwood to Yale Avenue	69.6	71.4	71.4	1.8	1.5	Yes
231	Irvine Center Drive	Yale Avenue to Fontaine Avenue	69.4	71.4	71.5	2.1	1.5	Yes
232	Irvine Center Drive	Jeffrey Road to Irvine Valley College	69.7	71.3	71.4	1.7	1.5	Yes
233	Irvine Center Drive	Alton Parkway to Spectrum	68.9	71.0	71.1	2.2	1.5	Yes
234	Irvine Center Drive	Spectrum to Pacifica	68.9	71.0	71.0	2.1	1.5	Yes
235	Irvine Center Drive	Hearthstone to Culver Drive	69.2	70.9	70.9	1.7	1.5	Yes
236	Irvine Center Drive	Charter to Barranca Parkway	68.1	70.6	70.7	2.6	1.5	Yes
237	Irvine Center Drive	Jamboree Road to Harvard Avenue	69.7	70.5	70.5	0.8	1.5	No
238	Irvine Center Drive	Pacifica to Entertainment (Enterprise/Fortune)	69.1	70.5	70.6	1.5	1.5	Yes
239	Irvine Center Drive	Valley Oak Drive to Sand Canyon Avenue	68.1	70.5	70.5	2.4	1.5	Yes
240	Irvine Center Drive	Harvard Avenue to Hearthstone	69.2	70.2	70.2	1.0	1.5	No
241	Irvine Center Drive	Research to Hubble	67.9	69.7	70.0	2.1	1.5	Yes
242	Irvine Center Drive	Barranca Parkway to Gateway Boulevard	66.9	69.8	69.9	3.0	1.5	Yes
243	Irvine Center Drive	Bake Parkway to Muller	67.9	69.7	69.9	2.0	1.5	Yes
244	Irvine Center Drive	Discovery to Charter	67.3	69.8	69.9	2.6	1.5	Yes
245	Irvine Center Drive	Hubble to Bake Parkway	67.8	69.5	69.6	1.8	1.5	Yes
246	Irvine Center Drive	Muller to Tesla	67.7	69.3	69.4	1.7	1.5	Yes
247	Irvine Center Drive	Sand Canyon Avenue to Odyssey	67.6	69.2	69.2	1.6	1.5	Yes
248	Irvine Center Drive	Tesla to Scientific Way	67.1	68.9	69.1	2.0	1.5	Yes
249	Irvine Center Drive	Scientific Way to Lake Forest Drive	67.2	68.7	68.9	1.7	1.5	Yes
250	Irvine Center Drive	Gateway Boulevard to Alton Parkway	66.7	68.6	68.7	2.0	1.5	Yes
251	Irvine Center Drive	Laguna Canyon Road to Discovery	66.8	68.6	68.7	1.9	1.5	Yes
252	Irvine Center Drive	Odyssey to Laguna Canyon Road	66.8	68.5	68.6	1.8	1.5	Yes
253	Irvine Center Drive (Edinger)	Redhill Avenue to Jamboree Road	69.6	70.9	70.9	1.3	1.5	No

Table 15

254	Jamboree Road	I-5 SB Off-Ramp to I-5 NB Off-Ramp	74.3	74.5	74.5	0.2	1.5	No
255	Jamboree Road	I-405 SB Off-Ramp to I-405 NB Off Ramp	75.1	75.6	75.6	0.5	1.5	No
256	Jamboree Road	Walnut Avenue to Michelle Drive	73.5	73.9	73.9	0.4	1.5	No
257	Jamboree Road	I-405 NB Off-Ramp to Main Street	76.5	77.0	77.0	0.5	1.5	No
258	Jamboree Road	Michelle Drive to I-5 SB Off-Ramp	73.5	73.6	73.7	0.2	1.5	No
259	Jamboree Road	Main Street to Kelvin Avenue	75.7	76.3	76.4	0.7	1.5	No
260	Jamboree Road	Michelson Drive to I-405 SB Off-Ramp	73.6	74.3	74.3	0.7	1.5	No
261	Jamboree Road	Kelvin Avenue to McGaw Avenue	75.5	76.0	76.0	0.5	1.5	No
262	Jamboree Road	McGaw Avenue to Alton Parkway	75.4	75.9	76.0	0.6	1.5	No
263	Jamboree Road	Birch Street to Campus Drive	72.1	72.9	73.0	0.9	1.5	No
264	Jamboree Road	Dupont Drive to Michelson Drive	73.3	73.8	73.9	0.6	1.5	No
265	Jamboree Road	Alton Parkway to Beckman	75.2	75.5	75.6	0.4	1.5	No
266	Jamboree Road	Fairchild Road to Birch Street	72.2	73.4	73.5	1.3	1.5	No
267	Jamboree Road	Beckman to Barranca Parkway	75.0	75.2	75.3	0.3	1.5	No
268	Jamboree Road	I-5 NB Off-Ramp to El Camino Real	74.9	75.1	75.1	0.2	1.5	No
269	Jamboree Road	Campus Drive to Dupont Drive	72.5	73.1	73.1	0.6	1.5	No
270	Jamboree Road	El Camino Real to West Drive	74.9	75.0	74.9	0.0	1.5	No
271	Jamboree Road	West Drive to Bryan Avenue	74.9	75.0	75.0	0.1	1.5	No
272	Jamboree Road	Bryan Avenue to Irvine Boulevard	74.5	74.7	74.6	0.1	1.5	No
273	Jamboree Road	Koll Center to Fairchild Road	71.7	72.7	72.7	1.0	1.5	No
274	Jamboree Road	MacArthur Boulevard to Koll Center	71.8	72.6	72.7	0.9	1.5	No
275	Jamboree Road	Irvine Boulevard to Portola Parkway	70.0	70.7	70.7	0.7	1.5	No
276	Jamboree Road	Warner Avenue to Edinger Avenue	79.0	79.1	79.1	0.1	1.5	No
277	Jamboree Road	Barranca Parkway to Warner Avenue	78.1	78.3	78.3	0.2	1.5	No
278	Jamboree Road	Edinger Avenue to Walnut Avenue	77.8	78.0	78.0	0.2	1.5	No
279	Jeffrey Road	Walnut Avenue to I-5 NB Off-Ramp	70.9	71.3	71.4	0.5	1.5	No
280	Jeffrey Road	I-5 NB Off-Ramp to Roosevelt	71.8	72.2	72.3	0.5	1.5	No
281	Jeffrey Road	Poplar (Meadows) to Walnut Avenue	70.4	70.9	70.9	0.5	1.5	No
282	Jeffrey Road	Alton Parkway to Barranca Parkway	70.3	70.8	70.8	0.5	1.5	No
283	Jeffrey Road	Irvine Center Drive to Poplar (Meadows)	70.2	70.7	70.7	0.5	1.5	No
284	Jeffrey Road	I-405 NB Off-Ramp to Quail Creek	70.4	70.7	70.8	0.4	1.5	No
285	Jeffrey Road	Barranca Parkway to Irvine Valley College	70.3	70.6	70.6	0.3	1.5	No
286	Jeffrey Road	Quail Creek to Alton Parkway	70.4	70.6	70.7	0.3	1.5	No
287	Jeffrey Road	Irvine Valley College to Irvine Center Drive	70.1	70.4	70.4	0.3	1.5	No
288	Jeffrey Road	Trabuco Road to Hideaway	69.4	69.6	69.7	0.3	1.5	No
289	Jeffrey Road	Hideaway to Bryan Avenue	69.4	69.6	69.7	0.3	1.5	No
290	Jeffrey Road	Roosevelt to Grove	70.0	70.4	70.4	0.4	1.5	No

Table 15

291	Jeffrey Road	Grove to Trabuco Road	70.0	70.2	70.2	0.2	1.5	No
292	Jeffrey Road	Bryan Avenue to Irvine Boulevard	68.1	68.5	68.5	0.4	1.5	No
293	Jeffrey Road	Encore to Portola Parkway	64.0	65.8	65.6	1.6	3.0	No
294	Jeffrey Road	Irvine Boulevard to Encore	64.0	65.5	65.4	1.4	3.0	No
295	Jeronimo Road	Goodyear to Bake Parkway	64.4	64.6	64.5	0.1	3.0	No
296	Jeronimo Road	Alton Parkway to Goodyear	64.1	64.3	64.3	0.2	3.0	No
297	Laguna Canyon Road	Old Laguna Canyon Road to Lake Forest Drive	72.6	73.3	73.4	0.8	1.5	No
298	Laguna Canyon Road	Laguna Canyon Freeway to Quail Hill Parkway	67.7	69.9	70.0	2.3	1.5	Yes
299	Laguna Canyon Road	Discovery to Sand Canyon Avenue	64.8	69.1	69.1	4.3	3.0	Yes
300	Laguna Canyon Road	I-405 Overcrossing to Pasteur	66.0	67.9	68.0	2.0	1.5	Yes
301	Laguna Canyon Road	Irvine Center Drive to Discovery	63.6	67.5	67.5	3.9	3.0	Yes
302	Laguna Canyon Road	Quail Hill Parkway to I-405 Overcrossing	66.0	67.9	68.0	2.0	1.5	Yes
303	Laguna Canyon Road	Pasteur to Alton Parkway	65.5	66.9	67.0	1.5	1.5	Yes
304	Laguna Canyon Road	Waterworks to Irvine Center Drive	64.5	66.4	66.4	1.9	3.0	No
305	Laguna Canyon Road	Alton Parkway to Barranca Parkway	64.8	66.1	66.1	1.3	3.0	No
306	Laguna Canyon Road	Barranca Parkway to Waterworks	63.9	65.6	65.6	1.7	3.0	No
307	Lake Forest Drive	Hidden Canyon to Laguna Canyon Road	68.3	69.3	69.5	1.2	1.5	No
308	Lake Forest Drive	Bake Parkway to Hidden Canyon (Romano)	68.3	69.3	69.5	1.2	1.5	No
309	Lake Forest Drive	Tesla to Bake Parkway	65.3	66.3	66.6	1.3	1.5	No
310	Lake Road	Alton Parkway to Barranca Parkway	59.0	59.2	59.2	0.2	5.0	No
311	Lynx	Irvine Boulevard to Astor	0.0	53.2	53.2	53.2	5.0	Yes
312	MacArthur Boulevard	I-405 SB Off-Ramp to Michelson Drive	76.0	76.7	76.7	0.7	1.5	No
313	MacArthur Boulevard	Main Street to I-405 NB Off-Ramp	75.8	76.6	76.7	0.9	1.5	No
314	MacArthur Boulevard	I-405 NB Off-Ramp and I-405 SB Off-Ramp	75.7	76.6	76.6	0.9	1.5	No
315	MacArthur Boulevard	Jamboree Road to Fairchild Road	69.7	69.9	69.9	0.2	1.5	No
316	MacArthur Boulevard	Fairchild Road to University Drive	69.7	69.9	69.8	0.1	1.5	No
317	MacArthur Boulevard	Fitch to Red Hill Avenue	70.4	70.5	70.5	0.1	1.5	No
318	MacArthur Boulevard	Michelson Drive to Douglas	71.3	72.1	72.2	0.9	1.5	No
319	MacArthur Boulevard	Douglas to Campus Drive	71.3	72.1	72.2	0.9	1.5	No
320	MacArthur Boulevard	Skypark to Main Street	69.0	69.5	69.5	0.5	1.5	No
321	MacArthur Boulevard	Redhill Avenue to Skypark	68.0	68.3	68.4	0.4	1.5	No
322	MacArthur Boulevard	Birch Street to Jamboree Road	66.5	67.0	67.1	0.6	1.5	No
323	MacArthur Boulevard	Campus Drive to Birch Street	68.5	69.3	69.4	0.9	1.5	No
324	Main Street	Gillette Avenue to Von Karman Avenue	69.4	70.7	70.8	1.4	1.5	No
325	Main Street	MacArthur Boulevard to Mercantile	69.4	70.2	70.3	0.9	1.5	No
326	Main Street	Executive Park to MacArthur Boulevard	67.7	68.4	68.4	0.7	1.5	No
327	Main Street	Von Karman Avenue to Cartwright	67.2	68.3	68.4	1.2	1.5	No

Table 15

328	Main Street	McDermott to Red Hill Avenue	67.9	68.1	68.1	0.2	1.5	No
329	Main Street	Red Hill Avenue to Executive Circle	67.7	68.0	68.0	0.3	1.5	No
330	Main Street	Jamboree Road to Union	67.4	67.8	67.8	0.4	1.5	No
331	Main Street	Culver Drive to West Yale Loop	67.0	67.1	67.2	0.2	1.5	No
332	Main Street	Siglo to Jamboree Road	67.2	67.7	67.7	0.5	1.5	No
333	Main Street	Veneto to Harvard Avenue	67.4	67.5	67.5	0.1	1.5	No
334	Main Street	Paseo Westpark to Culver Drive	66.2	66.4	66.3	0.1	1.5	No
335	Main Street	Harvard Avenue to San Mateo	66.2	66.4	66.3	0.1	1.5	No
336	Marine Way	Sand Canyon Avenue to Ridge Valley (O Street)	67.8	72.3	72.3	4.5	1.5	Yes
337	Marine Way	Alton Parkway to Bake Parkway	0.0	69.3	69.3	69.3	5.0	Yes
338	Marine Way	Lynx to Barranca Parkway	0.0	69.3	69.3	69.3	5.0	Yes
339	Marine Way	County Access to Treble	59.3	68.4	68.4	9.1	5.0	Yes
340	Marine Way	Ridge Valley (O Street) to Skyhawk	62.0	68.2	68.2	6.2	3.0	Yes
341	Marine Way	Skyhawk to County Access	59.3	67.1	67.2	7.9	5.0	Yes
342	Marine Way	Barranca Parkway to Alton Parkway	52.7	66.8	66.8	14.1	5.0	Yes
343	Marine Way	Treble to Lynx	0.0	66.4	66.4	66.4	5.0	Yes
344	McGaw Avenue	Von Karman Avenue to Jamboree Road	62.2	64.3	64.3	2.1	3.0	No
345	McGaw Avenue	Red Hill Avenue to Von Karman Avenue	62.1	64.1	64.2	2.1	3.0	No
346	McGaw Avenue	Daimler to Red Hill Avenue	61.0	62.4	62.5	1.5	3.0	No
347	McGaw Avenue	Jamboree Road to Murphy Avenue	57.6	59.3	59.4	1.8	5.0	No
348	Meadowood	Culver Drive to Canyonwood	59.5	59.8	59.8	0.3	5.0	No
349	Meridian	Spectrum to Alton Parkway	54.7	55.3	55.5	0.8	5.0	No
350	Meridian	Alton Parkway to Gateway Boulevard	53.5	54.6	54.7	1.2	5.0	No
351	Merit	Irvine Boulevard to Cadence	59.3	57.9	58.0	-1.3	5.0	No
352	Michelson Drive	Riparian to Harvard Avenue	66.7	68.3	68.3	1.6	1.5	Yes
353	Michelson Drive	Almond Tree Lane to Yale Avenue	66.3	67.1	67.1	0.8	1.5	No
354	Michelson Drive	Von Karman Avenue to Obsidian	66.7	68.0	68.0	1.3	1.5	No
355	Michelson Drive	Parkside to Culver Drive	66.2	67.8	67.8	1.6	1.5	Yes
356	Michelson Drive	Gillman to Seton/Sandburg Way	66.3	66.8	66.8	0.5	1.5	No
357	Michelson Drive	Carlson to Prince	65.4	67.3	67.3	1.9	1.5	Yes
358	Michelson Drive	MacArthur Boulevard to Dupont Drive	66.7	67.3	67.3	0.6	1.5	No
359	Michelson Drive	Harvard Avenue to Parkside	66.2	66.8	66.8	0.6	1.5	No
360	Michelson Drive	Bixby to Von Karman Avenue	64.9	66.7	66.7	1.8	3.0	No
361	Michelson Drive	Jamboree Road to Carlson	68.0	69.6	69.6	1.6	1.5	Yes
362	Michelson Drive	Teller to Jamboree Road	68.7	69.6	69.6	0.9	1.5	No
363	Michelson Drive	Jordan East to University Drive	66.6	66.9	66.9	0.3	1.5	No
364	Michelson Drive	Culver Drive to Angell	65.9	66.2	66.2	0.3	1.5	No

Table 15

365	Modjeska (A Street)	Portola Springs to Irvine Boulevard	70.7	71.7	71.7	1.0	1.5	No
366	Modjeska (A Street)	South of Irvine Boulevard	61.4	61.1	61.0	-0.4	3.0	No
367	Muirlands Boulevard	Bake Parkway to City Limits	66.4	67.1	67.2	0.8	1.5	No
368	Muirlands Boulevard	Alton Parkway to Sterling	66.1	66.3	66.3	0.2	1.5	No
369	Muirlands Boulevard	Wrigley to Bake Parkway	66.1	66.3	66.3	0.2	1.5	No
370	Newport Coast Drive	SR-73 NB Off-Ramp to Turtle Ridge	65.9	66.6	66.6	0.7	1.5	No
371	Newport Coast Drive	Turtle Crest to Bonita Canyon Drive	65.0	65.1	65.1	0.1	1.5	No
372	Nightmist	Sand Canyon Avenue to Tulip (Road C)	60.8	61.9	61.8	1.0	3.0	No
373	Northwood	Yale Avenue to Savannah	62.3	62.5	62.5	0.2	3.0	No
374	Northwood	Goldrush to Yale Avenue	60.5	61.5	61.5	1.0	3.0	No
375	Oak Canyon Drive	Valley Oak Drive to Sand Canyon Avenue	66.2	69.2	69.2	3.0	1.5	Yes
376	Pacifica	Gateway to Barranca Parkway	63.3	65.2	65.2	1.9	3.0	No
377	Pacifica	Alton Parkway to Gateway	61.8	64.0	64.0	2.2	3.0	No
378	Pacifica	Irvine Center Drive to Fortune Drive (Spectrum Center Drive)	61.7	62.7	62.8	1.1	3.0	No
379	Pacifica	Meridian to Alton Parkway	58.1	60.8	60.8	2.7	5.0	No
380	Park Place	Christamon South to Yale Avenue	56.8	57.0	57.0	0.2	5.0	No
381	Portola Parkway	Bee Canyon Access Road to Sand Canyon Avenue	70.3	71.5	71.7	1.4	1.5	No
382	Portola Parkway	Jeffrey Road to Bee Canyon Access Road	70.3	71.5	71.7	1.4	1.5	No
383	Portola Parkway	Arrowhead to Ridge Valley Parkway	69.6	71.4	71.5	1.9	1.5	Yes
384	Portola Parkway	Sand Canyon Avenue to Arrowhead	69.6	71.0	71.1	1.5	1.5	Yes
385	Portola Parkway	Portola Springs to SR-241 SB Off-Ramp	65.5	70.1	70.1	4.6	1.5	Yes
386	Portola Parkway	Gatepark to Culver Drive	69.6	70.6	70.7	1.1	1.5	No
387	Portola Parkway	ETC-6 (SR-261) NB Off-Ramp to Gatepark	69.6	70.5	70.7	1.1	1.5	No
388	Portola Parkway	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	69.6	70.4	70.5	0.9	1.5	No
389	Portola Parkway	Jamboree Road to Bellevue	69.6	70.4	70.5	0.9	1.5	No
390	Portola Parkway	Bellevue to ETC-6 (SR-261) SB Off-Ramp	69.6	70.3	70.4	0.8	1.5	No
391	Portola Parkway	Yale Avenue to Jeffrey Road	68.6	70.1	70.2	1.6	1.5	Yes
392	Portola Parkway	Culver Drive to Yale Avenue	68.6	69.6	69.7	1.1	1.5	No
393	Portola Parkway	Silverado to Portola Springs	66.5	68.5	68.6	2.1	1.5	Yes
394	Pusan	Irvine Boulevard to Cadence	54.0	56.2	56.1	2.1	5.0	No
395	Quail Hill Parkway	Shady Canyon Drive to Passage	67.3	67.4	67.4	0.1	1.5	No
396	Quail Hill Parkway	East Knollcrest to Laguna Canyon Road	64.8	65.5	65.5	0.7	3.0	No
397	Quassar Drive (Spectrum)	Irvine Center Drive to Spectrum Center Drive (Fortune)	54.4	54.8	54.9	0.5	5.0	No
398	Red Hill Avenue	MacArthur Boulevard to McGaw Avenue	70.8	71.5	71.6	0.8	1.5	No
399	Red Hill Avenue	I-405 Over Crossing to Main Street	69.6	70.1	70.2	0.6	1.5	No
400	Red Hill Avenue	Alton Parkway to Deere Avenue	69.5	70.0	70.1	0.6	1.5	No
401	Red Hill Avenue	McGaw Avenue to Alton Parkway	69.3	69.9	70.0	0.7	1.5	No

Table 15

402	Red Hill Avenue	Deere Avenue to Barranca Parkway	69.3	69.8	69.9	0.6	1.5	No
403	Red Hill Avenue	Skypark East to MacArthur Boulevard	70.2	71.3	71.4	1.2	1.5	No
404	Red Hill Avenue	Main Street to Skypark East	69.6	70.6	70.8	1.2	1.5	No
405	Research Drive	Hubble to Bake Parkway	65.4	69.5	69.5	4.1	1.5	Yes
406	Research Drive	Scientific to Lake Forest Drive	65.6	67.4	67.8	2.2	1.5	Yes
407	Research Drive	Bake Parkway to Muller	66.2	66.6	66.7	0.5	1.5	No
408	Research Drive	Irvine Center Drive to Bunsen	64.9	65.6	65.7	0.8	3.0	No
409	Ridge Valley (O Street)	Irvine Boulevard to Trabuco Road (Great Park Boulevard)	65.5	67.3	67.3	1.8	1.5	Yes
410	Ridge Valley (O Street)	Portola Parkway to Irvine Boulevard	65.9	66.4	66.4	0.5	1.5	No
411	Ridge Valley (O Street)	Trabuco Road (Great Park Boulevard) to Marine Way	65.8	66.0	66.0	0.2	1.5	No
412	Ridge Valley (O Street)	Ranchland to Portola Parkway	58.0	58.1	58.1	0.1	5.0	No
413	Ridgeline Drive	Concordia East to University Drive	67.7	68.7	68.7	1.0	1.5	No
414	Ridgeline Drive	Turtle Rock Drive to San Simeon	67.7	68.4	68.4	0.7	1.5	No
415	Rockfield Avenue	Whatney to McLaren	66.3	67.6	67.7	1.4	1.5	No
416	Rockfield Avenue	Bake Parkway to Whatney	62.5	64.1	64.2	1.7	3.0	No
417	Rockfield Avenue	Thomas to Bake Parkway	62.5	63.1	63.1	0.6	3.0	No
418	Roosevelt	Jeffrey Road to Vision	65.2	66.5	66.6	1.4	1.5	No
419	Roosevelt	Yale Avenue to Van Buren	67.9	68.2	68.2	0.3	1.5	No
420	Roosevelt	Vision to Bay Tree	64.5	66.2	66.4	1.9	3.0	No
421	Roosevelt	Nimitz to Jeffrey Road	65.2	65.9	65.9	0.7	1.5	No
422	Roosevelt	Tulip (Road C) to Sand Canyon Avenue	63.7	65.6	65.7	2.0	3.0	No
423	Royal Oak	Alton Parkway to Eaglecreek	63.8	64.0	64.0	0.2	3.0	No
424	Sand Canyon Avenue	Oak Canyon Drive to Burt Road	70.7	72.1	72.1	1.4	1.5	No
425	Sand Canyon Avenue	Irvine Center Drive to Oak Canyon Drive	70.6	71.9	72.0	1.4	1.5	No
426	Sand Canyon Avenue	I-405 NB Off-Ramp to Alton Parkway	73.6	74.6	74.6	1.0	1.5	No
427	Sand Canyon Avenue	Burt Road to I-5 SB Off-Ramp	71.2	72.7	72.7	1.5	1.5	Yes
428	Sand Canyon Avenue	Marine to I-5 NB Off-Ramp	72.7	74.6	74.8	2.1	1.5	Yes
429	Sand Canyon Avenue	Trabuco Road to Towngate	70.0	71.1	71.3	1.3	1.5	No
430	Sand Canyon Avenue	Barranca Parkway to Waterworks	69.2	70.8	70.9	1.7	1.5	Yes
431	Sand Canyon Avenue	I-5 SB Off-Ramp to Marine	72.7	73.8	74.0	1.3	1.5	No
432	Sand Canyon Avenue	Hospital to Barranca Parkway	69.3	70.6	70.6	1.3	1.5	No
433	Sand Canyon Avenue	Nightmist to Roosevelt	73.3	73.5	73.5	0.2	1.5	No
434	Sand Canyon Avenue	I-405 SB Off-Ramp to I-405 NB Off-Ramp	72.4	73.5	73.5	1.1	1.5	No
435	Sand Canyon Avenue	I-5 NB Off-Ramp to Nightmist	73.2	73.5	73.7	0.5	1.5	No
436	Sand Canyon Avenue	Towngate to Irvine Boulevard	69.3	70.4	70.7	1.4	1.5	No
437	Sand Canyon Avenue	Waterworks to Irvine Center Drive	69.2	70.2	70.3	1.1	1.5	No
438	Sand Canyon Avenue	Irvine Boulevard to Portola Parkway	68.0	69.2	70.4	2.4	1.5	Yes



Table 15

439	Sand Canyon Avenue	Roosevelt to Trabuco Road	72.6	72.8	72.8	0.2	1.5	No
440	Sand Canyon Avenue	Alton Parkway to Hospital	69.7	70.6	70.6	0.9	1.5	No
441	Sand Canyon/Shady Canyon	Quail Hill Parkway to I-405 SB Ramps	71.3	71.7	71.8	0.5	1.5	No
442	Scientific Way	Irvine Center Drive to Wald	54.6	55.0	54.9	0.3	5.0	No
443	Shady Canyon Drive	Culver Drive/Bonita Canyon Drive to Cloverfield	68.6	69.2	69.2	0.6	1.5	No
444	Shady Canyon Drive	Bommer Canyon Road to Sunnyhill	67.1	67.5	67.6	0.5	1.5	No
445	Skyhawk	Great Park Boulevard to Marine Way	52.8	59.6	59.6	6.8	5.0	Yes
446	Southwood	Yale Avenue to Colt	60.5	60.5	60.6	0.1	3.0	No
447	Southwood	Challenger to Yale Avenue	59.9	60.2	60.3	0.4	5.0	No
448	Spectrum Center Drive (Fortune Drive)	Pacifica to Quassar Drive (Spectrum )	61.4	61.9	62.0	0.6	3.0	No
449	Spectrum Center Drive (Fortune Drive)	Quassar Drive (Spectrum ) to Gatewayb	62.0	62.4	62.5	0.5	3.0	No
450	Sunnyhill	Shady Canyon Drive to Turtle Rock Drive	56.9	57.6	57.6	0.7	5.0	No
451	Technology Drive	Barranca Parkway to Alton Parkway	67.0	70.6	70.6	3.6	1.5	Yes
452	Technology Drive	Old Laguna Canyon Road to I-5/SR-133 Undercrossing	63.2	69.2	69.3	6.1	3.0	Yes
453	Technology Drive	I-5/SR-133 to Barranca Parkway	62.8	69.1	69.1	6.3	3.0	Yes
454	Technology Drive	Ada to Alton Parkway	57.8	63.0	63.1	5.3	5.0	Yes
455	Toledo Way	Bake Parkway to City Limits	65.5	65.7	65.7	0.2	1.5	No
456	Toledo Way	Goodyear to Bake Parkway	64.5	64.7	64.7	0.2	3.0	No
457	Toledo Way	Alton Parkway to Parker	63.9	64.3	64.4	0.5	3.0	No
458	Trabuco Road	Keystone to Sand Canyon Avenue	66.7	67.1	67.2	0.5	1.5	No
459	Trabuco Road	Jeffrey Road to Keystone	66.7	66.9	66.9	0.2	1.5	No
460	Trabuco Road	Culver Drive to I-5 NB Off-Ramp	66.3	66.7	66.8	0.5	1.5	No
461	Trabuco Road	Monroe to Yale Avenue	66.3	66.6	66.7	0.4	1.5	No
462	Trabuco Road	I-5 NB Off-Ramp to Monroe	66.3	66.5	66.6	0.3	1.5	No
463	Trabuco Road	Yale Avenue to Remington	65.7	66.2	66.3	0.6	1.5	No
464	Trabuco Road	Remington to Jeffrey Road	65.7	66.0	66.1	0.4	1.5	No
465	Turtle Ridge Drive	Federation Way to Bonita Canyon	0.0	68.8	68.7	68.7	5.0	Yes
466	Turtle Rock Drive	Ridgeline to Willowleaf	66.9	67.8	67.8	0.9	1.5	No
467	Turtle Rock Drive	Silkwood to Sunnyhill	67.0	67.7	67.8	0.8	1.5	No
468	Turtle Rock Drive	Canyon Park to Ridgeline	66.7	67.0	67.0	0.3	1.5	No
469	Turtle Rock Drive	Sunnyhill to Southernwood	63.9	64.0	64.0	0.1	3.0	No
470	Turtle Rock Drive	Campus Drive to Hillgate	63.8	64.1	64.0	0.2	3.0	No
471	Turtle Rock Drive	Paseo Segovia to Campus Drive	65.3	65.4	65.4	0.1	1.5	No
472	University Drive	Golden Glow to Yale Avenue	72.2	72.9	73.0	0.8	1.5	No
473	University Drive	Ridgeline to Michelson Drive	72.1	72.5	72.6	0.5	1.5	No
474	University Drive	Culver Drive to Golden Glow	72.1	72.8	72.9	0.8	1.5	No
475	University Drive	Yale Avenue to Ridgeline	72.0	72.3	72.4	0.4	1.5	No

Table 15

476	University Drive	Michelson Drive to I-405 SB Off-Ramp	72.3	72.7	72.7	0.4	1.5	No
477	University Drive	Mesa to Campus Drive	73.3	74.5	74.6	1.3	1.5	No
478	University Drive	MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	73.3	74.4	74.6	1.3	1.5	No
479	University Drive	California Avenue to Mesa	73.3	74.3	74.4	1.1	1.5	No
480	University Drive	Campus Drive to Harvard Avenue	69.5	70.6	70.7	1.2	1.5	No
481	University Drive	SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	70.4	71.5	71.7	1.3	1.5	No
482	University Drive	SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps	69.2	70.1	70.3	1.1	1.5	No
483	University Drive	San Joaquin to Culver Drive	68.7	69.7	69.8	1.1	1.5	No
484	University Drive	Harvard Avenue to San Joaquin	68.7	69.7	69.8	1.1	1.5	No
485	Valley Oak Drive	Hawkcreek to Barranca Parkway	63.0	68.0	68.0	5.0	3.0	Yes
486	Valley Oak Drive	Irvine Center Drive to Oak Canyon Drive	65.2	69.0	69.1	3.9	1.5	Yes
487	Valley Oak Drive	Barranca Parkway to Irvine Center Drive	62.9	66.7	66.8	3.9	3.0	Yes
488	Valley Oak Drive	Alton Parkway to Hawkcreek	63.8	64.8	64.8	1.0	3.0	No
489	Von Karman Avenue	Marriott to Morse Avenue	68.9	70.9	70.9	2.0	1.5	Yes
490	Von Karman Avenue	Michelson Drive to Quartz	68.8	70.7	70.8	2.0	1.5	Yes
491	Von Karman Avenue	McGaw Avenue to Alton Parkway	69.3	70.7	70.7	1.4	1.5	No
492	Von Karman Avenue	Alton Parkway to Barranca Parkway	68.4	70.3	70.4	2.0	1.5	Yes
493	Von Karman Avenue	Main Street to Anchor	69.2	70.6	70.6	1.4	1.5	No
494	Von Karman Avenue	Anchor to McGaw Avenue	69.2	70.4	70.5	1.3	1.5	No
495	Von Karman Avenue	Morse to Main Street	69.2	70.2	70.2	1.0	1.5	No
496	Von Karman Avenue	Martin to Dupont Drive	67.8	69.5	69.6	1.8	1.5	Yes
497	Von Karman Avenue	Campus Drive to Martin	67.8	69.5	69.5	1.7	1.5	Yes
498	Von Karman Avenue	Dupont Drive to Michelson Drive	67.8	69.5	69.5	1.7	1.5	Yes
499	Walnut Avenue	Jeffrey Road to I-5 SB Off-Ramp	68.9	70.9	70.9	2.0	1.5	Yes
500	Walnut Avenue	Myford Road to Jamboree Road SB Off-Ramp	68.6	69.1	69.1	0.5	1.5	No
501	Walnut Avenue	The Mall Street to Culver Drive	68.2	68.7	68.8	0.6	1.5	No
502	Walnut Avenue	Harvard Avenue to The Mall Street	68.2	68.7	68.7	0.5	1.5	No
503	Walnut Avenue	Franciscan Street to Ravenwood Street	68.0	68.4	68.5	0.5	1.5	No
504	Walnut Avenue	Ravenwood Street to Yale Avenue	68.0	68.4	68.3	0.3	1.5	No
505	Walnut Avenue	Culver Drive to Franciscan Street	68.0	68.3	68.4	0.4	1.5	No
506	Walnut Avenue	Peters Canyon Road to Harvard Avenue	67.0	67.9	68.0	1.0	1.5	No
507	Walnut Avenue	Jamboree Road NB Off-Ramp to Peters Canyon Road	67.0	67.8	67.8	0.8	1.5	No
508	Walnut Avenue	Yale Avenue to Kazan Street	66.3	67.1	67.2	0.9	1.5	No
509	Walnut Avenue	Wisteria to Jeffrey Road	66.3	67.1	67.2	0.9	1.5	No
510	Warner Avenue	Jamboree Road SB Off-ramp to Construction North	69.6	70.2	70.1	0.5	1.5	No
511	Warner Avenue	Construction North to Harvard Avenue	67.8	68.6	68.5	0.7	1.5	No
512	Warner Avenue	Harvard Avenue to Paseo Westpark	66.1	67.0	67.0	0.9	1.5	No

Table 15

513	Warner Avenue	Santa Ynez to Culver Drive	65.1	66.0	66.0	0.9	1.5	No
514	Warner Avenue	Culver Drive to West Yale Loop	64.9	65.7	65.7	0.8	3.0	No
515	West Yale Loop	Alton Parkway to Blue Lake North	63.3	64.0	64.0	0.7	3.0	No
516	West Yale Loop	Eagle Run to Main Street	63.3	63.8	63.9	0.6	3.0	No
517	West Yale Loop	Thunder Run to Yale Avenue	62.7	63.9	63.9	1.2	3.0	No
518	West Yale Loop	Main Street to Timber Run	62.7	62.9	62.8	0.1	3.0	No
519	West Yale Loop	Yale Avenue to Shorebird	61.8	62.9	63.0	1.2	3.0	No
520	West Yale Loop	Warner Avenue to Stonecreek South	61.8	62.6	62.6	0.8	3.0	No
521	West Yale Loop	Barranca Parkway to Alton Parkway	61.7	62.4	62.4	0.7	3.0	No
522	West Yale Loop	Stonecreek North to Warner Avenue	61.8	62.4	62.5	0.7	3.0	No
523	West Yale Loop	Birdsong to Barranca Parkway	61.8	62.3	62.3	0.5	3.0	No
524	Westwood	Yorktown to Bryan Avenue	63.2	63.6	63.5	0.3	3.0	No
525	Westwood	Bryan Avenue to Leaf	61.3	61.5	61.5	0.2	3.0	No
526	Yale Avenue	Deerfield Avenue to Winvale Avenue	68.5	68.6	68.6	0.1	1.5	No
527	Yale Avenue	Hicks Canyon Drive to Meadowood	67.2	67.3	67.3	0.1	1.5	No
528	Yale Avenue	Walnut Avenue to Roosevelt	70.7	71.0	71.0	0.3	1.5	No
529	Yale Avenue	Roosevelt to Trabuco Road	66.9	67.0	67.1	0.2	1.5	No
530	Yale Avenue	Irvine Center Drive to Deerfield Avenue	66.5	66.9	66.9	0.4	1.5	No
531	Yale Avenue	West Yale Loop to Irvine Center Drive	65.0	66.3	66.4	1.4	1.5	No
532	Yale Avenue	Winvale Avenue to Karen Ann Lane	65.6	65.7	65.7	0.1	1.5	No
533	Yale Avenue	Karen Ann Lane to Walnut Avenue	65.6	65.7	65.7	0.1	1.5	No
534	Yale Avenue	Trabuco Road to Southwood	65.1	65.6	65.7	0.6	1.5	No
535	Yale Avenue	Southwood to Bryan Avenue	65.1	65.4	65.5	0.4	1.5	No
536	Yale Avenue	Northwood to Irvine Boulevard	64.8	65.1	65.1	0.3	3.0	No
537	Yale Avenue	Bryan Avenue to Monticello	64.8	65.0	65.0	0.2	3.0	No
538	Yale Avenue	Irvine Boulevard to Park Place	64.1	64.3	64.3	0.2	3.0	No
539	Yale Avenue	University Drive to Royce	57.9	63.4	63.5	5.6	5.0	Yes
540	Yale Court	Arborwood to Portola Parkway	60.0	60.3	60.3	0.3	1.5	No
<sup>1</sup> Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses. <sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use. <sup>3</sup> Does the Project create an incremental noise level increase exceeding the significance criteria?								

Table 16

Table 16: Current General Plan and Cumulative Conservative Plan Traffic Noise Level Increases

ID	Road	Segment	CNEL at Receiving Land Use (dBA) <sup>2</sup>				Incremental Noise Level Increase Threshold <sup>3</sup>	
			Current General Plan	Conservative	Cumulative Conservative	Cumulative Increase	Limit	Exceeded?
1	Ada	Barranca Parkway to Marine Way	0.0	70.8	70.8	70.8	5.0	Yes
2	Ada	Alton Parkway to Barranca Parkway	67.1	69.3	69.3	2.2	1.5	Yes
3	Alton Parkway	Enterprise to I-5 NB Off-Ramp	72.6	74.1	74.1	1.5	1.5	Yes
4	Alton Parkway	I-5 NB Off-Ramp to Technology Drive West	73.3	74.8	74.8	1.5	1.5	Yes
5	Alton Parkway	East Yale Loop to Jeffrey Road	71.5	71.8	71.8	0.3	1.5	No
6	Alton Parkway	Gateway Boulevard to Enterprise	70.5	72.0	72.0	1.5	1.5	Yes
7	Alton Parkway	Jeffrey Road to Royal Oak	70.4	70.9	70.9	0.5	1.5	No
8	Alton Parkway	Daimler Street to Red Hill Avenue	70.4	70.7	70.7	0.3	1.5	No
9	Alton Parkway	Culver Drive to West Yale Loop	70.5	70.7	70.7	0.2	1.5	No
10	Alton Parkway	West Yale Loop to Lake Road	70.5	70.7	70.7	0.2	1.5	No
11	Alton Parkway	Technology Drive West to Ada	71.4	72.6	72.6	1.2	1.5	No
12	Alton Parkway	Creek Road to East Yale Loop	70.3	70.6	70.7	0.4	1.5	No
13	Alton Parkway	Red Hill Avenue to Von Karman Avenue	69.9	70.5	70.6	0.7	1.5	No
14	Alton Parkway	Lake Road to Creek Road	70.3	70.4	70.4	0.1	1.5	No
15	Alton Parkway	Telemetry to Banting	69.8	70.4	70.5	0.7	1.5	No
16	Alton Parkway	Irvine Boulevard to Commercentre	71.0	70.8	70.8	-0.2	1.5	No
17	Alton Parkway	Jenner to Telemetry	69.7	70.4	70.4	0.7	1.5	No
18	Alton Parkway	Irvine Center Drive to Gateway Boulevard	69.8	71.2	71.3	1.5	1.5	Yes
19	Alton Parkway	Sand Canyon Avenue to Hospital	73.6	73.7	73.7	0.1	1.5	No
20	Alton Parkway	Laguna Canyon Road to Jenner	69.7	70.3	70.3	0.6	1.5	No
21	Alton Parkway	Technology Drive East to Barranca Pkwy/Muirlands Blvd	70.4	71.2	71.2	0.8	1.5	No
22	Alton Parkway	Royal Oak to Valley Oak Drive	69.7	70.1	70.1	0.4	1.5	No
23	Alton Parkway	Banting to Pacifica	69.3	70.0	70.1	0.8	1.5	No
24	Alton Parkway	Barranca Pkwy/Muirlands Blvd to Jeronimo Road	70.3	70.9	71.0	0.7	1.5	No
25	Alton Parkway	Ada to Technology Drive East	70.2	70.7	70.7	0.5	1.5	No
26	Alton Parkway	Von Karman Avenue to Jamboree Road	69.2	69.7	69.8	0.6	1.5	No
27	Alton Parkway	Jeronimo Road to Hughes	69.9	69.9	69.9	0.0	1.5	No
28	Alton Parkway	Hughes to Morgan	69.7	69.8	69.8	0.1	1.5	No
29	Alton Parkway	Morgan to Toledo Way	69.0	69.1	69.1	0.1	1.5	No
30	Alton Parkway	San Marino to Culver Drive	69.0	69.2	69.2	0.2	1.5	No
31	Alton Parkway	Jamboree Road to Murphy Avenue	68.6	69.0	69.2	0.6	1.5	No

Table 16

32	Alton Parkway	Hospital to Laguna Canyon Road	71.5	72.0	72.1	0.6	1.5	No
33	Alton Parkway	Valley Oak Drive to Sand Canyon Avenue	71.4	71.8	71.9	0.5	1.5	No
34	Alton Parkway	Murphy Avenue to Harvard Avenue	68.5	68.8	69.0	0.5	1.5	No
35	Alton Parkway	Foster to Irvine Boulevard	69.0	68.7	68.7	-0.3	1.5	No
36	Alton Parkway	Fairbanks to Foster	68.7	68.5	68.6	-0.1	1.5	No
37	Alton Parkway	Toledo Way to Berteia	68.4	68.4	68.4	0.0	1.5	No
38	Alton Parkway	Pacifica to Meridian	70.7	71.7	71.7	1.0	1.5	No
39	Alton Parkway	Berteia to Fairbanks	68.3	68.3	68.3	0.0	1.5	No
40	Alton Parkway	Meridian to Irvine Center Drive	67.5	68.3	68.3	0.8	1.5	No
41	Alton Parkway	Paseo Westpark to San Marino	68.0	68.3	68.3	0.3	1.5	No
42	Alton Parkway	Harvard Avenue to Paseo Westpark	67.1	67.7	67.9	0.8	1.5	No
43	Astor	Lynx to Fairbanks	66.9	67.1	67.1	0.2	1.5	No
44	Astor	Cadence to Lynx	66.0	65.9	65.9	-0.1	1.5	No
45	Bake Parkway	I-5 NB Off-Ramp to Rockfield Boulevard	76.4	76.7	76.7	0.3	1.5	No
46	Bake Parkway	Muirlands Boulevard to Jeronimo Road	72.9	73.0	73.1	0.2	1.5	No
47	Bake Parkway	Rockfield Boulevard to Muirlands Boulevard	75.1	75.1	75.1	0.0	1.5	No
48	Bake Parkway	Jeronimo Road to Toledo Way	72.0	72.1	72.2	0.2	1.5	No
49	Bake Parkway	Toledo Way to Cromwell	71.6	71.7	71.7	0.1	1.5	No
50	Bake Parkway	Cromwell to Irvine Boulevard	71.6	71.6	71.6	0.0	1.5	No
51	Bake Parkway	Research Drive to I-5 SB Off-Ramp	69.3	69.6	69.7	0.4	1.5	No
52	Bake Parkway	Irvine Center Drive to Research Drive	64.6	64.9	65.1	0.5	3.0	No
53	Bake Parkway	Lake Forest Drive to Irvine Center Drive	63.0	63.4	63.7	0.7	3.0	No
54	Banting	Alton Parkway to Barranca Parkway	59.3	60.3	60.3	1.0	5.0	No
55	Barranca Parkway	Pacifica to Irvine Center Drive	71.7	73.3	73.3	1.6	1.5	Yes
56	Barranca Parkway	Banting to Pacifica	71.8	72.8	72.8	1.0	1.5	No
57	Barranca Parkway	I-5 HOV Ramp to Technology Drive West	70.9	73.0	73.0	2.1	1.5	Yes
58	Barranca Parkway	Technology Drive West to Ada	71.5	72.7	72.7	1.2	1.5	No
59	Barranca Parkway	Irvine Center Drive to I-5 HOV Ramp	70.8	72.6	72.6	1.8	1.5	Yes
60	Barranca Parkway	Culver Drive to West Yale Loop	72.0	72.3	72.3	0.3	1.5	No
61	Barranca Parkway	East Yale Loop to Jeffrey Road	71.7	72.2	72.3	0.6	1.5	No
62	Barranca Parkway	West Yale Loop to Lake Road	71.8	72.1	72.1	0.3	1.5	No
63	Barranca Parkway	Ada to Alton Parkway	72.3	72.1	72.2	-0.1	1.5	No
64	Barranca Parkway	Lake Road to Creek Road	71.4	71.8	71.8	0.4	1.5	No
65	Barranca Parkway	Red Hill Avenue to Armstrong Avenue	74.4	74.7	74.8	0.4	1.5	No
66	Barranca Parkway	Discovery/Herchel to Banting	71.1	71.6	71.7	0.6	1.5	No
67	Barranca Parkway	Lyon to East Yale Loop	71.1	71.6	71.6	0.5	1.5	No
68	Barranca Parkway	Creek Road to Lyon	71.1	71.5	71.5	0.4	1.5	No

Table 16

69	Barranca Parkway	Von Karman Avenue to Jamboree Road	72.4	72.8	72.8	0.4	1.5	No
70	Barranca Parkway	Sand Canyon Avenue to Laguna Canyon Road	70.6	71.1	71.1	0.5	1.5	No
71	Barranca Parkway	Armstrong Avenue to Von Karman Avenue	72.1	72.5	72.5	0.4	1.5	No
72	Barranca Parkway	Valley Oak Drive to Sand Canyon Avenue	70.4	70.8	70.8	0.4	1.5	No
73	Barranca Parkway	Jamboree Road to Construction Circle	70.7	71.2	71.2	0.5	1.5	No
74	Barranca Parkway	Santa Rosa to Culver Drive	70.6	71.0	71.1	0.5	1.5	No
75	Barranca Parkway	FedEx to Discovery/Herchel	69.6	70.5	70.6	1.0	1.5	No
76	Barranca Parkway	Jeffrey Road to Valley Oak Drive	69.7	70.4	70.5	0.8	1.5	No
77	Barranca Parkway	Laguna Canyon Road to FedEx	69.4	70.4	70.4	1.0	1.5	No
78	Barranca Parkway	Pullman Street to Red Hill Avenue	73.4	73.7	73.6	0.2	1.5	No
79	Barranca Parkway	Construction Circle to Fire Station	70.1	70.6	70.6	0.5	1.5	No
80	Barranca Parkway	Fire Station to Harvard Avenue	70.1	70.6	70.6	0.5	1.5	No
81	Barranca Parkway	Paseo Westpark to Santa Rosa	70.1	70.6	70.6	0.5	1.5	No
82	Barranca Parkway	Harvard Avenue to Paseo Westpark	69.7	70.2	70.3	0.6	1.5	No
83	Bay Tree	Trabuco Road to Roosevelt	57.2	57.1	57.1	-0.1	5.0	No
84	Beacon	Ridge Valley to Benchmark	59.0	59.7	59.7	0.7	5.0	No
85	Benchmark (LN Street)	Ridge Valley (O Street) to Bosque	56.7	56.5	56.5	-0.2	5.0	No
86	Bison Avenue	SR-73 NB Off-Ramp to California Avenue	69.7	69.6	69.7	0.0	1.5	No
87	Bonita Canyon Drive	MacArthur Boulevard to SR-73	70.2	70.3	70.3	0.1	1.5	No
88	Bonita Canyon Drive	Turtle Ridge to Shady Canyon Drive	68.5	68.6	68.6	0.1	1.5	No
89	Bonita Canyon Drive	Newport Coast Drive to Turtle Ridge	68.2	68.2	68.2	0.0	1.5	No
90	Bonita Canyon Drive	SR-73 NB Off-Ramp to Newport Coast Drive	67.9	68.0	68.1	0.2	1.5	No
91	Bosque	Cadence to Great Park Boulevard	64.8	65.2	65.2	0.4	3.0	No
92	Bosque	Irvine Boulevard to Benchmark (LN Street)	63.0	63.6	63.6	0.6	3.0	No
93	Bosque	Benchmark to Cadence	63.0	63.2	63.2	0.2	3.0	No
94	Bosque	Great Park Boulevard to Beacon	56.9	56.8	56.8	-0.1	5.0	No
95	Bosque	Beacon to S 5th Street	55.9	56.2	56.2	0.3	5.0	No
96	Bryan Avenue	Jamboree Road to Market Place	68.9	69.0	69.1	0.2	1.5	No
97	Bryan Avenue	Market Place to El Camino Real	68.9	68.9	68.8	-0.1	1.5	No
98	Bryan Avenue	Rubicon to Culver Drive	68.9	68.8	68.9	0.0	1.5	No
99	Bryan Avenue	El Camino Real to Rubicon	68.9	68.8	68.9	0.0	1.5	No
100	Bryan Avenue	Eastwood to Jeffrey Road	66.3	67.1	67.2	0.9	1.5	No
101	Bryan Avenue	Westwood to Yale Avenue	66.3	66.8	66.8	0.5	1.5	No
102	Bryan Avenue	Culver Drive to Westwood	66.4	66.7	66.7	0.3	1.5	No
103	Bryan Avenue	Yale Avenue to Eastwood	66.0	66.7	66.8	0.8	1.5	No
104	Cadence	Pusan to Chinon	64.1	65.6	65.6	1.5	3.0	No
105	Cadence	Bosque to Pusan	64.2	65.3	65.3	1.1	3.0	No

Table 16

106	Cadence	Ridge Valley (O Street) to Bosque	64.0	64.0	64.0	0.0	3.0	No
107	Cadence	Chinon to Merit	59.1	62.3	62.4	3.3	5.0	No
108	Cadence	Merit to Astor	58.6	59.4	59.4	0.8	5.0	No
109	California Avenue	University Drive to Academy Way	66.2	66.2	67.3	1.1	1.5	No
110	California Avenue	Campus Drive to Harvard Avenue	64.1	64.2	64.2	0.1	3.0	No
111	California Avenue	Theory to Bison Avenue	64.0	63.9	64.0	0.0	3.0	No
112	Campus Drive	Carlson Avenue to University Drive	73.0	73.2	73.3	0.3	1.5	No
113	Campus Drive	University Drive to Bridge Road	71.7	71.8	71.8	0.1	1.5	No
114	Campus Drive	Jamboree Road to Carlson Avenue	71.3	71.5	71.6	0.3	1.5	No
115	Campus Drive	Stanford Court to Berkeley Avenue	71.0	71.1	71.1	0.1	1.5	No
116	Campus Drive	California Avenue to Culver Drive	70.9	70.9	70.9	0.0	1.5	No
117	Campus Drive	Berkeley Avenue to Cornell	69.9	70.0	69.9	0.0	1.5	No
118	Campus Drive	Martin to Von Karman Avenue	68.7	69.1	69.2	0.5	1.5	No
119	Campus Drive	Culver Drive to Paseo Montoya (Turtle Rock Drive)	68.6	68.7	68.7	0.1	1.5	No
120	Campus Drive	Von Karman Avenue to Teller Avenue	68.1	68.4	68.5	0.4	1.5	No
121	Campus Drive	MacArthur Boulevard to Martin	68.1	68.2	68.3	0.2	1.5	No
122	Campus Drive	Teller Avenue to Jamboree Road	67.2	67.5	67.6	0.4	1.5	No
123	Carlson Avenue	Michelson Drive to Campus Drive	67.8	67.9	67.9	0.1	1.5	No
124	Chinon	Irvine Boulevard to Cadence	58.3	58.8	58.8	0.5	5.0	No
125	Creek Road	Alton Parkway to Barranca Parkway	56.0	56.3	56.3	0.3	5.0	No
126	Culver Drive	Michelson Drive to I-405 SB Off-Ramp	73.7	74.0	73.9	0.2	1.5	No
127	Culver Drive	I-405 SB Off-Ramp to I-405 NB Off Ramp	73.9	73.9	73.8	-0.1	1.5	No
128	Culver Drive	I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)	73.9	73.9	73.9	0.0	1.5	No
129	Culver Drive	Scottsdale Drive to I-5 SB Off- Ramp	73.9	73.8	73.8	-0.1	1.5	No
130	Culver Drive	I-405 NB Off-Ramp to San Leandro	73.6	73.6	73.6	0.0	1.5	No
131	Culver Drive	San Leandro to Main Street	73.3	73.3	73.3	0.0	1.5	No
132	Culver Drive	Harvard Avenue to University Drive	73.3	73.4	73.4	0.1	1.5	No
133	Culver Drive	Trabuco Road to Farwell Avenue	74.4	74.2	74.2	-0.2	1.5	No
134	Culver Drive	Alton Parkway to Barranca Parkway	73.2	73.2	73.2	0.0	1.5	No
135	Culver Drive	Main Street to Alton Parkway	73.1	73.1	73.1	0.0	1.5	No
136	Culver Drive	Warner Avenue to Irvine Center Drive	73.0	73.0	73.0	0.0	1.5	No
137	Culver Drive	Walnut Avenue to Scottsdale Dive	72.9	72.9	72.8	-0.1	1.5	No
138	Culver Drive	Barranca Parkway to Warner Avenue	72.8	72.8	72.9	0.1	1.5	No
139	Culver Drive	Shady Canyon Drive to Palo Verde	72.1	72.0	72.0	-0.1	1.5	No
140	Culver Drive	Deerfield Avenue to Walnut Avenue	72.6	72.5	72.5	-0.1	1.5	No
141	Culver Drive	Sandburg Way to Michelson Drive	72.5	72.5	72.5	0.0	1.5	No
142	Culver Drive	Irvine Center Drive to Deerfield Avenue	72.4	72.4	72.4	0.0	1.5	No

Table 16

143	Culver Drive	Palo Verde to Campus Drive	71.6	71.6	71.6	0.0	1.5	No
144	Culver Drive	University Drive to Sandburg Way	72.2	72.2	72.2	0.0	1.5	No
145	Culver Drive	Farwell Avenue to Bryan Avenue	73.3	73.2	73.2	-0.1	1.5	No
146	Culver Drive	Campus Drive to High School	72.1	72.1	72.1	0.0	1.5	No
147	Culver Drive	High School to Harvard Avenue	72.0	72.0	72.0	0.0	1.5	No
148	Culver Drive	Bryan Avenue to Florence	71.8	71.8	71.8	0.0	1.5	No
149	Culver Drive	Portola Parkway to Settlers	71.1	71.2	71.2	0.1	1.5	No
150	Culver Drive	Florence to Irvine Boulevard	71.7	71.7	71.7	0.0	1.5	No
151	Culver Drive	Irvine Boulevard to Viewpark	70.5	70.5	70.5	0.0	1.5	No
152	Culver Drive	Viewpark to Meadowood	70.5	70.4	70.4	-0.1	1.5	No
153	Culver Drive	Settlers to Furrow	68.3	68.5	68.6	0.3	1.5	No
154	Culver Drive	Meadowood to Portola Parkway	69.0	69.0	69.0	0.0	1.5	No
155	Discovery Drive	Irvine Center Drive to Laguna Canyon Road	63.8	65.5	65.5	1.7	3.0	No
156	Discovery Drive	Waterworks Way to Irvine Center Drive	60.7	63.6	63.6	2.9	3.0	No
157	East Yale Loop	Alton Parkway to Witherspoon	65.3	65.6	65.6	0.3	1.5	No
158	East Yale Loop	Osborn Street to Barranca Parkway	65.0	65.4	65.4	0.4	1.5	No
159	East Yale Loop	Yale Avenue to Springbrook South	64.3	65.0	65.0	0.7	3.0	No
160	East Yale Loop	Springbrook North to Alton Parkway	63.4	63.6	63.6	0.2	3.0	No
161	East Yale Loop	Woodspring to Yale Avenue	62.5	62.8	62.9	0.4	3.0	No
162	East Yale Loop	Barranca Parkway to Eastshore	62.5	62.4	62.5	0.0	3.0	No
163	Eastwood	Bryan Avenue to Monticello	60.5	60.8	60.9	0.4	3.0	No
164	Eastwood	Columbus to Bryan Avenue	58.8	58.8	58.9	0.1	5.0	No
165	El Camino Real	Jamboree Road to Alliance (SR-261 Bridge)	67.0	67.1	67.2	0.2	1.5	No
166	El Camino Real North	El Camino Real to Bryan Avenue	62.4	62.4	62.4	0.0	3.0	No
167	Fairbanks	Alton Parkway to Astor	69.7	69.8	69.9	0.2	1.5	No
168	Fairbanks	Irvine Boulevard to Alton Parkway	66.8	66.9	66.9	0.1	1.5	No
169	Fairchild Road	MacArthur Boulevard to Jamboree Road	64.0	64.0	64.0	0.0	3.0	No
170	Gateway Boulevard	Alton Parkway to Irvine Center Drive	62.8	63.5	63.5	0.7	3.0	No
171	Gateway Boulevard	Spectrum Center Drive (Fortune Drive) to Alton Parkway	61.6	62.3	62.2	0.6	3.0	No
172	Gateway Boulevard	Irvine Center Drive to Meridian	58.4	59.2	59.2	0.8	5.0	No
173	Great Park Boulevard	Sand Canyon to Ridge Valley	74.1	74.6	74.6	0.5	1.5	No
174	Great Park Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	69.7	70.3	70.4	0.7	1.5	No
175	Great Park Boulevard (EB)	Bosque to Skyhawk	68.0	69.0	69.1	1.1	1.5	No
176	Great Park Boulevard (WB)	Bosque to Skyhawk	67.6	68.4	68.4	0.8	1.5	No
177	Harvard Avenue	University Drive to Michelson Drive	71.8	72.0	72.1	0.3	1.5	No
178	Harvard Avenue	Michelson Drive to Coronado	70.2	70.4	70.5	0.3	1.5	No
179	Harvard Avenue	San Marino to Alton Parkway	70.0	70.2	70.3	0.3	1.5	No



Table 16

180	Harvard Avenue	Coronado to Main Street	70.0	70.1	70.2	0.2	1.5	No
181	Harvard Avenue	San Carlo to San Marino	69.9	70.1	70.2	0.3	1.5	No
182	Harvard Avenue	Main Street to San Carlo	69.8	70.0	70.1	0.3	1.5	No
183	Harvard Avenue	Alton Parkway to San Leon	68.8	68.8	68.6	-0.2	1.5	No
184	Harvard Avenue	San Juan to Barranca Parkway	68.6	68.8	68.7	0.1	1.5	No
185	Harvard Avenue	San Leon to San Juan	68.6	68.6	68.6	0.0	1.5	No
186	Harvard Avenue	Irvine Center Drive to Deerfield Avenue	67.4	67.5	67.5	0.1	1.5	No
187	Harvard Avenue	Deerfield Avenue to Poplar Street	67.4	67.4	67.4	0.0	1.5	No
188	Harvard Avenue	Barranca Parkway to Warner Avenue	67.9	67.9	67.9	0.0	1.5	No
189	Harvard Avenue	Bridge Road to University Drive	67.6	67.9	67.8	0.2	1.5	No
190	Harvard Avenue	Paseo Westpark to Irvine Center Drive	67.7	67.8	67.8	0.1	1.5	No
191	Harvard Avenue	Poplar Street to Walnut Avenue	68.7	68.8	68.9	0.2	1.5	No
192	Harvard Avenue	California Avenue to Berkeley Avenue	67.0	67.4	67.3	0.3	1.5	No
193	Harvard Avenue	Culver Drive to California Avenue	66.9	67.3	67.3	0.4	1.5	No
194	Harvard Avenue	Berkeley to Bridge Road	67.0	67.2	67.2	0.2	1.5	No
195	Harvard Avenue	Warner Avenue to Paseo Westpark	66.8	66.7	66.8	0.0	1.5	No
196	Hicks Canyon Drive	Delamesa to Yale Avenue	58.4	58.2	58.2	-0.2	5.0	No
197	Hornet (5th St)	Ridge Valley (O Street) to Bosque	57.5	57.5	57.5	0.0	5.0	No
198	Hubble	Irvine Center Drive to Bunsen	55.7	55.9	56.1	0.4	5.0	No
199	Irvine Boulevard	SR-133 NB Off- Ramp to Ridge Valley (O Street)	72.3	72.2	72.3	0.0	1.5	No
200	Irvine Boulevard	SR-133 SB Off-Ramp to SR-133 NB Off-Ramp	72.2	72.2	72.2	0.0	1.5	No
201	Irvine Boulevard	Sand Canyon to SR-133 SB Off-Ramp	73.1	73.0	73.0	-0.1	1.5	No
202	Irvine Boulevard	Merit to Alton	71.6	71.6	71.6	0.0	1.5	No
203	Irvine Boulevard	Journey to Sand Canyon Avenue	71.6	71.6	71.7	0.1	1.5	No
204	Irvine Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	71.2	71.1	71.2	0.0	1.5	No
205	Irvine Boulevard	Pusan Way to Chinon (B Street)	71.0	71.0	71.0	0.0	1.5	No
206	Irvine Boulevard	Palo Lado to Yale Avenue	70.6	71.2	71.3	0.7	1.5	No
207	Irvine Boulevard	Culver Drive to Palo Lado	70.6	71.2	71.3	0.7	1.5	No
208	Irvine Boulevard	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.6	71.1	71.1	0.5	1.5	No
209	Irvine Boulevard	Old Myford Road to Market Place	70.5	71.1	71.2	0.7	1.5	No
210	Irvine Boulevard	Bosque (LY Street) to Modjeska	70.7	71.1	71.2	0.5	1.5	No
211	Irvine Boulevard	Jamboree Road to Old Myford Road	70.5	71.0	71.1	0.6	1.5	No
212	Irvine Boulevard	Market Place to SR-261 SB Off-Ramp	70.4	71.0	71.1	0.7	1.5	No
213	Irvine Boulevard	Jeffrey Road to Groveland	70.8	70.9	71.1	0.3	1.5	No
214	Irvine Boulevard	Bake Parkway to Lake Forest Drive	70.9	70.5	70.6	-0.3	1.5	No
215	Irvine Boulevard	Independence Way (The Groves)/ The Groves to Jeffrey Road	70.5	70.7	70.8	0.3	1.5	No
216	Irvine Boulevard	Chinon (B Street) to Merit	70.5	70.5	70.5	0.0	1.5	No

Table 16

217	Irvine Boulevard	SR-261 NB Off-Ramp to Central Park	70.2	70.6	70.7	0.5	1.5	No
218	Irvine Boulevard	Pueblo Norte to Independence Way (The Groves)/ Parkwood	70.1	70.5	70.6	0.5	1.5	No
219	Irvine Boulevard	Yale Avenue to Pueblo Norte	70.1	70.4	70.5	0.4	1.5	No
220	Irvine Boulevard	Modjeska to Pusan Way	70.2	70.2	70.2	0.0	1.5	No
221	Irvine Boulevard	Central Park Avenue to Culver Drive	69.6	70.0	70.0	0.4	1.5	No
222	Irvine Boulevard	Parker to Bake Parkway	69.6	69.6	69.7	0.1	1.5	No
223	Irvine Boulevard	Alton Parkway to Fairbanks	68.6	68.6	68.6	0.0	1.5	No
224	Irvine Center Drive	Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp	72.5	72.7	72.8	0.3	1.5	No
225	Irvine Center Drive	Orange Tree to Valley Oak Drive	71.4	72.0	72.0	0.6	1.5	No
226	Irvine Center Drive	I-405 SB Off-Ramp to Research	72.1	72.2	72.3	0.2	1.5	No
227	Irvine Center Drive	Irvine Valley College to Orange Tree	71.3	71.9	71.9	0.6	1.5	No
228	Irvine Center Drive	Fontaine Avenue to Jeffrey Road	71.0	71.7	71.7	0.7	1.5	No
229	Irvine Center Drive	Culver Drive to Deerwood	71.0	71.6	71.6	0.6	1.5	No
230	Irvine Center Drive	Deerwood to Yale Avenue	71.0	71.6	71.6	0.6	1.5	No
231	Irvine Center Drive	Yale Avenue to Fontaine Avenue	70.9	71.6	71.7	0.8	1.5	No
232	Irvine Center Drive	Jeffrey Road to Irvine Valley College	71.1	71.5	71.5	0.4	1.5	No
233	Irvine Center Drive	Alton Parkway to Spectrum	70.4	71.3	71.4	1.0	1.5	No
234	Irvine Center Drive	Spectrum to Pacifica	70.3	71.3	71.3	1.0	1.5	No
235	Irvine Center Drive	Hearthstone to Culver Drive	70.6	71.0	71.0	0.4	1.5	No
236	Irvine Center Drive	Charter to Barranca Parkway	70.2	70.9	71.0	0.8	1.5	No
237	Irvine Center Drive	Jamboree Road to Harvard Avenue	70.3	70.6	70.6	0.3	1.5	No
238	Irvine Center Drive	Pacifica to Entertainment (Enterprise/Fortune)	70.3	70.7	70.7	0.4	1.5	No
239	Irvine Center Drive	Valley Oak Drive to Sand Canyon Avenue	70.0	70.7	70.7	0.7	1.5	No
240	Irvine Center Drive	Harvard Avenue to Hearthstone	70.0	70.3	70.3	0.3	1.5	No
241	Irvine Center Drive	Research to Hubble	69.8	69.8	70.0	0.2	1.5	No
242	Irvine Center Drive	Barranca Parkway to Gateway Boulevard	69.4	70.1	70.2	0.8	1.5	No
243	Irvine Center Drive	Bake Parkway to Muller	69.9	69.7	69.8	-0.1	1.5	No
244	Irvine Center Drive	Discovery to Charter	69.3	70.2	70.2	0.9	1.5	No
245	Irvine Center Drive	Hubble to Bake Parkway	69.7	69.5	69.6	-0.1	1.5	No
246	Irvine Center Drive	Muller to Tesla	69.5	69.3	69.4	-0.1	1.5	No
247	Irvine Center Drive	Sand Canyon Avenue to Odyssey	69.0	69.4	69.4	0.4	1.5	No
248	Irvine Center Drive	Tesla to Scientific Way	69.2	68.9	69.1	-0.1	1.5	No
249	Irvine Center Drive	Scientific Way to Lake Forest Drive	68.9	68.7	68.9	0.0	1.5	No
250	Irvine Center Drive	Gateway Boulevard to Alton Parkway	68.3	68.8	68.9	0.6	1.5	No
251	Irvine Center Drive	Laguna Canyon Road to Discovery	68.2	68.8	68.9	0.7	1.5	No
252	Irvine Center Drive	Odyssey to Laguna Canyon Road	68.3	68.8	68.9	0.6	1.5	No
253	Irvine Center Drive (Edinger)	Redhill Avenue to Jamboree Road	70.8	71.0	71.1	0.3	1.5	No

Table 16

254	Jamboree Road	I-5 SB Off-Ramp to I-5 NB Off-Ramp	74.5	74.5	74.5	0.0	1.5	No
255	Jamboree Road	I-405 SB Off-Ramp to I-405 NB Off Ramp	75.4	75.6	75.7	0.3	1.5	No
256	Jamboree Road	Walnut Avenue to Michelle Drive	73.8	73.9	73.9	0.1	1.5	No
257	Jamboree Road	I-405 NB Off-Ramp to Main Street	76.9	77.0	77.0	0.1	1.5	No
258	Jamboree Road	Michelle Drive to I-5 SB Off-Ramp	73.6	73.6	73.6	0.0	1.5	No
259	Jamboree Road	Main Street to Kelvin Avenue	76.2	76.4	76.4	0.2	1.5	No
260	Jamboree Road	Michelson Drive to I-405 SB Off-Ramp	74.2	74.4	74.4	0.2	1.5	No
261	Jamboree Road	Kelvin Avenue to McGaw Avenue	75.8	76.0	76.1	0.3	1.5	No
262	Jamboree Road	McGaw Avenue to Alton Parkway	75.8	76.0	76.0	0.2	1.5	No
263	Jamboree Road	Birch Street to Campus Drive	72.6	73.0	73.1	0.5	1.5	No
264	Jamboree Road	Dupont Drive to Michelson Drive	73.5	73.9	74.0	0.5	1.5	No
265	Jamboree Road	Alton Parkway to Beckman	75.4	75.6	75.7	0.3	1.5	No
266	Jamboree Road	Fairchild Road to Birch Street	73.2	73.5	73.6	0.4	1.5	No
267	Jamboree Road	Beckman to Barranca Parkway	75.2	75.3	75.3	0.1	1.5	No
268	Jamboree Road	I-5 NB Off-Ramp to El Camino Real	75.1	75.1	75.1	0.0	1.5	No
269	Jamboree Road	Campus Drive to Dupont Drive	72.7	73.2	73.2	0.5	1.5	No
270	Jamboree Road	El Camino Real to West Drive	75.1	75.0	74.9	-0.2	1.5	No
271	Jamboree Road	West Drive to Bryan Avenue	75.1	74.9	74.9	-0.2	1.5	No
272	Jamboree Road	Bryan Avenue to Irvine Boulevard	74.8	74.6	74.6	-0.2	1.5	No
273	Jamboree Road	Koll Center to Fairchild Road	72.5	72.8	72.9	0.4	1.5	No
274	Jamboree Road	MacArthur Boulevard to Koll Center	72.5	72.8	72.8	0.3	1.5	No
275	Jamboree Road	Irvine Boulevard to Portola Parkway	70.8	70.7	70.7	-0.1	1.5	No
276	Jamboree Road	Warner Avenue to Edinger Avenue	79.1	79.2	79.2	0.1	1.5	No
277	Jamboree Road	Barranca Parkway to Warner Avenue	78.2	78.3	78.4	0.2	1.5	No
278	Jamboree Road	Edinger Avenue to Walnut Avenue	77.9	78.0	78.0	0.1	1.5	No
279	Jeffrey Road	Walnut Avenue to I-5 NB Off-Ramp	71.3	71.4	71.4	0.1	1.5	No
280	Jeffrey Road	I-5 NB Off-Ramp to Roosevelt	72.2	72.3	72.3	0.1	1.5	No
281	Jeffrey Road	Poplar (Meadows) to Walnut Avenue	70.8	70.9	71.0	0.2	1.5	No
282	Jeffrey Road	Alton Parkway to Barranca Parkway	70.5	70.9	70.9	0.4	1.5	No
283	Jeffrey Road	Irvine Center Drive to Poplar (Meadows)	70.6	70.7	70.8	0.2	1.5	No
284	Jeffrey Road	I-405 NB Off-Ramp to Quail Creek	70.5	70.9	71.0	0.5	1.5	No
285	Jeffrey Road	Barranca Parkway to Irvine Valley College	70.4	70.7	70.7	0.3	1.5	No
286	Jeffrey Road	Quail Creek to Alton Parkway	70.5	70.8	70.8	0.3	1.5	No
287	Jeffrey Road	Irvine Valley College to Irvine Center Drive	70.3	70.5	70.5	0.2	1.5	No
288	Jeffrey Road	Trabuco Road to Hideaway	69.7	69.6	69.7	0.0	1.5	No
289	Jeffrey Road	Hideaway to Bryan Avenue	69.7	69.6	69.7	0.0	1.5	No
290	Jeffrey Road	Roosevelt to Grove	70.4	70.4	70.4	0.0	1.5	No

Table 16

291	Jeffrey Road	Grove to Trabuco Road	70.3	70.2	70.2	-0.1	1.5	No
292	Jeffrey Road	Bryan Avenue to Irvine Boulevard	68.5	68.5	68.6	0.1	1.5	No
293	Jeffrey Road	Encore to Portola Parkway	66.1	65.8	65.5	-0.6	1.5	No
294	Jeffrey Road	Irvine Boulevard to Encore	65.6	65.5	65.4	-0.2	1.5	No
295	Jeronimo Road	Goodyear to Bake Parkway	64.8	64.6	64.6	-0.2	3.0	No
296	Jeronimo Road	Alton Parkway to Goodyear	64.7	64.3	64.3	-0.4	3.0	No
297	Laguna Canyon Road	Old Laguna Canyon Road to Lake Forest Drive	73.3	73.3	73.4	0.1	1.5	No
298	Laguna Canyon Road	Laguna Canyon Freeway to Quail Hill Parkway	70.0	69.9	70.0	0.0	1.5	No
299	Laguna Canyon Road	Discovery to Sand Canyon Avenue	68.1	69.5	69.5	1.4	1.5	No
300	Laguna Canyon Road	I-405 Overcrossing to Pasteur	68.0	67.9	68.0	0.0	1.5	No
301	Laguna Canyon Road	Irvine Center Drive to Discovery	67.3	69.0	69.0	1.7	1.5	Yes
302	Laguna Canyon Road	Quail Hill Parkway to I-405 Overcrossing	68.0	67.9	68.0	0.0	1.5	No
303	Laguna Canyon Road	Pasteur to Alton Parkway	66.9	67.0	67.1	0.2	1.5	No
304	Laguna Canyon Road	Waterworks to Irvine Center Drive	66.2	67.5	67.5	1.3	1.5	No
305	Laguna Canyon Road	Alton Parkway to Barranca Parkway	66.0	66.3	66.4	0.4	1.5	No
306	Laguna Canyon Road	Barranca Parkway to Waterworks	65.6	66.2	66.3	0.7	1.5	No
307	Lake Forest Drive	Hidden Canyon to Laguna Canyon Road	69.2	69.4	69.6	0.4	1.5	No
308	Lake Forest Drive	Bake Parkway to Hidden Canyon (Romano)	69.2	69.3	69.5	0.3	1.5	No
309	Lake Forest Drive	Tesla to Bake Parkway	66.2	66.4	66.6	0.4	1.5	No
310	Lake Road	Alton Parkway to Barranca Parkway	59.2	59.2	59.2	0.0	5.0	No
311	Lynx	Irvine Boulevard to Astor	53.5	53.2	53.2	-0.3	5.0	No
312	MacArthur Boulevard	I-405 SB Off-Ramp to Michelson Drive	76.4	76.7	76.8	0.4	1.5	No
313	MacArthur Boulevard	Main Street to I-405 NB Off-Ramp	76.5	76.7	76.7	0.2	1.5	No
314	MacArthur Boulevard	I-405 NB Off-Ramp and I-405 SB Off-Ramp	76.4	76.6	76.6	0.2	1.5	No
315	MacArthur Boulevard	Jamboree Road to Fairchild Road	69.9	69.9	69.9	0.0	1.5	No
316	MacArthur Boulevard	Fairchild Road to University Drive	69.8	69.8	69.8	0.0	1.5	No
317	MacArthur Boulevard	Fitch to Red Hill Avenue	70.5	70.5	70.5	0.0	1.5	No
318	MacArthur Boulevard	Michelson Drive to Douglas	71.8	72.2	72.3	0.5	1.5	No
319	MacArthur Boulevard	Douglas to Campus Drive	71.9	72.1	72.3	0.4	1.5	No
320	MacArthur Boulevard	Skypark to Main Street	69.6	69.5	69.5	-0.1	1.5	No
321	MacArthur Boulevard	Redhill Avenue to Skypark	68.5	68.3	68.4	-0.1	1.5	No
322	MacArthur Boulevard	Birch Street to Jamboree Road	66.8	67.1	67.2	0.4	1.5	No
323	MacArthur Boulevard	Campus Drive to Birch Street	69.1	69.3	69.5	0.4	1.5	No
324	Main Street	Gillette Avenue to Von Karman Avenue	70.2	70.9	70.9	0.7	1.5	No
325	Main Street	MacArthur Boulevard to Mercantile	69.9	70.3	70.3	0.4	1.5	No
326	Main Street	Executive Park to MacArthur Boulevard	68.2	68.4	68.5	0.3	1.5	No
327	Main Street	Von Karman Avenue to Cartwright	67.8	68.5	68.5	0.7	1.5	No

Table 16

328	Main Street	McDermott to Red Hill Avenue	68.0	68.1	68.1	0.1	1.5	No
329	Main Street	Red Hill Avenue to Executive Circle	67.9	68.0	68.0	0.1	1.5	No
330	Main Street	Jamboree Road to Union	67.7	67.8	67.9	0.2	1.5	No
331	Main Street	Culver Drive to West Yale Loop	67.2	67.2	67.2	0.0	1.5	No
332	Main Street	Siglo to Jamboree Road	67.4	67.7	67.7	0.3	1.5	No
333	Main Street	Veneto to Harvard Avenue	67.6	67.5	67.6	0.0	1.5	No
334	Main Street	Paseo Westpark to Culver Drive	66.4	66.3	66.4	0.0	1.5	No
335	Main Street	Harvard Avenue to San Mateo	66.3	66.3	66.3	0.0	1.5	No
336	Marine Way	Sand Canyon Avenue to Ridge Valley (O Street)	72.1	72.3	72.3	0.2	1.5	No
337	Marine Way	Alton Parkway to Bake Parkway	69.0	69.4	69.5	0.5	1.5	No
338	Marine Way	Lynx to Barranca Parkway	69.4	69.3	69.3	-0.1	1.5	No
339	Marine Way	County Access to Treble	65.3	68.5	68.5	3.2	1.5	Yes
340	Marine Way	Ridge Valley (O Street) to Skyhawk	67.6	68.3	68.3	0.7	1.5	No
341	Marine Way	Skyhawk to County Access	64.9	67.4	67.4	2.5	3.0	No
342	Marine Way	Barranca Parkway to Alton Parkway	66.3	66.8	66.8	0.5	1.5	No
343	Marine Way	Treble to Lynx	67.1	66.5	66.6	-0.5	1.5	No
344	McGaw Avenue	Von Karman Avenue to Jamboree Road	63.6	64.5	64.5	0.9	3.0	No
345	McGaw Avenue	Red Hill Avenue to Von Karman Avenue	63.6	64.3	64.4	0.8	3.0	No
346	McGaw Avenue	Daimler to Red Hill Avenue	62.4	62.4	62.4	0.0	3.0	No
347	McGaw Avenue	Jamboree Road to Murphy Avenue	59.2	59.6	59.5	0.3	5.0	No
348	Meadowood	Culver Drive to Canyonwood	59.8	59.8	59.6	-0.2	5.0	No
349	Meridian	Spectrum to Alton Parkway	54.9	55.6	55.7	0.8	5.0	No
350	Meridian	Alton Parkway to Gateway Boulevard	54.1	54.7	54.8	0.7	5.0	No
351	Merit	Irvine Boulevard to Cadence	57.3	58.0	58.0	0.7	5.0	No
352	Michelson Drive	Riparian to Harvard Avenue	67.8	68.3	68.3	0.5	1.5	No
353	Michelson Drive	Almond Tree Lane to Yale Avenue	66.7	67.2	67.2	0.5	1.5	No
354	Michelson Drive	Von Karman Avenue to Obsidian	67.8	68.2	68.1	0.3	1.5	No
355	Michelson Drive	Parkside to Culver Drive	66.8	67.8	67.8	1.0	1.5	No
356	Michelson Drive	Gillman to Seton/Sandburg Way	66.5	66.9	66.9	0.4	1.5	No
357	Michelson Drive	Carlson to Prince	67.0	67.3	67.3	0.3	1.5	No
358	Michelson Drive	MacArthur Boulevard to Dupont Drive	67.0	67.5	67.5	0.5	1.5	No
359	Michelson Drive	Harvard Avenue to Parkside	66.8	66.8	66.8	0.0	1.5	No
360	Michelson Drive	Bixby to Von Karman Avenue	66.3	66.8	66.9	0.6	1.5	No
361	Michelson Drive	Jamboree Road to Carlson	69.5	69.6	69.6	0.1	1.5	No
362	Michelson Drive	Teller to Jamboree Road	69.5	69.6	69.6	0.1	1.5	No
363	Michelson Drive	Jordan East to University Drive	66.8	67.1	67.1	0.3	1.5	No
364	Michelson Drive	Culver Drive to Angell	66.1	66.3	66.3	0.2	1.5	No

Table 16

365	Modjeska (A Street)	Portola Springs to Irvine Boulevard	71.7	71.7	71.7	0.0	1.5	No
366	Modjeska (A Street)	South of Irvine Boulevard	60.6	61.1	61.0	0.4	3.0	No
367	Muirlands Boulevard	Bake Parkway to City Limits	67.2	67.2	67.3	0.1	1.5	No
368	Muirlands Boulevard	Alton Parkway to Sterling	66.3	66.3	66.2	-0.1	1.5	No
369	Muirlands Boulevard	Wrigley to Bake Parkway	66.2	66.3	66.3	0.1	1.5	No
370	Newport Coast Drive	SR-73 NB Off-Ramp to Turtle Ridge	66.7	66.6	66.7	0.0	1.5	No
371	Newport Coast Drive	Turtle Crest to Bonita Canyon Drive	65.2	65.1	65.1	-0.1	1.5	No
372	Nightmist	Sand Canyon Avenue to Tulip (Road C)	62.1	61.8	61.7	-0.4	3.0	No
373	Northwood	Yale Avenue to Savannah	62.4	62.5	62.5	0.1	3.0	No
374	Northwood	Goldrush to Yale Avenue	61.3	61.5	61.6	0.3	3.0	No
375	Oak Canyon Drive	Valley Oak Drive to Sand Canyon Avenue	67.4	69.7	69.7	2.3	1.5	Yes
376	Pacifica	Gateway to Barranca Parkway	64.6	65.3	65.3	0.7	3.0	No
377	Pacifica	Alton Parkway to Gateway	63.2	64.1	64.2	1.0	3.0	No
378	Pacifica	Irvine Center Drive to Fortune Drive (Spectrum Center Drive)	63.2	62.7	62.7	-0.5	3.0	No
379	Pacifica	Meridian to Alton Parkway	60.0	60.9	60.9	0.9	1.5	No
380	Park Place	Christamon South to Yale Avenue	57.0	57.0	57.0	0.0	5.0	No
381	Portola Parkway	Bee Canyon Access Road to Sand Canyon Avenue	71.3	71.7	71.8	0.5	1.5	No
382	Portola Parkway	Jeffrey Road to Bee Canyon Access Road	71.3	71.7	71.8	0.5	1.5	No
383	Portola Parkway	Arrowhead to Ridge Valley Parkway	71.3	71.4	71.5	0.2	1.5	No
384	Portola Parkway	Sand Canyon Avenue to Arrowhead	70.9	71.1	71.1	0.2	1.5	No
385	Portola Parkway	Portola Springs to SR-241 SB Off-Ramp	70.0	70.1	70.1	0.1	1.5	No
386	Portola Parkway	Gatepark to Culver Drive	70.3	70.7	70.9	0.6	1.5	No
387	Portola Parkway	ETC-6 (SR-261) NB Off-Ramp to Gatepark	70.2	70.7	70.8	0.6	1.5	No
388	Portola Parkway	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.1	70.6	70.7	0.6	1.5	No
389	Portola Parkway	Jamboree Road to Bellevue	70.1	70.5	70.6	0.5	1.5	No
390	Portola Parkway	Bellevue to ETC-6 (SR-261) SB Off-Ramp	70.0	70.5	70.6	0.6	1.5	No
391	Portola Parkway	Yale Avenue to Jeffrey Road	69.8	70.2	70.4	0.6	1.5	No
392	Portola Parkway	Culver Drive to Yale Avenue	69.4	69.7	69.8	0.4	1.5	No
393	Portola Parkway	Silverado to Portola Springs	68.5	68.6	68.7	0.2	1.5	No
394	Pusan	Irvine Boulevard to Cadence	56.1	56.2	56.1	0.0	5.0	No
395	Quail Hill Parkway	Shady Canyon Drive to Passage	67.6	67.5	67.5	-0.1	1.5	No
396	Quail Hill Parkway	East Knollcrest to Laguna Canyon Road	65.6	65.4	65.4	-0.2	1.5	No
397	Quassar Drive (Spectrum)	Irvine Center Drive to Spectrum Center Drive (Fortune)	54.9	54.9	55.0	0.1	5.0	No
398	Red Hill Avenue	MacArthur Boulevard to McGaw Avenue	71.3	71.6	71.7	0.4	1.5	No
399	Red Hill Avenue	I-405 Over Crossing to Main Street	69.9	70.2	70.3	0.4	1.5	No
400	Red Hill Avenue	Alton Parkway to Deere Avenue	69.9	70.1	70.1	0.2	1.5	No
401	Red Hill Avenue	McGaw Avenue to Alton Parkway	69.7	69.9	70.1	0.4	1.5	No

Table 16

402	Red Hill Avenue	Deere Avenue to Barranca Parkway	69.7	69.8	69.9	0.2	1.5	No
403	Red Hill Avenue	Skypark East to MacArthur Boulevard	71.0	71.4	71.5	0.5	1.5	No
404	Red Hill Avenue	Main Street to Skypark East	70.4	70.8	70.9	0.5	1.5	No
405	Research Drive	Hubble to Bake Parkway	69.5	69.6	69.7	0.2	1.5	No
406	Research Drive	Scientific to Lake Forest Drive	67.6	67.4	67.8	0.2	1.5	No
407	Research Drive	Bake Parkway to Muller	66.5	66.7	66.8	0.3	1.5	No
408	Research Drive	Irvine Center Drive to Bunsen	65.5	65.7	65.8	0.3	1.5	No
409	Ridge Valley (O Street)	Irvine Boulevard to Trabuco Road (Great Park Boulevard)	67.4	67.3	67.3	-0.1	1.5	No
410	Ridge Valley (O Street)	Portola Parkway to Irvine Boulevard	66.5	66.4	66.4	-0.1	1.5	No
411	Ridge Valley (O Street)	Trabuco Road (Great Park Boulevard) to Marine Way	66.0	66.0	66.0	0.0	1.5	No
412	Ridge Valley (O Street)	Ranchland to Portola Parkway	58.1	58.1	58.1	0.0	5.0	No
413	Ridgeline Drive	Concordia East to University Drive	68.6	68.8	68.8	0.2	1.5	No
414	Ridgeline Drive	Turtle Rock Drive to San Simeon	68.2	68.5	68.5	0.3	1.5	No
415	Rockfield Avenue	Whatney to McLaren	67.5	67.7	67.8	0.3	1.5	No
416	Rockfield Avenue	Bake Parkway to Whatney	63.8	64.3	64.4	0.6	3.0	No
417	Rockfield Avenue	Thomas to Bake Parkway	62.6	63.1	63.2	0.6	3.0	No
418	Roosevelt	Jeffrey Road to Vision	66.1	66.6	66.7	0.6	1.5	No
419	Roosevelt	Yale Avenue to Van Buren	68.1	68.3	68.3	0.2	1.5	No
420	Roosevelt	Vision to Bay Tree	65.9	66.3	66.5	0.6	1.5	No
421	Roosevelt	Nimitz to Jeffrey Road	65.8	65.9	65.9	0.1	1.5	No
422	Roosevelt	Tulip (Road C) to Sand Canyon Avenue	65.6	65.6	65.7	0.1	1.5	No
423	Royal Oak	Alton Parkway to Eaglecreek	64.0	64.0	64.0	0.0	3.0	No
424	Sand Canyon Avenue	Oak Canyon Drive to Burt Road	71.9	72.2	72.2	0.3	1.5	No
425	Sand Canyon Avenue	Irvine Center Drive to Oak Canyon Drive	71.6	72.0	72.0	0.4	1.5	No
426	Sand Canyon Avenue	I-405 NB Off-Ramp to Alton Parkway	74.4	74.7	74.7	0.3	1.5	No
427	Sand Canyon Avenue	Burt Road to I-5 SB Off-Ramp	72.6	72.7	72.8	0.2	1.5	No
428	Sand Canyon Avenue	Marine to I-5 NB Off-Ramp	74.6	74.6	74.8	0.2	1.5	No
429	Sand Canyon Avenue	Trabuco Road to Towngate	71.3	71.0	71.2	-0.1	1.5	No
430	Sand Canyon Avenue	Barranca Parkway to Waterworks	70.6	70.9	71.0	0.4	1.5	No
431	Sand Canyon Avenue	I-5 SB Off-Ramp to Marine	73.8	73.9	74.0	0.2	1.5	No
432	Sand Canyon Avenue	Hospital to Barranca Parkway	70.4	70.8	70.9	0.5	1.5	No
433	Sand Canyon Avenue	Nightmist to Roosevelt	73.4	73.5	73.6	0.2	1.5	No
434	Sand Canyon Avenue	I-405 SB Off-Ramp to I-405 NB Off-Ramp	73.4	73.6	73.6	0.2	1.5	No
435	Sand Canyon Avenue	I-5 NB Off-Ramp to Nightmist	73.5	73.5	73.6	0.1	1.5	No
436	Sand Canyon Avenue	Towngate to Irvine Boulevard	70.6	70.3	70.6	0.0	1.5	No
437	Sand Canyon Avenue	Waterworks to Irvine Center Drive	70.0	70.2	70.3	0.3	1.5	No
438	Sand Canyon Avenue	Irvine Boulevard to Portola Parkway	69.3	69.2	70.3	1.0	1.5	No

Table 16

439	Sand Canyon Avenue	Roosevelt to Trabuco Road	72.8	72.8	72.8	0.0	1.5	No
440	Sand Canyon Avenue	Alton Parkway to Hospital	70.5	70.8	70.9	0.4	1.5	No
441	Sand Canyon/Shady Canyon	Quail Hill Parkway to I-405 SB Ramps	71.6	71.8	71.8	0.2	1.5	No
442	Scientific Way	Irvine Center Drive to Wald	54.9	55.0	55.0	0.1	5.0	No
443	Shady Canyon Drive	Culver Drive/Bonita Canyon Drive to Cloverfield	68.8	69.3	69.4	0.6	1.5	No
444	Shady Canyon Drive	Bommer Canyon Road to Sunnyhill	67.3	67.7	67.8	0.5	1.5	No
445	Skyhawk	Great Park Boulevard to Marine Way	60.2	59.6	59.5	-0.7	3.0	No
446	Southwood	Yale Avenue to Colt	60.5	60.6	60.6	0.1	3.0	No
447	Southwood	Challenger to Yale Avenue	60.3	60.4	60.4	0.1	3.0	No
448	Spectrum Center Drive (Fortune Drive)	Pacifica to Quassar Drive (Spectrum )	61.9	62.0	61.9	0.0	3.0	No
449	Spectrum Center Drive (Fortune Drive)	Quassar Drive (Spectrum ) to Gatewayb	62.4	62.5	62.5	0.1	3.0	No
450	Sunnyhill	Shady Canyon Drive to Turtle Rock Drive	57.0	57.7	57.8	0.8	5.0	No
451	Technology Drive	Barranca Parkway to Alton Parkway	69.9	70.8	70.8	0.9	1.5	No
452	Technology Drive	Old Laguna Canyon Road to I-5/SR-133 Undercrossing	67.1	69.6	69.6	2.5	1.5	Yes
453	Technology Drive	I-5/SR-133 to Barranca Parkway	66.1	69.4	69.4	3.3	1.5	Yes
454	Technology Drive	Ada to Alton Parkway	59.9	63.7	63.7	3.8	5.0	No
455	Toledo Way	Bake Parkway to City Limits	65.8	65.6	65.6	-0.2	1.5	No
456	Toledo Way	Goodyear to Bake Parkway	64.9	64.7	64.7	-0.2	3.0	No
457	Toledo Way	Alton Parkway to Parker	64.5	64.5	64.5	0.0	3.0	No
458	Trabuco Road	Keystone to Sand Canyon Avenue	67.0	67.2	67.3	0.3	1.5	No
459	Trabuco Road	Jeffrey Road to Keystone	66.9	67.1	67.1	0.2	1.5	No
460	Trabuco Road	Culver Drive to I-5 NB Off-Ramp	66.6	66.8	66.9	0.3	1.5	No
461	Trabuco Road	Monroe to Yale Avenue	66.5	66.8	66.9	0.4	1.5	No
462	Trabuco Road	I-5 NB Off-Ramp to Monroe	66.5	66.7	66.8	0.3	1.5	No
463	Trabuco Road	Yale Avenue to Remington	66.0	66.4	66.5	0.5	1.5	No
464	Trabuco Road	Remington to Jeffrey Road	66.0	66.1	66.2	0.2	1.5	No
465	Turtle Ridge Drive	Federation Way to Bonita Canyon	68.8	68.7	68.7	-0.1	1.5	No
466	Turtle Rock Drive	Ridgeline to Willowleaf	67.5	67.9	67.9	0.4	1.5	No
467	Turtle Rock Drive	Silkwood to Sunnyhill	67.4	67.8	67.8	0.4	1.5	No
468	Turtle Rock Drive	Canyon Park to Ridgeline	66.8	67.1	67.1	0.3	1.5	No
469	Turtle Rock Drive	Sunnyhill to Southernwood	64.0	64.0	64.0	0.0	3.0	No
470	Turtle Rock Drive	Campus Drive to Hillgate	64.0	64.1	64.2	0.2	3.0	No
471	Turtle Rock Drive	Paseo Segovia to Campus Drive	65.4	65.5	65.4	0.0	1.5	No
472	University Drive	Golden Glow to Yale Avenue	72.6	73.0	73.1	0.5	1.5	No
473	University Drive	Ridgeline to Michelson Drive	72.3	72.6	72.6	0.3	1.5	No
474	University Drive	Culver Drive to Golden Glow	72.5	72.9	72.9	0.4	1.5	No
475	University Drive	Yale Avenue to Ridgeline	72.2	72.4	72.4	0.2	1.5	No



Table 16

476	University Drive	Michelson Drive to I-405 SB Off-Ramp	72.4	72.7	72.8	0.4	1.5	No
477	University Drive	Mesa to Campus Drive	74.2	74.5	74.6	0.4	1.5	No
478	University Drive	MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	74.2	74.4	74.7	0.5	1.5	No
479	University Drive	California Avenue to Mesa	74.1	74.4	74.5	0.4	1.5	No
480	University Drive	Campus Drive to Harvard Avenue	70.3	70.7	70.8	0.5	1.5	No
481	University Drive	SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	71.3	71.6	71.8	0.5	1.5	No
482	University Drive	SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps	70.0	70.2	70.4	0.4	1.5	No
483	University Drive	San Joaquin to Culver Drive	69.4	69.8	69.9	0.5	1.5	No
484	University Drive	Harvard Avenue to San Joaquin	69.4	69.8	69.9	0.5	1.5	No
485	Valley Oak Drive	Hawkcreek to Barranca Parkway	68.0	68.1	68.1	0.1	1.5	No
486	Valley Oak Drive	Irvine Center Drive to Oak Canyon Drive	67.6	69.6	69.5	1.9	1.5	Yes
487	Valley Oak Drive	Barranca Parkway to Irvine Center Drive	65.7	67.1	67.2	1.5	1.5	Yes
488	Valley Oak Drive	Alton Parkway to Hawkcreek	65.0	64.9	64.9	-0.1	1.5	No
489	Von Karman Avenue	Marriott to Morse Avenue	70.6	71.0	71.0	0.4	1.5	No
490	Von Karman Avenue	Michelson Drive to Quartz	70.4	70.9	70.9	0.5	1.5	No
491	Von Karman Avenue	McGaw Avenue to Alton Parkway	70.1	70.8	70.8	0.7	1.5	No
492	Von Karman Avenue	Alton Parkway to Barranca Parkway	69.7	70.4	70.4	0.7	1.5	No
493	Von Karman Avenue	Main Street to Anchor	69.9	70.7	70.7	0.8	1.5	No
494	Von Karman Avenue	Anchor to McGaw Avenue	69.9	70.5	70.6	0.7	1.5	No
495	Von Karman Avenue	Morse to Main Street	69.9	70.3	70.3	0.4	1.5	No
496	Von Karman Avenue	Martin to Dupont Drive	69.2	69.6	69.7	0.5	1.5	No
497	Von Karman Avenue	Campus Drive to Martin	69.2	69.5	69.6	0.4	1.5	No
498	Von Karman Avenue	Dupont Drive to Michelson Drive	69.2	69.5	69.6	0.4	1.5	No
499	Walnut Avenue	Jeffrey Road to I-5 SB Off-Ramp	70.5	70.9	71.0	0.5	1.5	No
500	Walnut Avenue	Myford Road to Jamboree Road SB Off-Ramp	68.9	69.1	69.2	0.3	1.5	No
501	Walnut Avenue	The Mall Street to Culver Drive	68.5	68.8	68.9	0.4	1.5	No
502	Walnut Avenue	Harvard Avenue to The Mall Street	68.4	68.8	68.8	0.4	1.5	No
503	Walnut Avenue	Franciscan Street to Ravenwood Street	68.1	68.5	68.6	0.5	1.5	No
504	Walnut Avenue	Ravenwood Street to Yale Avenue	68.1	68.5	68.5	0.4	1.5	No
505	Walnut Avenue	Culver Drive to Franciscan Street	68.1	68.4	68.4	0.3	1.5	No
506	Walnut Avenue	Peters Canyon Road to Harvard Avenue	67.6	68.0	68.1	0.5	1.5	No
507	Walnut Avenue	Jamboree Road NB Off-Ramp to Peters Canyon Road	67.5	67.9	67.9	0.4	1.5	No
508	Walnut Avenue	Yale Avenue to Kazan Street	67.0	67.3	67.3	0.3	1.5	No
509	Walnut Avenue	Wisteria to Jeffrey Road	67.0	67.2	67.2	0.2	1.5	No
510	Warner Avenue	Jamboree Road SB Off-ramp to Construction North	70.1	70.2	70.1	0.0	1.5	No
511	Warner Avenue	Construction North to Harvard Avenue	68.4	68.6	68.6	0.2	1.5	No
512	Warner Avenue	Harvard Avenue to Paseo Westpark	66.8	67.1	67.1	0.3	1.5	No

Table 16

513	Warner Avenue	Santa Ynez to Culver Drive	65.6	66.2	66.2	0.6	1.5	No
514	Warner Avenue	Culver Drive to West Yale Loop	65.1	65.8	65.9	0.8	1.5	No
515	West Yale Loop	Alton Parkway to Blue Lake North	64.0	64.0	64.0	0.0	3.0	No
516	West Yale Loop	Eagle Run to Main Street	63.8	63.9	63.8	0.0	3.0	No
517	West Yale Loop	Thunder Run to Yale Avenue	63.6	64.0	64.0	0.4	3.0	No
518	West Yale Loop	Main Street to Timber Run	62.9	62.8	62.9	0.0	3.0	No
519	West Yale Loop	Yale Avenue to Shorebird	62.1	63.2	63.3	1.2	3.0	No
520	West Yale Loop	Warner Avenue to Stonecreek South	62.4	62.7	62.7	0.3	3.0	No
521	West Yale Loop	Barranca Parkway to Alton Parkway	62.4	62.4	62.4	0.0	3.0	No
522	West Yale Loop	Stonecreek North to Warner Avenue	62.0	62.6	62.6	0.6	3.0	No
523	West Yale Loop	Birdsong to Barranca Parkway	62.2	62.4	62.5	0.3	3.0	No
524	Westwood	Yorktown to Bryan Avenue	63.6	63.5	63.5	-0.1	3.0	No
525	Westwood	Bryan Avenue to Leaf	61.6	61.6	61.6	0.0	3.0	No
526	Yale Avenue	Deerfield Avenue to Winvale Avenue	68.6	68.6	68.6	0.0	1.5	No
527	Yale Avenue	Hicks Canyon Drive to Meadowood	67.4	67.3	67.3	-0.1	1.5	No
528	Yale Avenue	Walnut Avenue to Roosevelt	70.9	71.1	71.2	0.3	1.5	No
529	Yale Avenue	Roosevelt to Trabuco Road	67.1	67.1	67.1	0.0	1.5	No
530	Yale Avenue	Irvine Center Drive to Deerfield Avenue	67.0	66.9	66.8	-0.2	1.5	No
531	Yale Avenue	West Yale Loop to Irvine Center Drive	65.8	66.5	66.6	0.8	1.5	No
532	Yale Avenue	Winvale Avenue to Karen Ann Lane	65.7	65.7	65.8	0.1	1.5	No
533	Yale Avenue	Karen Ann Lane to Walnut Avenue	65.7	65.7	65.8	0.1	1.5	No
534	Yale Avenue	Trabuco Road to Southwood	65.6	65.6	65.7	0.1	1.5	No
535	Yale Avenue	Southwood to Bryan Avenue	65.6	65.4	65.4	-0.2	1.5	No
536	Yale Avenue	Northwood to Irvine Boulevard	65.3	65.1	65.2	-0.1	1.5	No
537	Yale Avenue	Bryan Avenue to Monticello	65.2	65.0	65.0	-0.2	1.5	No
538	Yale Avenue	Irvine Boulevard to Park Place	64.3	64.2	64.2	-0.1	3.0	No
539	Yale Avenue	University Drive to Royce	63.0	63.6	63.5	0.5	3.0	No
540	Yale Court	Arborwood to Portola Parkway	60.3	60.4	60.4	0.1	3.0	No
<sup>1</sup> Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses. <sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use. <sup>3</sup> Does the Project create an incremental noise level increase exceeding the significance criteria?								

Table 17

Table 17: Current General Plan and Cumulative Preferred Plan Traffic Noise Level Increases

ID	Road	Segment	CNEL at Receiving Land Use (dBA) <sup>2</sup>				Incremental Noise Level Increase Threshold <sup>3</sup>	
			Current General Plan	Preferred	Cumulative Preferred	Cumulative Increase	Limit	Exceeded?
1	Ada	Barranca Parkway to Marine Way	0.0	70.8	70.8	70.8	5.0	Yes
2	Ada	Alton Parkway to Barranca Parkway	67.1	69.2	69.2	2.1	1.5	Yes
3	Alton Parkway	Enterprise to I-5 NB Off-Ramp	72.6	73.9	73.9	1.3	1.5	No
4	Alton Parkway	I-5 NB Off-Ramp to Technology Drive West	73.3	74.5	74.5	1.2	1.5	No
5	Alton Parkway	East Yale Loop to Jeffrey Road	71.5	71.8	71.8	0.3	1.5	No
6	Alton Parkway	Gateway Boulevard to Enterprise	70.5	71.7	71.7	1.2	1.5	No
7	Alton Parkway	Jeffrey Road to Royal Oak	70.4	70.7	70.8	0.4	1.5	No
8	Alton Parkway	Daimler Street to Red Hill Avenue	70.4	70.6	70.6	0.2	1.5	No
9	Alton Parkway	Culver Drive to West Yale Loop	70.5	70.6	70.6	0.1	1.5	No
10	Alton Parkway	West Yale Loop to Lake Road	70.5	70.6	70.6	0.1	1.5	No
11	Alton Parkway	Technology Drive West to Ada	71.4	72.4	72.4	1.0	1.5	No
12	Alton Parkway	Creek Road to East Yale Loop	70.3	70.5	70.6	0.3	1.5	No
13	Alton Parkway	Red Hill Avenue to Von Karman Avenue	69.9	70.4	70.5	0.6	1.5	No
14	Alton Parkway	Lake Road to Creek Road	70.3	70.3	70.3	0.0	1.5	No
15	Alton Parkway	Telemetry to Banting	69.8	70.3	70.4	0.6	1.5	No
16	Alton Parkway	Irvine Boulevard to Commercentre	71.0	70.8	70.9	-0.1	1.5	No
17	Alton Parkway	Jenner to Telemetry	69.7	70.3	70.3	0.6	1.5	No
18	Alton Parkway	Irvine Center Drive to Gateway Boulevard	69.8	71.0	71.0	1.2	1.5	No
19	Alton Parkway	Sand Canyon Avenue to Hospital	73.6	73.7	73.7	0.1	1.5	No
20	Alton Parkway	Laguna Canyon Road to Jenner	69.7	70.2	70.2	0.5	1.5	No
21	Alton Parkway	Technology Drive East to Barranca Pkwy/Muirlands Blvd	70.4	70.8	70.8	0.4	1.5	No
22	Alton Parkway	Royal Oak to Valley Oak Drive	69.7	70.0	70.0	0.3	1.5	No
23	Alton Parkway	Banting to Pacifica	69.3	69.9	69.9	0.6	1.5	No
24	Alton Parkway	Barranca Pkwy/Muirlands Blvd to Jeronimo Road	70.3	70.3	70.3	0.0	1.5	No
25	Alton Parkway	Ada to Technology Drive East	70.2	70.3	70.3	0.1	1.5	No
26	Alton Parkway	Von Karman Avenue to Jamboree Road	69.2	69.6	69.7	0.5	1.5	No
27	Alton Parkway	Jeronimo Road to Hughes	69.9	70.0	70.0	0.1	1.5	No
28	Alton Parkway	Hughes to Morgan	69.7	69.8	69.8	0.1	1.5	No
29	Alton Parkway	Morgan to Toledo Way	69.0	69.0	69.0	0.0	1.5	No
30	Alton Parkway	San Marino to Culver Drive	69.0	69.1	69.1	0.1	1.5	No
31	Alton Parkway	Jamboree Road to Murphy Avenue	68.6	68.9	69.1	0.5	1.5	No

Table 17

32	Alton Parkway	Hospital to Laguna Canyon Road	71.5	71.9	72.0	0.5	1.5	No
33	Alton Parkway	Valley Oak Drive to Sand Canyon Avenue	71.4	71.8	71.8	0.4	1.5	No
34	Alton Parkway	Murphy Avenue to Harvard Avenue	68.5	68.7	68.9	0.4	1.5	No
35	Alton Parkway	Foster to Irvine Boulevard	69.0	68.7	68.7	-0.3	1.5	No
36	Alton Parkway	Fairbanks to Foster	68.7	68.4	68.5	-0.2	1.5	No
37	Alton Parkway	Toledo Way to Berteia	68.4	68.4	68.4	0.0	1.5	No
38	Alton Parkway	Pacifica to Meridian	70.7	71.5	71.6	0.9	1.5	No
39	Alton Parkway	Berteia to Fairbanks	68.3	68.3	68.3	0.0	1.5	No
40	Alton Parkway	Meridian to Irvine Center Drive	67.5	68.2	68.2	0.7	1.5	No
41	Alton Parkway	Paseo Westpark to San Marino	68.0	68.1	68.2	0.2	1.5	No
42	Alton Parkway	Harvard Avenue to Paseo Westpark	67.1	67.5	67.7	0.6	1.5	No
43	Astor	Lynx to Fairbanks	66.9	67.0	67.0	0.1	1.5	No
44	Astor	Cadence to Lynx	66.0	65.8	65.8	-0.2	1.5	No
45	Bake Parkway	I-5 NB Off-Ramp to Rockfield Boulevard	76.4	76.6	76.6	0.2	1.5	No
46	Bake Parkway	Muirlands Boulevard to Jeronimo Road	72.9	72.9	72.9	0.0	1.5	No
47	Bake Parkway	Rockfield Boulevard to Muirlands Boulevard	75.1	75.0	75.0	-0.1	1.5	No
48	Bake Parkway	Jeronimo Road to Toledo Way	72.0	72.0	72.0	0.0	1.5	No
49	Bake Parkway	Toledo Way to Cromwell	71.6	71.6	71.7	0.1	1.5	No
50	Bake Parkway	Cromwell to Irvine Boulevard	71.6	71.6	71.6	0.0	1.5	No
51	Bake Parkway	Research Drive to I-5 SB Off-Ramp	69.3	69.5	69.6	0.3	1.5	No
52	Bake Parkway	Irvine Center Drive to Research Drive	64.6	64.8	65.0	0.4	3.0	No
53	Bake Parkway	Lake Forest Drive to Irvine Center Drive	63.0	63.4	63.7	0.7	3.0	No
54	Banting	Alton Parkway to Barranca Parkway	59.3	60.2	60.1	0.8	5.0	No
55	Barranca Parkway	Pacifica to Irvine Center Drive	71.7	73.1	73.1	1.4	1.5	No
56	Barranca Parkway	Banting to Pacifica	71.8	72.7	72.7	0.9	1.5	No
57	Barranca Parkway	I-5 HOV Ramp to Technology Drive West	70.9	72.6	72.7	1.8	1.5	Yes
58	Barranca Parkway	Technology Drive West to Ada	71.5	72.6	72.6	1.1	1.5	No
59	Barranca Parkway	Irvine Center Drive to I-5 HOV Ramp	70.8	72.3	72.4	1.6	1.5	Yes
60	Barranca Parkway	Culver Drive to West Yale Loop	72.0	72.2	72.2	0.2	1.5	No
61	Barranca Parkway	East Yale Loop to Jeffrey Road	71.7	72.1	72.1	0.4	1.5	No
62	Barranca Parkway	West Yale Loop to Lake Road	71.8	72.0	72.0	0.2	1.5	No
63	Barranca Parkway	Ada to Alton Parkway	72.3	72.0	72.0	-0.3	1.5	No
64	Barranca Parkway	Lake Road to Creek Road	71.4	71.7	71.7	0.3	1.5	No
65	Barranca Parkway	Red Hill Avenue to Armstrong Avenue	74.4	74.7	74.7	0.3	1.5	No
66	Barranca Parkway	Discovery/Herchel to Banting	71.1	71.6	71.6	0.5	1.5	No
67	Barranca Parkway	Lyon to East Yale Loop	71.1	71.5	71.5	0.4	1.5	No
68	Barranca Parkway	Creek Road to Lyon	71.1	71.4	71.4	0.3	1.5	No

Table 17

69	Barranca Parkway	Von Karman Avenue to Jamboree Road	72.4	72.7	72.7	0.3	1.5	No
70	Barranca Parkway	Sand Canyon Avenue to Laguna Canyon Road	70.6	70.8	70.8	0.2	1.5	No
71	Barranca Parkway	Armstrong Avenue to Von Karman Avenue	72.1	72.3	72.4	0.3	1.5	No
72	Barranca Parkway	Valley Oak Drive to Sand Canyon Avenue	70.4	70.6	70.7	0.3	1.5	No
73	Barranca Parkway	Jamboree Road to Construction Circle	70.7	71.0	71.1	0.4	1.5	No
74	Barranca Parkway	Santa Rosa to Culver Drive	70.6	70.9	71.0	0.4	1.5	No
75	Barranca Parkway	FedEx to Discovery/Herchel	69.6	70.2	70.3	0.7	1.5	No
76	Barranca Parkway	Jeffrey Road to Valley Oak Drive	69.7	70.2	70.3	0.6	1.5	No
77	Barranca Parkway	Laguna Canyon Road to FedEx	69.4	70.1	70.1	0.7	1.5	No
78	Barranca Parkway	Pullman Street to Red Hill Avenue	73.4	73.6	73.6	0.2	1.5	No
79	Barranca Parkway	Construction Circle to Fire Station	70.1	70.5	70.5	0.4	1.5	No
80	Barranca Parkway	Fire Station to Harvard Avenue	70.1	70.5	70.5	0.4	1.5	No
81	Barranca Parkway	Paseo Westpark to Santa Rosa	70.1	70.4	70.5	0.4	1.5	No
82	Barranca Parkway	Harvard Avenue to Paseo Westpark	69.7	70.1	70.2	0.5	1.5	No
83	Bay Tree	Trabuco Road to Roosevelt	57.2	57.2	57.2	0.0	5.0	No
84	Beacon	Ridge Valley to Benchmark	59.0	59.6	59.7	0.7	5.0	No
85	Benchmark (LN Street)	Ridge Valley (O Street) to Bosque	56.7	56.5	56.5	-0.2	5.0	No
86	Bison Avenue	SR-73 NB Off-Ramp to California Avenue	69.7	69.6	69.7	0.0	1.5	No
87	Bonita Canyon Drive	MacArthur Boulevard to SR-73	70.2	70.3	70.3	0.1	1.5	No
88	Bonita Canyon Drive	Turtle Ridge to Shady Canyon Drive	68.5	68.6	68.6	0.1	1.5	No
89	Bonita Canyon Drive	Newport Coast Drive to Turtle Ridge	68.2	68.2	68.2	0.0	1.5	No
90	Bonita Canyon Drive	SR-73 NB Off-Ramp to Newport Coast Drive	67.9	68.0	68.0	0.1	1.5	No
91	Bosque	Cadence to Great Park Boulevard	64.8	65.2	65.2	0.4	3.0	No
92	Bosque	Irvine Boulevard to Benchmark (LN Street)	63.0	63.5	63.5	0.5	3.0	No
93	Bosque	Benchmark to Cadence	63.0	63.1	63.1	0.1	3.0	No
94	Bosque	Great Park Boulevard to Beacon	56.9	56.7	56.7	-0.2	5.0	No
95	Bosque	Beacon to S 5th Street	55.9	56.1	56.1	0.2	5.0	No
96	Bryan Avenue	Jamboree Road to Market Place	68.9	68.9	69.0	0.1	1.5	No
97	Bryan Avenue	Market Place to El Camino Real	68.9	68.9	68.9	0.0	1.5	No
98	Bryan Avenue	Rubicon to Culver Drive	68.9	68.9	68.9	0.0	1.5	No
99	Bryan Avenue	El Camino Real to Rubicon	68.9	68.8	68.9	0.0	1.5	No
100	Bryan Avenue	Eastwood to Jeffrey Road	66.3	66.9	67.0	0.7	1.5	No
101	Bryan Avenue	Westwood to Yale Avenue	66.3	66.6	66.7	0.4	1.5	No
102	Bryan Avenue	Culver Drive to Westwood	66.4	66.6	66.6	0.2	1.5	No
103	Bryan Avenue	Yale Avenue to Eastwood	66.0	66.4	66.5	0.5	1.5	No
104	Cadence	Pusan to Chinon	64.1	65.6	65.6	1.5	3.0	No
105	Cadence	Bosque to Pusan	64.2	65.3	65.3	1.1	3.0	No

Table 17

106	Cadence	Ridge Valley (O Street) to Bosque	64.0	63.9	63.9	-0.1	3.0	No
107	Cadence	Chinon to Merit	59.1	62.2	62.2	3.1	5.0	No
108	Cadence	Merit to Astor	58.6	59.4	59.4	0.8	5.0	No
109	California Avenue	University Drive to Academy Way	66.2	66.2	67.2	1.0	1.5	No
110	California Avenue	Campus Drive to Harvard Avenue	64.1	64.2	64.2	0.1	3.0	No
111	California Avenue	Theory to Bison Avenue	64.0	63.9	64.0	0.0	3.0	No
112	Campus Drive	Carlson Avenue to University Drive	73.0	73.2	73.3	0.3	1.5	No
113	Campus Drive	University Drive to Bridge Road	71.7	71.8	71.7	0.0	1.5	No
114	Campus Drive	Jamboree Road to Carlson Avenue	71.3	71.5	71.5	0.2	1.5	No
115	Campus Drive	Stanford Court to Berkeley Avenue	71.0	71.1	71.0	0.0	1.5	No
116	Campus Drive	California Avenue to Culver Drive	70.9	70.9	70.9	0.0	1.5	No
117	Campus Drive	Berkeley Avenue to Cornell	69.9	70.0	69.9	0.0	1.5	No
118	Campus Drive	Martin to Von Karman Avenue	68.7	69.0	69.1	0.4	1.5	No
119	Campus Drive	Culver Drive to Paseo Montoya (Turtle Rock Drive)	68.6	68.7	68.7	0.1	1.5	No
120	Campus Drive	Von Karman Avenue to Teller Avenue	68.1	68.3	68.5	0.4	1.5	No
121	Campus Drive	MacArthur Boulevard to Martin	68.1	68.2	68.3	0.2	1.5	No
122	Campus Drive	Teller Avenue to Jamboree Road	67.2	67.5	67.5	0.3	1.5	No
123	Carlson Avenue	Michelson Drive to Campus Drive	67.8	67.9	67.9	0.1	1.5	No
124	Chinon	Irvine Boulevard to Cadence	58.3	59.0	59.0	0.7	5.0	No
125	Creek Road	Alton Parkway to Barranca Parkway	56.0	56.1	56.2	0.2	5.0	No
126	Culver Drive	Michelson Drive to I-405 SB Off-Ramp	73.7	73.9	73.9	0.2	1.5	No
127	Culver Drive	I-405 SB Off-Ramp to I-405 NB Off Ramp	73.9	73.8	73.8	-0.1	1.5	No
128	Culver Drive	I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)	73.9	73.9	73.9	0.0	1.5	No
129	Culver Drive	Scottsdale Drive to I-5 SB Off- Ramp	73.9	73.9	73.9	0.0	1.5	No
130	Culver Drive	I-405 NB Off-Ramp to San Leandro	73.6	73.6	73.6	0.0	1.5	No
131	Culver Drive	San Leandro to Main Street	73.3	73.3	73.3	0.0	1.5	No
132	Culver Drive	Harvard Avenue to University Drive	73.3	73.3	73.3	0.0	1.5	No
133	Culver Drive	Trabuco Road to Farwell Avenue	74.4	74.3	74.2	-0.2	1.5	No
134	Culver Drive	Alton Parkway to Barranca Parkway	73.2	73.2	73.2	0.0	1.5	No
135	Culver Drive	Main Street to Alton Parkway	73.1	73.1	73.1	0.0	1.5	No
136	Culver Drive	Warner Avenue to Irvine Center Drive	73.0	73.0	73.0	0.0	1.5	No
137	Culver Drive	Walnut Avenue to Scottsdale Dive	72.9	72.9	72.9	0.0	1.5	No
138	Culver Drive	Barranca Parkway to Warner Avenue	72.8	72.8	72.9	0.1	1.5	No
139	Culver Drive	Shady Canyon Drive to Palo Verde	72.1	72.0	72.0	-0.1	1.5	No
140	Culver Drive	Deerfield Avenue to Walnut Avenue	72.6	72.5	72.5	-0.1	1.5	No
141	Culver Drive	Sandburg Way to Michelson Drive	72.5	72.5	72.5	0.0	1.5	No
142	Culver Drive	Irvine Center Drive to Deerfield Avenue	72.4	72.4	72.4	0.0	1.5	No

Table 17

143	Culver Drive	Palo Verde to Campus Drive	71.6	71.6	71.6	0.0	1.5	No
144	Culver Drive	University Drive to Sandburg Way	72.2	72.2	72.2	0.0	1.5	No
145	Culver Drive	Farwell Avenue to Bryan Avenue	73.3	73.2	73.2	-0.1	1.5	No
146	Culver Drive	Campus Drive to High School	72.1	72.1	72.1	0.0	1.5	No
147	Culver Drive	High School to Harvard Avenue	72.0	72.0	72.0	0.0	1.5	No
148	Culver Drive	Bryan Avenue to Florence	71.8	71.8	71.8	0.0	1.5	No
149	Culver Drive	Portola Parkway to Settlers	71.1	71.1	71.2	0.1	1.5	No
150	Culver Drive	Florence to Irvine Boulevard	71.7	71.7	71.7	0.0	1.5	No
151	Culver Drive	Irvine Boulevard to Viewpark	70.5	70.5	70.5	0.0	1.5	No
152	Culver Drive	Viewpark to Meadowood	70.5	70.4	70.4	-0.1	1.5	No
153	Culver Drive	Settlers to Furrow	68.3	68.4	68.5	0.2	1.5	No
154	Culver Drive	Meadowood to Portola Parkway	69.0	69.0	69.0	0.0	1.5	No
155	Discovery Drive	Irvine Center Drive to Laguna Canyon Road	63.8	64.0	64.0	0.2	3.0	No
156	Discovery Drive	Waterworks Way to Irvine Center Drive	60.7	61.2	61.2	0.5	3.0	No
157	East Yale Loop	Alton Parkway to Witherspoon	65.3	65.5	65.5	0.2	1.5	No
158	East Yale Loop	Osborn Street to Barranca Parkway	65.0	65.3	65.3	0.3	1.5	No
159	East Yale Loop	Yale Avenue to Springbrook South	64.3	64.8	64.9	0.6	3.0	No
160	East Yale Loop	Springbrook North to Alton Parkway	63.4	63.5	63.6	0.2	3.0	No
161	East Yale Loop	Woodspring to Yale Avenue	62.5	62.7	62.7	0.2	3.0	No
162	East Yale Loop	Barranca Parkway to Eastshore	62.5	62.4	62.4	-0.1	3.0	No
163	Eastwood	Bryan Avenue to Monticello	60.5	60.8	60.8	0.3	3.0	No
164	Eastwood	Columbus to Bryan Avenue	58.8	58.7	58.8	0.0	5.0	No
165	El Camino Real	Jamboree Road to Alliance (SR-261 Bridge)	67.0	67.1	67.1	0.1	1.5	No
166	El Camino Real North	El Camino Real to Bryan Avenue	62.4	62.4	62.4	0.0	3.0	No
167	Fairbanks	Alton Parkway to Astor	69.7	69.7	69.8	0.1	1.5	No
168	Fairbanks	Irvine Boulevard to Alton Parkway	66.8	66.9	66.9	0.1	1.5	No
169	Fairchild Road	MacArthur Boulevard to Jamboree Road	64.0	64.1	64.0	0.0	3.0	No
170	Gateway Boulevard	Alton Parkway to Irvine Center Drive	62.8	63.3	63.3	0.5	3.0	No
171	Gateway Boulevard	Spectrum Center Drive (Fortune Drive) to Alton Parkway	61.6	62.1	62.1	0.5	3.0	No
172	Gateway Boulevard	Irvine Center Drive to Meridian	58.4	59.1	59.2	0.8	5.0	No
173	Great Park Boulevard	Sand Canyon to Ridge Valley	74.1	74.4	74.5	0.4	1.5	No
174	Great Park Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	69.7	70.2	70.2	0.5	1.5	No
175	Great Park Boulevard (EB)	Bosque to Skyhawk	68.0	68.8	68.9	0.9	1.5	No
176	Great Park Boulevard (WB)	Bosque to Skyhawk	67.6	68.3	68.3	0.7	1.5	No
177	Harvard Avenue	University Drive to Michelson Drive	71.8	72.0	72.0	0.2	1.5	No
178	Harvard Avenue	Michelson Drive to Coronado	70.2	70.4	70.5	0.3	1.5	No
179	Harvard Avenue	San Marino to Alton Parkway	70.0	70.1	70.2	0.2	1.5	No

Table 17

180	Harvard Avenue	Coronado to Main Street	70.0	70.1	70.2	0.2	1.5	No
181	Harvard Avenue	San Carlo to San Marino	69.9	70.0	70.1	0.2	1.5	No
182	Harvard Avenue	Main Street to San Carlo	69.8	70.0	70.0	0.2	1.5	No
183	Harvard Avenue	Alton Parkway to San Leon	68.8	68.8	68.6	-0.2	1.5	No
184	Harvard Avenue	San Juan to Barranca Parkway	68.6	68.8	68.7	0.1	1.5	No
185	Harvard Avenue	San Leon to San Juan	68.6	68.6	68.6	0.0	1.5	No
186	Harvard Avenue	Irvine Center Drive to Deerfield Avenue	67.4	67.4	67.4	0.0	1.5	No
187	Harvard Avenue	Deerfield Avenue to Poplar Street	67.4	67.3	67.4	0.0	1.5	No
188	Harvard Avenue	Barranca Parkway to Warner Avenue	67.9	67.8	67.9	0.0	1.5	No
189	Harvard Avenue	Bridge Road to University Drive	67.6	67.8	67.8	0.2	1.5	No
190	Harvard Avenue	Paseo Westpark to Irvine Center Drive	67.7	67.8	67.8	0.1	1.5	No
191	Harvard Avenue	Poplar Street to Walnut Avenue	68.7	68.7	68.8	0.1	1.5	No
192	Harvard Avenue	California Avenue to Berkeley Avenue	67.0	67.2	67.2	0.2	1.5	No
193	Harvard Avenue	Culver Drive to California Avenue	66.9	67.2	67.2	0.3	1.5	No
194	Harvard Avenue	Berkeley to Bridge Road	67.0	67.1	67.1	0.1	1.5	No
195	Harvard Avenue	Warner Avenue to Paseo Westpark	66.8	66.8	66.8	0.0	1.5	No
196	Hicks Canyon Drive	Delamesa to Yale Avenue	58.4	58.2	58.2	-0.2	5.0	No
197	Hornet (5th St)	Ridge Valley (O Street) to Bosque	57.5	57.5	57.6	0.1	5.0	No
198	Hubble	Irvine Center Drive to Bunsen	55.7	55.9	56.1	0.4	5.0	No
199	Irvine Boulevard	SR-133 NB Off- Ramp to Ridge Valley (O Street)	72.3	72.3	72.3	0.0	1.5	No
200	Irvine Boulevard	SR-133 SB Off-Ramp to SR-133 NB Off-Ramp	72.2	72.2	72.1	-0.1	1.5	No
201	Irvine Boulevard	Sand Canyon to SR-133 SB Off-Ramp	73.1	73.1	73.1	0.0	1.5	No
202	Irvine Boulevard	Merit to Alton	71.6	71.6	71.6	0.0	1.5	No
203	Irvine Boulevard	Journey to Sand Canyon Avenue	71.6	71.6	71.7	0.1	1.5	No
204	Irvine Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	71.2	71.2	71.1	-0.1	1.5	No
205	Irvine Boulevard	Pusan Way to Chinon (B Street)	71.0	71.0	71.0	0.0	1.5	No
206	Irvine Boulevard	Palo Lado to Yale Avenue	70.6	71.1	71.2	0.6	1.5	No
207	Irvine Boulevard	Culver Drive to Palo Lado	70.6	71.0	71.1	0.5	1.5	No
208	Irvine Boulevard	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.6	70.9	71.0	0.4	1.5	No
209	Irvine Boulevard	Old Myford Road to Market Place	70.5	71.0	71.0	0.5	1.5	No
210	Irvine Boulevard	Bosque (LY Street) to Modjeska	70.7	70.9	71.0	0.3	1.5	No
211	Irvine Boulevard	Jamboree Road to Old Myford Road	70.5	70.9	70.9	0.4	1.5	No
212	Irvine Boulevard	Market Place to SR-261 SB Off-Ramp	70.4	70.9	70.9	0.5	1.5	No
213	Irvine Boulevard	Jeffrey Road to Groveland	70.8	70.8	71.0	0.2	1.5	No
214	Irvine Boulevard	Bake Parkway to Lake Forest Drive	70.9	70.6	70.7	-0.2	1.5	No
215	Irvine Boulevard	Independence Way (The Groves)/ The Groves to Jeffrey Road	70.5	70.6	70.6	0.1	1.5	No
216	Irvine Boulevard	Chinon (B Street) to Merit	70.5	70.5	70.5	0.0	1.5	No



Table 17

217	Irvine Boulevard	SR-261 NB Off-Ramp to Central Park	70.2	70.5	70.5	0.3	1.5	No
218	Irvine Boulevard	Pueblo Norte to Independence Way (The Groves)/ Parkwood	70.1	70.3	70.4	0.3	1.5	No
219	Irvine Boulevard	Yale Avenue to Pueblo Norte	70.1	70.3	70.4	0.3	1.5	No
220	Irvine Boulevard	Modjeska to Pusan Way	70.2	70.2	70.2	0.0	1.5	No
221	Irvine Boulevard	Central Park Avenue to Culver Drive	69.6	69.9	69.9	0.3	1.5	No
222	Irvine Boulevard	Parker to Bake Parkway	69.6	69.5	69.7	0.1	1.5	No
223	Irvine Boulevard	Alton Parkway to Fairbanks	68.6	68.6	68.6	0.0	1.5	No
224	Irvine Center Drive	Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp	72.5	72.6	72.7	0.2	1.5	No
225	Irvine Center Drive	Orange Tree to Valley Oak Drive	71.4	71.8	71.9	0.5	1.5	No
226	Irvine Center Drive	I-405 SB Off-Ramp to Research	72.1	72.1	72.3	0.2	1.5	No
227	Irvine Center Drive	Irvine Valley College to Orange Tree	71.3	71.7	71.8	0.5	1.5	No
228	Irvine Center Drive	Fontaine Avenue to Jeffrey Road	71.0	71.5	71.5	0.5	1.5	No
229	Irvine Center Drive	Culver Drive to Deerwood	71.0	71.4	71.5	0.5	1.5	No
230	Irvine Center Drive	Deerwood to Yale Avenue	71.0	71.4	71.4	0.4	1.5	No
231	Irvine Center Drive	Yale Avenue to Fontaine Avenue	70.9	71.4	71.5	0.6	1.5	No
232	Irvine Center Drive	Jeffrey Road to Irvine Valley College	71.1	71.3	71.4	0.3	1.5	No
233	Irvine Center Drive	Alton Parkway to Spectrum	70.4	71.0	71.1	0.7	1.5	No
234	Irvine Center Drive	Spectrum to Pacifica	70.3	71.0	71.0	0.7	1.5	No
235	Irvine Center Drive	Hearthstone to Culver Drive	70.6	70.9	70.9	0.3	1.5	No
236	Irvine Center Drive	Charter to Barranca Parkway	70.2	70.6	70.7	0.5	1.5	No
237	Irvine Center Drive	Jamboree Road to Harvard Avenue	70.3	70.5	70.5	0.2	1.5	No
238	Irvine Center Drive	Pacifica to Entertainment (Enterprise/Fortune)	70.3	70.5	70.6	0.3	1.5	No
239	Irvine Center Drive	Valley Oak Drive to Sand Canyon Avenue	70.0	70.5	70.5	0.5	1.5	No
240	Irvine Center Drive	Harvard Avenue to Hearthstone	70.0	70.2	70.2	0.2	1.5	No
241	Irvine Center Drive	Research to Hubble	69.8	69.7	70.0	0.2	1.5	No
242	Irvine Center Drive	Barranca Parkway to Gateway Boulevard	69.4	69.8	69.9	0.5	1.5	No
243	Irvine Center Drive	Bake Parkway to Muller	69.9	69.7	69.9	0.0	1.5	No
244	Irvine Center Drive	Discovery to Charter	69.3	69.8	69.9	0.6	1.5	No
245	Irvine Center Drive	Hubble to Bake Parkway	69.7	69.5	69.6	-0.1	1.5	No
246	Irvine Center Drive	Muller to Tesla	69.5	69.3	69.4	-0.1	1.5	No
247	Irvine Center Drive	Sand Canyon Avenue to Odyssey	69.0	69.2	69.2	0.2	1.5	No
248	Irvine Center Drive	Tesla to Scientific Way	69.2	68.9	69.1	-0.1	1.5	No
249	Irvine Center Drive	Scientific Way to Lake Forest Drive	68.9	68.7	68.9	0.0	1.5	No
250	Irvine Center Drive	Gateway Boulevard to Alton Parkway	68.3	68.6	68.7	0.4	1.5	No
251	Irvine Center Drive	Laguna Canyon Road to Discovery	68.2	68.6	68.7	0.5	1.5	No
252	Irvine Center Drive	Odyssey to Laguna Canyon Road	68.3	68.5	68.6	0.3	1.5	No
253	Irvine Center Drive (Edinger)	Redhill Avenue to Jamboree Road	70.8	70.9	70.9	0.1	1.5	No

Table 17

254	Jamboree Road	I-5 SB Off-Ramp to I-5 NB Off-Ramp	74.5	74.5	74.5	0.0	1.5	No
255	Jamboree Road	I-405 SB Off-Ramp to I-405 NB Off Ramp	75.4	75.6	75.6	0.2	1.5	No
256	Jamboree Road	Walnut Avenue to Michelle Drive	73.8	73.9	73.9	0.1	1.5	No
257	Jamboree Road	I-405 NB Off-Ramp to Main Street	76.9	77.0	77.0	0.1	1.5	No
258	Jamboree Road	Michelle Drive to I-5 SB Off-Ramp	73.6	73.6	73.7	0.1	1.5	No
259	Jamboree Road	Main Street to Kelvin Avenue	76.2	76.3	76.4	0.2	1.5	No
260	Jamboree Road	Michelson Drive to I-405 SB Off-Ramp	74.2	74.3	74.3	0.1	1.5	No
261	Jamboree Road	Kelvin Avenue to McGaw Avenue	75.8	76.0	76.0	0.2	1.5	No
262	Jamboree Road	McGaw Avenue to Alton Parkway	75.8	75.9	76.0	0.2	1.5	No
263	Jamboree Road	Birch Street to Campus Drive	72.6	72.9	73.0	0.4	1.5	No
264	Jamboree Road	Dupont Drive to Michelson Drive	73.5	73.8	73.9	0.4	1.5	No
265	Jamboree Road	Alton Parkway to Beckman	75.4	75.5	75.6	0.2	1.5	No
266	Jamboree Road	Fairchild Road to Birch Street	73.2	73.4	73.5	0.3	1.5	No
267	Jamboree Road	Beckman to Barranca Parkway	75.2	75.2	75.3	0.1	1.5	No
268	Jamboree Road	I-5 NB Off-Ramp to El Camino Real	75.1	75.1	75.1	0.0	1.5	No
269	Jamboree Road	Campus Drive to Dupont Drive	72.7	73.1	73.1	0.4	1.5	No
270	Jamboree Road	El Camino Real to West Drive	75.1	75.0	74.9	-0.2	1.5	No
271	Jamboree Road	West Drive to Bryan Avenue	75.1	75.0	75.0	-0.1	1.5	No
272	Jamboree Road	Bryan Avenue to Irvine Boulevard	74.8	74.7	74.6	-0.2	1.5	No
273	Jamboree Road	Koll Center to Fairchild Road	72.5	72.7	72.7	0.2	1.5	No
274	Jamboree Road	MacArthur Boulevard to Koll Center	72.5	72.6	72.7	0.2	1.5	No
275	Jamboree Road	Irvine Boulevard to Portola Parkway	70.8	70.7	70.7	-0.1	1.5	No
276	Jamboree Road	Warner Avenue to Edinger Avenue	79.1	79.1	79.1	0.0	1.5	No
277	Jamboree Road	Barranca Parkway to Warner Avenue	78.2	78.3	78.3	0.1	1.5	No
278	Jamboree Road	Edinger Avenue to Walnut Avenue	77.9	78.0	78.0	0.1	1.5	No
279	Jeffrey Road	Walnut Avenue to I-5 NB Off-Ramp	71.3	71.3	71.4	0.1	1.5	No
280	Jeffrey Road	I-5 NB Off-Ramp to Roosevelt	72.2	72.2	72.3	0.1	1.5	No
281	Jeffrey Road	Poplar (Meadows) to Walnut Avenue	70.8	70.9	70.9	0.1	1.5	No
282	Jeffrey Road	Alton Parkway to Barranca Parkway	70.5	70.8	70.8	0.3	1.5	No
283	Jeffrey Road	Irvine Center Drive to Poplar (Meadows)	70.6	70.7	70.7	0.1	1.5	No
284	Jeffrey Road	I-405 NB Off-Ramp to Quail Creek	70.5	70.7	70.8	0.3	1.5	No
285	Jeffrey Road	Barranca Parkway to Irvine Valley College	70.4	70.6	70.6	0.2	1.5	No
286	Jeffrey Road	Quail Creek to Alton Parkway	70.5	70.6	70.7	0.2	1.5	No
287	Jeffrey Road	Irvine Valley College to Irvine Center Drive	70.3	70.4	70.4	0.1	1.5	No
288	Jeffrey Road	Trabuco Road to Hideaway	69.7	69.6	69.7	0.0	1.5	No
289	Jeffrey Road	Hideaway to Bryan Avenue	69.7	69.6	69.7	0.0	1.5	No
290	Jeffrey Road	Roosevelt to Grove	70.4	70.4	70.4	0.0	1.5	No

Table 17

291	Jeffrey Road	Grove to Trabuco Road	70.3	70.2	70.2	-0.1	1.5	No
292	Jeffrey Road	Bryan Avenue to Irvine Boulevard	68.5	68.5	68.5	0.0	1.5	No
293	Jeffrey Road	Encore to Portola Parkway	66.1	65.8	65.6	-0.5	1.5	No
294	Jeffrey Road	Irvine Boulevard to Encore	65.6	65.5	65.4	-0.2	1.5	No
295	Jeronimo Road	Goodyear to Bake Parkway	64.8	64.6	64.5	-0.3	3.0	No
296	Jeronimo Road	Alton Parkway to Goodyear	64.7	64.3	64.3	-0.4	3.0	No
297	Laguna Canyon Road	Old Laguna Canyon Road to Lake Forest Drive	73.3	73.3	73.4	0.1	1.5	No
298	Laguna Canyon Road	Laguna Canyon Freeway to Quail Hill Parkway	70.0	69.9	70.0	0.0	1.5	No
299	Laguna Canyon Road	Discovery to Sand Canyon Avenue	68.1	69.1	69.1	1.0	1.5	No
300	Laguna Canyon Road	I-405 Overcrossing to Pasteur	68.0	67.9	68.0	0.0	1.5	No
301	Laguna Canyon Road	Irvine Center Drive to Discovery	67.3	67.5	67.5	0.2	1.5	No
302	Laguna Canyon Road	Quail Hill Parkway to I-405 Overcrossing	68.0	67.9	68.0	0.0	1.5	No
303	Laguna Canyon Road	Pasteur to Alton Parkway	66.9	66.9	67.0	0.1	1.5	No
304	Laguna Canyon Road	Waterworks to Irvine Center Drive	66.2	66.4	66.4	0.2	1.5	No
305	Laguna Canyon Road	Alton Parkway to Barranca Parkway	66.0	66.1	66.1	0.1	1.5	No
306	Laguna Canyon Road	Barranca Parkway to Waterworks	65.6	65.6	65.6	0.0	1.5	No
307	Lake Forest Drive	Hidden Canyon to Laguna Canyon Road	69.2	69.3	69.5	0.3	1.5	No
308	Lake Forest Drive	Bake Parkway to Hidden Canyon (Romano)	69.2	69.3	69.5	0.3	1.5	No
309	Lake Forest Drive	Tesla to Bake Parkway	66.2	66.3	66.6	0.4	1.5	No
310	Lake Road	Alton Parkway to Barranca Parkway	59.2	59.2	59.2	0.0	5.0	No
311	Lynx	Irvine Boulevard to Astor	53.5	53.2	53.2	-0.3	5.0	No
312	MacArthur Boulevard	I-405 SB Off-Ramp to Michelson Drive	76.4	76.7	76.7	0.3	1.5	No
313	MacArthur Boulevard	Main Street to I-405 NB Off-Ramp	76.5	76.6	76.7	0.2	1.5	No
314	MacArthur Boulevard	I-405 NB Off-Ramp and I-405 SB Off-Ramp	76.4	76.6	76.6	0.2	1.5	No
315	MacArthur Boulevard	Jamboree Road to Fairchild Road	69.9	69.9	69.9	0.0	1.5	No
316	MacArthur Boulevard	Fairchild Road to University Drive	69.8	69.9	69.8	0.0	1.5	No
317	MacArthur Boulevard	Fitch to Red Hill Avenue	70.5	70.5	70.5	0.0	1.5	No
318	MacArthur Boulevard	Michelson Drive to Douglas	71.8	72.1	72.2	0.4	1.5	No
319	MacArthur Boulevard	Douglas to Campus Drive	71.9	72.1	72.2	0.3	1.5	No
320	MacArthur Boulevard	Skypark to Main Street	69.6	69.5	69.5	-0.1	1.5	No
321	MacArthur Boulevard	Redhill Avenue to Skypark	68.5	68.3	68.4	-0.1	1.5	No
322	MacArthur Boulevard	Birch Street to Jamboree Road	66.8	67.0	67.1	0.3	1.5	No
323	MacArthur Boulevard	Campus Drive to Birch Street	69.1	69.3	69.4	0.3	1.5	No
324	Main Street	Gillette Avenue to Von Karman Avenue	70.2	70.7	70.8	0.6	1.5	No
325	Main Street	MacArthur Boulevard to Mercantile	69.9	70.2	70.3	0.4	1.5	No
326	Main Street	Executive Park to MacArthur Boulevard	68.2	68.4	68.4	0.2	1.5	No
327	Main Street	Von Karman Avenue to Cartwright	67.8	68.3	68.4	0.6	1.5	No

Table 17

328	Main Street	McDermott to Red Hill Avenue	68.0	68.1	68.1	0.1	1.5	No
329	Main Street	Red Hill Avenue to Executive Circle	67.9	68.0	68.0	0.1	1.5	No
330	Main Street	Jamboree Road to Union	67.7	67.8	67.8	0.1	1.5	No
331	Main Street	Culver Drive to West Yale Loop	67.2	67.1	67.2	0.0	1.5	No
332	Main Street	Siglo to Jamboree Road	67.4	67.7	67.7	0.3	1.5	No
333	Main Street	Veneto to Harvard Avenue	67.6	67.5	67.5	-0.1	1.5	No
334	Main Street	Paseo Westpark to Culver Drive	66.4	66.4	66.3	-0.1	1.5	No
335	Main Street	Harvard Avenue to San Mateo	66.3	66.4	66.3	0.0	1.5	No
336	Marine Way	Sand Canyon Avenue to Ridge Valley (O Street)	72.1	72.3	72.3	0.2	1.5	No
337	Marine Way	Alton Parkway to Bake Parkway	69.0	69.3	69.3	0.3	1.5	No
338	Marine Way	Lynx to Barranca Parkway	69.4	69.3	69.3	-0.1	1.5	No
339	Marine Way	County Access to Treble	65.3	68.4	68.4	3.1	1.5	Yes
340	Marine Way	Ridge Valley (O Street) to Skyhawk	67.6	68.2	68.2	0.6	1.5	No
341	Marine Way	Skyhawk to County Access	64.9	67.1	67.2	2.3	3.0	No
342	Marine Way	Barranca Parkway to Alton Parkway	66.3	66.8	66.8	0.5	1.5	No
343	Marine Way	Treble to Lynx	67.1	66.4	66.4	-0.7	1.5	No
344	McGaw Avenue	Von Karman Avenue to Jamboree Road	63.6	64.3	64.3	0.7	3.0	No
345	McGaw Avenue	Red Hill Avenue to Von Karman Avenue	63.6	64.1	64.2	0.6	3.0	No
346	McGaw Avenue	Daimler to Red Hill Avenue	62.4	62.4	62.5	0.1	3.0	No
347	McGaw Avenue	Jamboree Road to Murphy Avenue	59.2	59.3	59.4	0.2	5.0	No
348	Meadowood	Culver Drive to Canyonwood	59.8	59.8	59.8	0.0	5.0	No
349	Meridian	Spectrum to Alton Parkway	54.9	55.3	55.5	0.6	5.0	No
350	Meridian	Alton Parkway to Gateway Boulevard	54.1	54.6	54.7	0.6	5.0	No
351	Merit	Irvine Boulevard to Cadence	57.3	57.9	58.0	0.7	5.0	No
352	Michelson Drive	Riparian to Harvard Avenue	67.8	68.3	68.3	0.5	1.5	No
353	Michelson Drive	Almond Tree Lane to Yale Avenue	66.7	67.1	67.1	0.4	1.5	No
354	Michelson Drive	Von Karman Avenue to Obsidian	67.8	68.0	68.0	0.2	1.5	No
355	Michelson Drive	Parkside to Culver Drive	66.8	67.8	67.8	1.0	1.5	No
356	Michelson Drive	Gillman to Seton/Sandburg Way	66.5	66.8	66.8	0.3	1.5	No
357	Michelson Drive	Carlson to Prince	67.0	67.3	67.3	0.3	1.5	No
358	Michelson Drive	MacArthur Boulevard to Dupont Drive	67.0	67.3	67.3	0.3	1.5	No
359	Michelson Drive	Harvard Avenue to Parkside	66.8	66.8	66.8	0.0	1.5	No
360	Michelson Drive	Bixby to Von Karman Avenue	66.3	66.7	66.7	0.4	1.5	No
361	Michelson Drive	Jamboree Road to Carlson	69.5	69.6	69.6	0.1	1.5	No
362	Michelson Drive	Teller to Jamboree Road	69.5	69.6	69.6	0.1	1.5	No
363	Michelson Drive	Jordan East to University Drive	66.8	66.9	66.9	0.1	1.5	No
364	Michelson Drive	Culver Drive to Angell	66.1	66.2	66.2	0.1	1.5	No

Table 17

365	Modjeska (A Street)	Portola Springs to Irvine Boulevard	71.7	71.7	71.7	0.0	1.5	No
366	Modjeska (A Street)	South of Irvine Boulevard	60.6	61.1	61.0	0.4	3.0	No
367	Muirlands Boulevard	Bake Parkway to City Limits	67.2	67.1	67.2	0.0	1.5	No
368	Muirlands Boulevard	Alton Parkway to Sterling	66.3	66.3	66.3	0.0	1.5	No
369	Muirlands Boulevard	Wrigley to Bake Parkway	66.2	66.3	66.3	0.1	1.5	No
370	Newport Coast Drive	SR-73 NB Off-Ramp to Turtle Ridge	66.7	66.6	66.6	-0.1	1.5	No
371	Newport Coast Drive	Turtle Crest to Bonita Canyon Drive	65.2	65.1	65.1	-0.1	1.5	No
372	Nightmist	Sand Canyon Avenue to Tulip (Road C)	62.1	61.9	61.8	-0.3	3.0	No
373	Northwood	Yale Avenue to Savannah	62.4	62.5	62.5	0.1	3.0	No
374	Northwood	Goldrush to Yale Avenue	61.3	61.5	61.5	0.2	3.0	No
375	Oak Canyon Drive	Valley Oak Drive to Sand Canyon Avenue	67.4	69.2	69.2	1.8	1.5	Yes
376	Pacifica	Gateway to Barranca Parkway	64.6	65.2	65.2	0.6	3.0	No
377	Pacifica	Alton Parkway to Gateway	63.2	64.0	64.0	0.8	3.0	No
378	Pacifica	Irvine Center Drive to Fortune Drive (Spectrum Center Drive)	63.2	62.7	62.8	-0.4	3.0	No
379	Pacifica	Meridian to Alton Parkway	60.0	60.8	60.8	0.8	1.5	No
380	Park Place	Christamon South to Yale Avenue	57.0	57.0	57.0	0.0	5.0	No
381	Portola Parkway	Bee Canyon Access Road to Sand Canyon Avenue	71.3	71.5	71.7	0.4	1.5	No
382	Portola Parkway	Jeffrey Road to Bee Canyon Access Road	71.3	71.5	71.7	0.4	1.5	No
383	Portola Parkway	Arrowhead to Ridge Valley Parkway	71.3	71.4	71.5	0.2	1.5	No
384	Portola Parkway	Sand Canyon Avenue to Arrowhead	70.9	71.0	71.1	0.2	1.5	No
385	Portola Parkway	Portola Springs to SR-241 SB Off-Ramp	70.0	70.1	70.1	0.1	1.5	No
386	Portola Parkway	Gatepark to Culver Drive	70.3	70.6	70.7	0.4	1.5	No
387	Portola Parkway	ETC-6 (SR-261) NB Off-Ramp to Gatepark	70.2	70.5	70.7	0.5	1.5	No
388	Portola Parkway	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.1	70.4	70.5	0.4	1.5	No
389	Portola Parkway	Jamboree Road to Bellevue	70.1	70.4	70.5	0.4	1.5	No
390	Portola Parkway	Bellevue to ETC-6 (SR-261) SB Off-Ramp	70.0	70.3	70.4	0.4	1.5	No
391	Portola Parkway	Yale Avenue to Jeffrey Road	69.8	70.1	70.2	0.4	1.5	No
392	Portola Parkway	Culver Drive to Yale Avenue	69.4	69.6	69.7	0.3	1.5	No
393	Portola Parkway	Silverado to Portola Springs	68.5	68.5	68.6	0.1	1.5	No
394	Pusan	Irvine Boulevard to Cadence	56.1	56.2	56.1	0.0	5.0	No
395	Quail Hill Parkway	Shady Canyon Drive to Passage	67.6	67.4	67.4	-0.2	1.5	No
396	Quail Hill Parkway	East Knollcrest to Laguna Canyon Road	65.6	65.5	65.5	-0.1	1.5	No
397	Quassar Drive (Spectrum)	Irvine Center Drive to Spectrum Center Drive (Fortune)	54.9	54.8	54.9	0.0	5.0	No
398	Red Hill Avenue	MacArthur Boulevard to McGaw Avenue	71.3	71.5	71.6	0.3	1.5	No
399	Red Hill Avenue	I-405 Over Crossing to Main Street	69.9	70.1	70.2	0.3	1.5	No
400	Red Hill Avenue	Alton Parkway to Deere Avenue	69.9	70.0	70.1	0.2	1.5	No
401	Red Hill Avenue	McGaw Avenue to Alton Parkway	69.7	69.9	70.0	0.3	1.5	No

Table 17

402	Red Hill Avenue	Deere Avenue to Barranca Parkway	69.7	69.8	69.9	0.2	1.5	No
403	Red Hill Avenue	Skypark East to MacArthur Boulevard	71.0	71.3	71.4	0.4	1.5	No
404	Red Hill Avenue	Main Street to Skypark East	70.4	70.6	70.8	0.4	1.5	No
405	Research Drive	Hubble to Bake Parkway	69.5	69.5	69.5	0.0	1.5	No
406	Research Drive	Scientific to Lake Forest Drive	67.6	67.4	67.8	0.2	1.5	No
407	Research Drive	Bake Parkway to Muller	66.5	66.6	66.7	0.2	1.5	No
408	Research Drive	Irvine Center Drive to Bunsen	65.5	65.6	65.7	0.2	1.5	No
409	Ridge Valley (O Street)	Irvine Boulevard to Trabuco Road (Great Park Boulevard)	67.4	67.3	67.3	-0.1	1.5	No
410	Ridge Valley (O Street)	Portola Parkway to Irvine Boulevard	66.5	66.4	66.4	-0.1	1.5	No
411	Ridge Valley (O Street)	Trabuco Road (Great Park Boulevard) to Marine Way	66.0	66.0	66.0	0.0	1.5	No
412	Ridge Valley (O Street)	Ranchland to Portola Parkway	58.1	58.1	58.1	0.0	5.0	No
413	Ridgeline Drive	Concordia East to University Drive	68.6	68.7	68.7	0.1	1.5	No
414	Ridgeline Drive	Turtle Rock Drive to San Simeon	68.2	68.4	68.4	0.2	1.5	No
415	Rockfield Avenue	Whatney to McLaren	67.5	67.6	67.7	0.2	1.5	No
416	Rockfield Avenue	Bake Parkway to Whatney	63.8	64.1	64.2	0.4	3.0	No
417	Rockfield Avenue	Thomas to Bake Parkway	62.6	63.1	63.1	0.5	3.0	No
418	Roosevelt	Jeffrey Road to Vision	66.1	66.5	66.6	0.5	1.5	No
419	Roosevelt	Yale Avenue to Van Buren	68.1	68.2	68.2	0.1	1.5	No
420	Roosevelt	Vision to Bay Tree	65.9	66.2	66.4	0.5	1.5	No
421	Roosevelt	Nimitz to Jeffrey Road	65.8	65.9	65.9	0.1	1.5	No
422	Roosevelt	Tulip (Road C) to Sand Canyon Avenue	65.6	65.6	65.7	0.1	1.5	No
423	Royal Oak	Alton Parkway to Eaglecreek	64.0	64.0	64.0	0.0	3.0	No
424	Sand Canyon Avenue	Oak Canyon Drive to Burt Road	71.9	72.1	72.1	0.2	1.5	No
425	Sand Canyon Avenue	Irvine Center Drive to Oak Canyon Drive	71.6	71.9	72.0	0.4	1.5	No
426	Sand Canyon Avenue	I-405 NB Off-Ramp to Alton Parkway	74.4	74.6	74.6	0.2	1.5	No
427	Sand Canyon Avenue	Burt Road to I-5 SB Off-Ramp	72.6	72.7	72.7	0.1	1.5	No
428	Sand Canyon Avenue	Marine to I-5 NB Off-Ramp	74.6	74.6	74.8	0.2	1.5	No
429	Sand Canyon Avenue	Trabuco Road to Towngate	71.3	71.1	71.3	0.0	1.5	No
430	Sand Canyon Avenue	Barranca Parkway to Waterworks	70.6	70.8	70.9	0.3	1.5	No
431	Sand Canyon Avenue	I-5 SB Off-Ramp to Marine	73.8	73.8	74.0	0.2	1.5	No
432	Sand Canyon Avenue	Hospital to Barranca Parkway	70.4	70.6	70.6	0.2	1.5	No
433	Sand Canyon Avenue	Nightmist to Roosevelt	73.4	73.5	73.5	0.1	1.5	No
434	Sand Canyon Avenue	I-405 SB Off-Ramp to I-405 NB Off-Ramp	73.4	73.5	73.5	0.1	1.5	No
435	Sand Canyon Avenue	I-5 NB Off-Ramp to Nightmist	73.5	73.5	73.7	0.2	1.5	No
436	Sand Canyon Avenue	Towngate to Irvine Boulevard	70.6	70.4	70.7	0.1	1.5	No
437	Sand Canyon Avenue	Waterworks to Irvine Center Drive	70.0	70.2	70.3	0.3	1.5	No
438	Sand Canyon Avenue	Irvine Boulevard to Portola Parkway	69.3	69.2	70.4	1.1	1.5	No

Table 17

439	Sand Canyon Avenue	Roosevelt to Trabuco Road	72.8	72.8	72.8	0.0	1.5	No
440	Sand Canyon Avenue	Alton Parkway to Hospital	70.5	70.6	70.6	0.1	1.5	No
441	Sand Canyon/Shady Canyon	Quail Hill Parkway to I-405 SB Ramps	71.6	71.7	71.8	0.2	1.5	No
442	Scientific Way	Irvine Center Drive to Wald	54.9	55.0	54.9	0.0	5.0	No
443	Shady Canyon Drive	Culver Drive/Bonita Canyon Drive to Cloverfield	68.8	69.2	69.2	0.4	1.5	No
444	Shady Canyon Drive	Bommer Canyon Road to Sunnyhill	67.3	67.5	67.6	0.3	1.5	No
445	Skyhawk	Great Park Boulevard to Marine Way	60.2	59.6	59.6	-0.6	3.0	No
446	Southwood	Yale Avenue to Colt	60.5	60.5	60.6	0.1	3.0	No
447	Southwood	Challenger to Yale Avenue	60.3	60.2	60.3	0.0	3.0	No
448	Spectrum Center Drive (Fortune Drive)	Pacifica to Quassar Drive (Spectrum )	61.9	61.9	62.0	0.1	3.0	No
449	Spectrum Center Drive (Fortune Drive)	Quassar Drive (Spectrum ) to Gatewayb	62.4	62.4	62.5	0.1	3.0	No
450	Sunnyhill	Shady Canyon Drive to Turtle Rock Drive	57.0	57.6	57.6	0.6	5.0	No
451	Technology Drive	Barranca Parkway to Alton Parkway	69.9	70.6	70.6	0.7	1.5	No
452	Technology Drive	Old Laguna Canyon Road to I-5/SR-133 Undercrossing	67.1	69.2	69.3	2.2	1.5	Yes
453	Technology Drive	I-5/SR-133 to Barranca Parkway	66.1	69.1	69.1	3.0	1.5	Yes
454	Technology Drive	Ada to Alton Parkway	59.9	63.0	63.1	3.2	5.0	No
455	Toledo Way	Bake Parkway to City Limits	65.8	65.7	65.7	-0.1	1.5	No
456	Toledo Way	Goodyear to Bake Parkway	64.9	64.7	64.7	-0.2	3.0	No
457	Toledo Way	Alton Parkway to Parker	64.5	64.3	64.4	-0.1	3.0	No
458	Trabuco Road	Keystone to Sand Canyon Avenue	67.0	67.1	67.2	0.2	1.5	No
459	Trabuco Road	Jeffrey Road to Keystone	66.9	66.9	66.9	0.0	1.5	No
460	Trabuco Road	Culver Drive to I-5 NB Off-Ramp	66.6	66.7	66.8	0.2	1.5	No
461	Trabuco Road	Monroe to Yale Avenue	66.5	66.6	66.7	0.2	1.5	No
462	Trabuco Road	I-5 NB Off-Ramp to Monroe	66.5	66.5	66.6	0.1	1.5	No
463	Trabuco Road	Yale Avenue to Remington	66.0	66.2	66.3	0.3	1.5	No
464	Trabuco Road	Remington to Jeffrey Road	66.0	66.0	66.1	0.1	1.5	No
465	Turtle Ridge Drive	Federation Way to Bonita Canyon	68.8	68.8	68.7	-0.1	1.5	No
466	Turtle Rock Drive	Ridgeline to Willowleaf	67.5	67.8	67.8	0.3	1.5	No
467	Turtle Rock Drive	Silkwood to Sunnyhill	67.4	67.7	67.8	0.4	1.5	No
468	Turtle Rock Drive	Canyon Park to Ridgeline	66.8	67.0	67.0	0.2	1.5	No
469	Turtle Rock Drive	Sunnyhill to Southernwood	64.0	64.0	64.0	0.0	3.0	No
470	Turtle Rock Drive	Campus Drive to Hillgate	64.0	64.1	64.0	0.0	3.0	No
471	Turtle Rock Drive	Paseo Segovia to Campus Drive	65.4	65.4	65.4	0.0	1.5	No
472	University Drive	Golden Glow to Yale Avenue	72.6	72.9	73.0	0.4	1.5	No
473	University Drive	Ridgeline to Michelson Drive	72.3	72.5	72.6	0.3	1.5	No
474	University Drive	Culver Drive to Golden Glow	72.5	72.8	72.9	0.4	1.5	No
475	University Drive	Yale Avenue to Ridgeline	72.2	72.3	72.4	0.2	1.5	No

Table 17

476	University Drive	Michelson Drive to I-405 SB Off-Ramp	72.4	72.7	72.7	0.3	1.5	No
477	University Drive	Mesa to Campus Drive	74.2	74.5	74.6	0.4	1.5	No
478	University Drive	MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	74.2	74.4	74.6	0.4	1.5	No
479	University Drive	California Avenue to Mesa	74.1	74.3	74.4	0.3	1.5	No
480	University Drive	Campus Drive to Harvard Avenue	70.3	70.6	70.7	0.4	1.5	No
481	University Drive	SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	71.3	71.5	71.7	0.4	1.5	No
482	University Drive	SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps	70.0	70.1	70.3	0.3	1.5	No
483	University Drive	San Joaquin to Culver Drive	69.4	69.7	69.8	0.4	1.5	No
484	University Drive	Harvard Avenue to San Joaquin	69.4	69.7	69.8	0.4	1.5	No
485	Valley Oak Drive	Hawkcreek to Barranca Parkway	68.0	68.0	68.0	0.0	1.5	No
486	Valley Oak Drive	Irvine Center Drive to Oak Canyon Drive	67.6	69.0	69.1	1.5	1.5	Yes
487	Valley Oak Drive	Barranca Parkway to Irvine Center Drive	65.7	66.7	66.8	1.1	1.5	No
488	Valley Oak Drive	Alton Parkway to Hawkcreek	65.0	64.8	64.8	-0.2	1.5	No
489	Von Karman Avenue	Marriott to Morse Avenue	70.6	70.9	70.9	0.3	1.5	No
490	Von Karman Avenue	Michelson Drive to Quartz	70.4	70.7	70.8	0.4	1.5	No
491	Von Karman Avenue	McGaw Avenue to Alton Parkway	70.1	70.7	70.7	0.6	1.5	No
492	Von Karman Avenue	Alton Parkway to Barranca Parkway	69.7	70.3	70.4	0.7	1.5	No
493	Von Karman Avenue	Main Street to Anchor	69.9	70.6	70.6	0.7	1.5	No
494	Von Karman Avenue	Anchor to McGaw Avenue	69.9	70.4	70.5	0.6	1.5	No
495	Von Karman Avenue	Morse to Main Street	69.9	70.2	70.2	0.3	1.5	No
496	Von Karman Avenue	Martin to Dupont Drive	69.2	69.5	69.6	0.4	1.5	No
497	Von Karman Avenue	Campus Drive to Martin	69.2	69.5	69.5	0.3	1.5	No
498	Von Karman Avenue	Dupont Drive to Michelson Drive	69.2	69.5	69.5	0.3	1.5	No
499	Walnut Avenue	Jeffrey Road to I-5 SB Off-Ramp	70.5	70.9	70.9	0.4	1.5	No
500	Walnut Avenue	Myford Road to Jamboree Road SB Off-Ramp	68.9	69.1	69.1	0.2	1.5	No
501	Walnut Avenue	The Mall Street to Culver Drive	68.5	68.7	68.8	0.3	1.5	No
502	Walnut Avenue	Harvard Avenue to The Mall Street	68.4	68.7	68.7	0.3	1.5	No
503	Walnut Avenue	Franciscan Street to Ravenwood Street	68.1	68.4	68.5	0.4	1.5	No
504	Walnut Avenue	Ravenwood Street to Yale Avenue	68.1	68.4	68.3	0.2	1.5	No
505	Walnut Avenue	Culver Drive to Franciscan Street	68.1	68.3	68.4	0.3	1.5	No
506	Walnut Avenue	Peters Canyon Road to Harvard Avenue	67.6	67.9	68.0	0.4	1.5	No
507	Walnut Avenue	Jamboree Road NB Off-Ramp to Peters Canyon Road	67.5	67.8	67.8	0.3	1.5	No
508	Walnut Avenue	Yale Avenue to Kazan Street	67.0	67.1	67.2	0.2	1.5	No
509	Walnut Avenue	Wisteria to Jeffrey Road	67.0	67.1	67.2	0.2	1.5	No
510	Warner Avenue	Jamboree Road SB Off-ramp to Construction North	70.1	70.2	70.1	0.0	1.5	No
511	Warner Avenue	Construction North to Harvard Avenue	68.4	68.6	68.5	0.1	1.5	No
512	Warner Avenue	Harvard Avenue to Paseo Westpark	66.8	67.0	67.0	0.2	1.5	No



Table 17

513	Warner Avenue	Santa Ynez to Culver Drive	65.6	66.0	66.0	0.4	1.5	No
514	Warner Avenue	Culver Drive to West Yale Loop	65.1	65.7	65.7	0.6	1.5	No
515	West Yale Loop	Alton Parkway to Blue Lake North	64.0	64.0	64.0	0.0	3.0	No
516	West Yale Loop	Eagle Run to Main Street	63.8	63.8	63.9	0.1	3.0	No
517	West Yale Loop	Thunder Run to Yale Avenue	63.6	63.9	63.9	0.3	3.0	No
518	West Yale Loop	Main Street to Timber Run	62.9	62.9	62.8	-0.1	3.0	No
519	West Yale Loop	Yale Avenue to Shorebird	62.1	62.9	63.0	0.9	3.0	No
520	West Yale Loop	Warner Avenue to Stonecreek South	62.4	62.6	62.6	0.2	3.0	No
521	West Yale Loop	Barranca Parkway to Alton Parkway	62.4	62.4	62.4	0.0	3.0	No
522	West Yale Loop	Stonecreek North to Warner Avenue	62.0	62.4	62.5	0.5	3.0	No
523	West Yale Loop	Birdsong to Barranca Parkway	62.2	62.3	62.3	0.1	3.0	No
524	Westwood	Yorktown to Bryan Avenue	63.6	63.6	63.5	-0.1	3.0	No
525	Westwood	Bryan Avenue to Leaf	61.6	61.5	61.5	-0.1	3.0	No
526	Yale Avenue	Deerfield Avenue to Winvale Avenue	68.6	68.6	68.6	0.0	1.5	No
527	Yale Avenue	Hicks Canyon Drive to Meadowood	67.4	67.3	67.3	-0.1	1.5	No
528	Yale Avenue	Walnut Avenue to Roosevelt	70.9	71.0	71.0	0.1	1.5	No
529	Yale Avenue	Roosevelt to Trabuco Road	67.1	67.0	67.1	0.0	1.5	No
530	Yale Avenue	Irvine Center Drive to Deerfield Avenue	67.0	66.9	66.9	-0.1	1.5	No
531	Yale Avenue	West Yale Loop to Irvine Center Drive	65.8	66.3	66.4	0.6	1.5	No
532	Yale Avenue	Winvale Avenue to Karen Ann Lane	65.7	65.7	65.7	0.0	1.5	No
533	Yale Avenue	Karen Ann Lane to Walnut Avenue	65.7	65.7	65.7	0.0	1.5	No
534	Yale Avenue	Trabuco Road to Southwood	65.6	65.6	65.7	0.1	1.5	No
535	Yale Avenue	Southwood to Bryan Avenue	65.6	65.4	65.5	-0.1	1.5	No
536	Yale Avenue	Northwood to Irvine Boulevard	65.3	65.1	65.1	-0.2	1.5	No
537	Yale Avenue	Bryan Avenue to Monticello	65.2	65.0	65.0	-0.2	1.5	No
538	Yale Avenue	Irvine Boulevard to Park Place	64.3	64.3	64.3	0.0	3.0	No
539	Yale Avenue	University Drive to Royce	63.0	63.4	63.5	0.5	3.0	No
540	Yale Court	Arborwood to Portola Parkway	60.3	60.3	60.3	0.0	3.0	No
<sup>1</sup> Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses. <sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use. <sup>3</sup> Does the Project create an incremental noise level increase exceeding the significance criteria?								

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Ada  
 Road Segment: Barranca Parway to Marine Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 0 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-42.27	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-59.51	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-63.47	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	24.9	23.8	22.0	16.0	24.6	25.2	
Medium Trucks:	18.9	18.2	11.8	10.3	18.7	19.0	
Heavy Trucks:	20.2	19.6	10.5	11.8	20.1	20.3	
Vehicle Noise:	26.9	26.0	22.7	18.2	26.7	27.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	0
CNEL:	0	0	0	1

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Ada  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,000 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	330 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-6.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-23.49	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-27.45	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.0	56.9	55.2	49.1	57.7	58.4
Medium Trucks:	52.0	51.3	45.0	43.4	51.9	52.1
Heavy Trucks:	53.3	52.7	43.7	44.9	53.3	53.4
Vehicle Noise:	60.0	59.1	55.8	51.3	59.8	60.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	13	28	61	131
CNEL:	14	30	65	141

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Enterprise to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 42,200 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,482 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.01	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.23	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.19	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.3	66.5	60.4	69.1	69.7
Medium Trucks:	62.9	62.2	55.8	54.3	62.8	63.0
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4
Vehicle Noise:	71.0	70.1	67.0	62.3	70.8	71.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	95	205	442	952
CNEL:	102	220	475	1,022

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: I-5 NB Off-Ramp to Technology Drive West

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,787 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.37	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.86	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.82	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.1	69.0	67.3	61.2	69.8	70.4	
Medium Trucks:	63.7	63.0	56.6	55.1	63.5	63.8	
Heavy Trucks:	64.1	63.5	54.4	55.7	64.1	64.2	
Vehicle Noise:	71.8	70.9	67.8	63.0	71.6	72.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	102	220	474	1,021
CNEL:	110	236	509	1,097

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: East Yale Loop to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,100 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,401 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.39	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.84	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.80	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.4	68.3	66.5	60.5	69.1	69.7	
Medium Trucks:	62.9	62.2	55.9	54.3	62.8	63.0	
Heavy Trucks:	63.3	62.7	53.7	55.0	63.3	63.4	
Vehicle Noise:	71.0	70.1	67.1	62.3	70.8	71.3	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	153	331	712
CNEL:	77	165	355	765

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Gateway Boulevard to Enterprise

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,211 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.04	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.20	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.16	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.3	66.3	64.5	58.5	67.1	67.7	
Medium Trucks:	60.9	60.2	53.9	52.3	60.8	61.0	
Heavy Trucks:	61.3	60.7	51.7	53.0	61.3	61.4	
Vehicle Noise:	69.0	68.1	65.1	60.3	68.8	69.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	151	326	703
CNEL:	76	163	351	755

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Jeffrey Road to Royal Oak

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,815 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.01	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.1	65.3	59.3	67.9	68.5
Medium Trucks:	61.7	61.0	54.7	53.1	61.6	61.8
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	69.8	68.9	65.9	61.1	69.6	70.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	274	591
CNEL:	63	137	295	635



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Daimler Street to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	5,000 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	413 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		57.786		
Left View:	-90.0 degrees	Medium Trucks:		57.717		
Right View:	90.0 degrees	Heavy Trucks:		57.787		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-6.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-23.49	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-27.45	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.7	60.6	58.9	52.8	61.4	62.0
Medium Trucks:	55.3	54.6	48.2	46.7	55.2	55.4
Heavy Trucks:	55.7	55.1	46.1	47.3	55.7	55.8
Vehicle Noise:	63.4	62.5	59.4	54.7	63.2	63.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	102	220
CNEL:	24	51	110	236

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,947 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.75	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.71	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.4	65.6	59.6	68.2	68.8
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.4	61.8	52.8	54.1	62.4	62.5
Vehicle Noise:	70.1	69.2	66.2	61.4	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	287	619
CNEL:	67	143	309	665

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: West Yale Loop to Lake Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,100 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,906 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.39	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.85	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.80	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0
Heavy Trucks:	62.3	61.7	52.7	54.0	62.3	62.4
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	283	611
CNEL:	66	141	304	656

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Technology Drive West to Ada

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,459 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.50	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.74	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.70	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.2	65.4	59.3	68.0	68.6
Medium Trucks:	61.8	61.1	54.7	53.2	61.7	61.9
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	69.9	69.0	65.9	61.2	69.7	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	355	765
CNEL:	82	177	382	822

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Creek Road to East Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,100 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,823 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.20	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.04	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.99	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.1	65.3	59.3	67.9	68.5
Medium Trucks:	61.7	61.1	54.7	53.1	61.6	61.8
Heavy Trucks:	62.1	61.6	52.5	53.8	62.1	62.2
Vehicle Noise:	69.9	68.9	65.9	61.1	69.7	70.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	128	275	593
CNEL:	64	137	296	637

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Red Hill Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,900 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,147 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.01	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.1	65.1	63.3	57.3	65.9	66.5	
Medium Trucks:	59.7	59.0	52.7	51.1	59.6	59.8	
Heavy Trucks:	60.1	59.5	50.5	51.8	60.1	60.2	
Vehicle Noise:	67.8	66.9	63.9	59.1	67.6	68.1	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	94	202	435
CNEL:	47	101	217	468

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Lake Road to Creek Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,799 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.05	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.1	67.0	65.3	59.2	67.8	68.4	
Medium Trucks:	61.7	61.0	54.6	53.1	61.5	61.8	
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2	
Vehicle Noise:	69.8	68.9	65.8	61.0	69.6	70.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	273	587
CNEL:	63	136	293	631

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Telemetry to Banting

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,100 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,411 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.91	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.15	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.11	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	66.0	64.2	58.2	66.8	67.4
Medium Trucks:	60.6	59.9	53.6	52.0	60.5	60.7
Heavy Trucks:	61.0	60.4	51.4	52.7	61.0	61.1
Vehicle Noise:	68.7	67.8	64.8	60.0	68.5	69.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	108	232	500
CNEL:	54	116	249	537



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Irvine Boulevard to Commercentre

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 33,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,789 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.05	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.19	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.15	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.3	65.5	59.5	68.1	68.7	
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0	
Heavy Trucks:	62.3	61.7	52.7	54.0	62.3	62.4	
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	381	821
CNEL:	88	190	409	882

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Jenner to Telemetry

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,403 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.94	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.18	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.13	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.0	66.0	64.2	58.1	66.8	67.4	
Medium Trucks:	60.6	59.9	53.6	52.0	60.5	60.7	
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1	
Vehicle Noise:	68.7	67.8	64.8	60.0	68.5	69.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	107	231	498
CNEL:	53	115	248	535

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Irvine Center Drive to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,889 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.35	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.88	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.84	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.6	63.8	57.8	66.4	67.0
Medium Trucks:	60.2	59.6	53.2	51.6	60.1	60.3
Heavy Trucks:	60.6	60.1	51.0	52.3	60.6	60.7
Vehicle Noise:	68.4	67.4	64.4	59.6	68.2	68.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	294	633
CNEL:	68	147	316	680

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Sand Canyon Avenue to Hospital

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,153 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.92	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.32	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.27	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.2	69.1	67.4	61.3	69.9	70.5	
Medium Trucks:	63.8	63.1	56.7	55.2	63.6	63.9	
Heavy Trucks:	64.2	63.6	54.5	55.8	64.1	64.3	
Vehicle Noise:	71.9	71.0	67.9	63.1	71.7	72.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	167	360	776
CNEL:	83	180	387	834

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Laguna Canyon Road to Jenner

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,403 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.94	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.18	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.13	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	66.0	64.2	58.1	66.8	67.4
Medium Trucks:	60.6	59.9	53.6	52.0	60.5	60.7
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1
Vehicle Noise:	68.7	67.8	64.8	60.0	68.5	69.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	107	231	498
CNEL:	53	115	248	535

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing	Project Name: Irvine GP
Road Name: Alton Parkway	Job Number: 15937
Road Segment: Technology Drive East to Barranca Pkwy/Muirlands Blvd	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,800 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 2,129 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 50 mph																					
Near/Far Lane Distance: 78 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 84.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 84.0 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 74.458																				
Left View: -90.0 degrees	Medium Trucks: 74.404																				
Right View: 90.0 degrees	Heavy Trucks: 74.458																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.87	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.37	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.32	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.1	64.3	58.3	66.9	67.5
Medium Trucks:	60.7	60.1	53.7	52.2	60.6	60.9
Heavy Trucks:	61.2	60.6	51.5	52.8	61.1	61.3
Vehicle Noise:	68.9	68.0	64.9	60.1	68.7	69.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	148	318	685
CNEL:	74	159	342	736

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Royal Oak to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,551 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.50	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.74	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.70	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.4	64.6	58.6	67.2	67.8
Medium Trucks:	61.0	60.3	54.0	52.4	60.9	61.1
Heavy Trucks:	61.4	60.8	51.8	53.1	61.4	61.5
Vehicle Noise:	69.2	68.2	65.2	60.4	69.0	69.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	115	247	532
CNEL:	57	123	265	572

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Banting to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,221 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.78	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.74	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.4	65.4	63.6	57.5	66.2	66.8	
Medium Trucks:	60.0	59.3	52.9	51.4	59.9	60.1	
Heavy Trucks:	60.4	59.8	50.8	52.0	60.4	60.5	
Vehicle Noise:	68.1	67.2	64.2	59.4	67.9	68.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	98	211	454
CNEL:	49	105	226	487



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Barranca Pkwy/Muirlands Blvd to Jeronimo Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,200 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,657 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.83	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.40	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.36	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.1	65.3	59.3	67.9	68.5
Medium Trucks:	61.7	61.0	54.7	53.1	61.6	61.8
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	69.8	68.9	65.9	61.1	69.6	70.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	171	369	795
CNEL:	85	184	396	854

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Ada to Technology Drive East

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,200 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,162 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.94	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.30	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.26	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.2	64.4	58.4	67.0	67.6
Medium Trucks:	60.8	60.1	53.8	52.2	60.7	60.9
Heavy Trucks:	61.2	60.6	51.6	52.9	61.2	61.3
Vehicle Noise:	68.9	68.0	65.0	60.2	68.7	69.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	149	321	693
CNEL:	74	160	345	744

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,900 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,312 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.47	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.42	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.8	66.5	67.1
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4
Heavy Trucks:	60.7	60.1	51.1	52.3	60.7	60.8
Vehicle Noise:	68.4	67.5	64.5	59.7	68.2	68.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	221	476
CNEL:	51	110	237	511

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Jeronimo Road to Hughes

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,900 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,467 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.51	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.73	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.68	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.8	65.0	58.9	67.6	68.2
Medium Trucks:	61.4	60.7	54.3	52.8	61.3	61.5
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	69.5	68.6	65.6	60.8	69.3	69.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	163	351	756
CNEL:	81	175	377	813

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Hughes to Morgan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,335 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.27	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.96	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.92	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.6	66.5	64.8	58.7	67.3	67.9	
Medium Trucks:	61.1	60.5	54.1	52.6	61.0	61.3	
Heavy Trucks:	61.6	61.0	51.9	53.2	61.5	61.7	
Vehicle Noise:	69.3	68.4	65.3	60.5	69.1	69.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	338	729
CNEL:	78	169	364	783

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Morgan to Toledo Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,972 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.54	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.70	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.65	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.8	65.8	64.0	58.0	66.6	67.2	
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5	
Heavy Trucks:	60.8	60.2	51.2	52.5	60.8	60.9	
Vehicle Noise:	68.5	67.6	64.6	59.8	68.3	68.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	140	302	651
CNEL:	70	151	325	700

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: San Marino to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,900 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,972 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.54	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.70	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.65	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.8	64.0	58.0	66.6	67.2
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5
Heavy Trucks:	60.8	60.2	51.2	52.5	60.8	60.9
Vehicle Noise:	68.5	67.6	64.6	59.8	68.3	68.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	140	302	651
CNEL:	70	151	325	700

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Jamboree Road to Murphy Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,650 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.23	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.47	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.43	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.1	65.0	63.2	57.2	65.8	66.4	
Medium Trucks:	59.6	59.0	52.6	51.1	59.5	59.8	
Heavy Trucks:	60.1	59.5	50.4	51.7	60.0	60.2	
Vehicle Noise:	67.8	66.8	63.8	59.0	67.6	68.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	268	578
CNEL:	62	134	288	621



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Hospital to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,700 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,543 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.53	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.76	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.72	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.7	65.9	59.8	68.5	69.1
Medium Trucks:	62.3	61.6	55.3	53.7	62.2	62.4
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.4	69.5	66.5	61.7	70.2	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	134	289	622
CNEL:	67	144	310	668

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,500 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,691 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.13	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.36	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.32	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.1	66.3	60.2	68.9	69.5
Medium Trucks:	62.7	62.0	55.7	54.1	62.6	62.8
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	70.8	69.9	66.9	62.1	70.6	71.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	142	307	661
CNEL:	71	153	330	710

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Murphy Avenue to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,300 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,675 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.17	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.41	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.36	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	65.1	63.3	57.3	65.9	66.5
Medium Trucks:	59.7	59.0	52.7	51.1	59.6	59.8
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2
Vehicle Noise:	67.8	66.9	63.9	59.1	67.6	68.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	126	271	584
CNEL:	63	135	291	628

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Foster to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,700 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,625 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.30	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.54	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.49	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.2	57.1	65.7	66.4
Medium Trucks:	59.6	58.9	52.5	51.0	59.5	59.7
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1
Vehicle Noise:	67.7	66.8	63.7	59.0	67.5	68.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	123	266	573
CNEL:	62	133	286	615

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Fairbanks to Foster

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,469 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.74	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.98	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.93	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.5	62.7	56.7	65.3	65.9
Medium Trucks:	59.1	58.5	52.1	50.6	59.0	59.2
Heavy Trucks:	59.5	59.0	49.9	51.2	59.5	59.7
Vehicle Noise:	67.3	66.3	63.3	58.5	67.1	67.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	115	248	535
CNEL:	58	124	267	575

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Toledo Way to Bertea

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,716 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.06	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.30	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.26	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.2	65.2	63.4	57.4	66.0	66.6	
Medium Trucks:	59.8	59.1	52.8	51.2	59.7	59.9	
Heavy Trucks:	60.2	59.6	50.6	51.9	60.2	60.3	
Vehicle Noise:	67.9	67.0	64.0	59.2	67.7	68.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	128	276	594
CNEL:	64	137	296	638

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Pacifica to Meridian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,221 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.54	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.78	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.74	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.7	64.9	58.8	67.5	68.1
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4
Heavy Trucks:	61.7	61.1	52.1	53.3	61.7	61.8
Vehicle Noise:	69.4	68.5	65.5	60.7	69.2	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	115	247	532
CNEL:	57	123	265	571

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Bertea to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,300 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,675 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.17	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.41	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.36	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.1	65.1	63.3	57.3	65.9	66.5	
Medium Trucks:	59.7	59.0	52.7	51.1	59.6	59.8	
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2	
Vehicle Noise:	67.8	66.9	63.9	59.1	67.6	68.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	126	271	584
CNEL:	63	135	291	628



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Meridian to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,400 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,188 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.66	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-18.90	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-22.85	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.6	63.6	61.8	55.8	64.4	65.0	
Medium Trucks:	58.2	57.5	51.2	49.6	58.1	58.3	
Heavy Trucks:	58.6	58.0	49.0	50.3	58.6	58.7	
Vehicle Noise:	66.3	65.4	62.4	57.6	66.1	66.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	100	216	465
CNEL:	50	108	232	499

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Paseo Westpark to San Marino

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,601 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.37	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.60	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.56	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.9	63.1	57.1	65.7	66.3
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0
Vehicle Noise:	67.6	66.7	63.7	58.9	67.4	67.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	122	263	567
CNEL:	61	131	283	609

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,500 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,279 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.34	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-18.58	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-22.53	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.0	63.9	62.1	56.1	64.7	65.3
Medium Trucks:	58.5	57.9	51.5	50.0	58.4	58.6
Heavy Trucks:	58.9	58.4	49.3	50.6	58.9	59.1
Vehicle Noise:	66.7	65.7	62.7	57.9	66.5	66.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	105	227	488
CNEL:	52	113	243	524

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Astor  
 Road Segment: Lynx to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,200 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	182 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-7.60	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-24.84	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-28.80	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.8	53.7	52.0	45.9	54.5	55.1
Medium Trucks:	49.3	48.6	42.3	40.7	49.2	49.4
Heavy Trucks:	51.8	51.2	42.1	43.4	51.7	51.9
Vehicle Noise:	57.3	56.4	52.8	48.6	57.1	57.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	11	24	52
CNEL:	6	12	26	55

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Astor  
 Road Segment: Cadence to Lynx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 0 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-41.03	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-58.26	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-62.22	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	21.4	20.3	18.5	12.5	21.1	21.7
Medium Trucks:	15.9	15.2	8.8	7.3	15.8	16.0
Heavy Trucks:	18.3	17.7	8.7	10.0	18.3	18.4
Vehicle Noise:	23.9	23.0	19.4	15.2	23.7	24.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	0
CNEL:	0	0	0	0

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Bake Parkway  
 Road Segment: I-5 NB Off-Ramp to Rockfield Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 71,500 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,899 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	56.593			
Road Grade: 0.0%	Medium Trucks:	56.522			
Left View: -90.0 degrees	Heavy Trucks:	56.593			
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	5.30	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-11.94	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-15.90	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.4	72.3	70.6	64.5	73.1	73.7	
Medium Trucks:	67.0	66.3	59.9	58.4	66.8	67.1	
Heavy Trucks:	67.4	66.8	57.8	59.0	67.4	67.5	
Vehicle Noise:	75.1	74.2	71.1	66.3	74.9	75.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	212	456	983	2,118
CNEL:	228	490	1,056	2,276

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Bake Parkway  
 Road Segment: Muirlands Boulevard to Jeronimo Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 58,900 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,859 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.46	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-12.78	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-16.74	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.7	67.9	61.9	70.5	71.1
Medium Trucks:	64.3	63.7	57.3	55.7	64.2	64.4
Heavy Trucks:	64.7	64.2	55.1	56.4	64.7	64.9
Vehicle Noise:	72.5	71.5	68.5	63.7	72.3	72.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	119	256	552	1,188
CNEL:	128	275	593	1,277

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Bake Parkway  
 Road Segment: Rockfield Boulevard to Muirlands Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 61,900 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,107 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 56.593				
Road Grade: 0.0%	Medium Trucks: 56.522				
Left View: -90.0 degrees	Heavy Trucks: 56.593				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.67	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-12.57	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-16.52	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.8	71.7	69.9	63.9	72.5	73.1	
Medium Trucks:	66.3	65.7	59.3	57.8	66.2	66.4	
Heavy Trucks:	66.7	66.2	57.1	58.4	66.7	66.9	
Vehicle Noise:	74.5	73.5	70.5	65.7	74.3	74.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	192	415	893	1,924
CNEL:	207	445	960	2,067



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Bake Parkway  
 Road Segment: Jeronimo Road to Toledo Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 48,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,001 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.61	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.62	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.58	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	68.9	67.1	61.0	69.7	70.3
Medium Trucks:	63.5	62.8	56.4	54.9	63.4	63.6
Heavy Trucks:	63.9	63.3	54.3	55.5	63.9	64.0
Vehicle Noise:	71.6	70.7	67.7	62.9	71.4	71.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	104	225	485	1,044
CNEL:	112	242	521	1,122

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Bake Parkway  
 Road Segment: Toledo Way to Cromwell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,704 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.28	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.96	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.92	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.8	60.7	69.3	69.9
Medium Trucks:	63.1	62.5	56.1	54.6	63.0	63.3
Heavy Trucks:	63.6	63.0	53.9	55.2	63.5	63.7
Vehicle Noise:	71.3	70.4	67.3	62.5	71.1	71.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	99	214	460	992
CNEL:	107	230	495	1,066

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Bake Parkway  
 Road Segment: Cromwell to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 43,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,581 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.13	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.11	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.06	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.4	68.4	66.6	60.6	69.2	69.8	
Medium Trucks:	63.0	62.3	56.0	54.4	62.9	63.1	
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5	
Vehicle Noise:	71.1	70.2	67.2	62.4	70.9	71.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	209	450	970
CNEL:	104	224	483	1,042

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Bake Parkway  
 Road Segment: Research Drive to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,100 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,823 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.20	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.04	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.99	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.4	63.7	57.6	66.2	66.8
Medium Trucks:	60.1	59.4	53.0	51.5	60.0	60.2
Heavy Trucks:	60.5	59.9	50.9	52.1	60.5	60.6
Vehicle Noise:	68.2	67.3	64.2	59.5	68.0	68.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	287	618
CNEL:	66	143	308	664

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Bake Parkway  
 Road Segment: Irvine Center Drive to Research Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,000 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	660 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	84.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 74.458				
Road Grade:	0.0%	Medium Trucks: 74.404				
Left View:	-90.0 degrees	Heavy Trucks: 74.458				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-21.45	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-25.41	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.1	61.0	59.3	53.2	61.8	62.4
Medium Trucks:	55.7	55.0	48.6	47.1	55.5	55.8
Heavy Trucks:	56.1	55.5	46.5	47.7	56.1	56.2
Vehicle Noise:	63.8	62.9	59.8	55.0	63.6	64.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	68	146	314
CNEL:	34	73	157	337

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Bake Parkway  
 Road Segment: Lake Forest Drive to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,900 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	404 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	84.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 74.458				
Road Grade:	0.0%	Medium Trucks: 74.404				
Left View:	-90.0 degrees	Heavy Trucks: 74.458				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-6.34	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-23.58	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-27.54	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.0	58.9	57.1	51.1	59.7	60.3
Medium Trucks:	53.5	52.9	46.5	44.9	53.4	53.6
Heavy Trucks:	53.9	53.4	44.3	45.6	53.9	54.1
Vehicle Noise:	61.7	60.7	57.7	52.9	61.5	61.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	49	105	226
CNEL:	24	52	113	243

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Banting  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 3,000 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 248 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 35 mph					
Near/Far Lane Distance: 48 feet					
	<b>Vehicle Mix</b>				
	VehicleType	Day	Evening	Night	Daily
	Autos: 77.5% 12.9% 9.6% 97.42%				
	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000				
Centerline Dist. to Barrier: 62.5 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Centerline Dist. to Observer: 62.5 feet					
Barrier Distance to Observer: 0.0 feet					
Observer Height (Above Pad): 5.0 feet					
Pad Elevation: 0.0 feet					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade: 0.0%	Autos: 57.786				
Left View: -90.0 degrees	Medium Trucks: 57.717				
Right View: 90.0 degrees	Heavy Trucks: 57.787				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-6.92	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-24.16	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-28.12	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	55.1	54.1	52.3	46.2	54.9	55.5	
Medium Trucks:	49.3	48.7	42.3	40.8	49.2	49.5	
Heavy Trucks:	51.2	50.6	41.6	42.8	51.2	51.3	
Vehicle Noise:	57.4	56.5	53.0	48.6	57.2	57.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	41	87
CNEL:	9	20	43	93

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Pacifica to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,576 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.85	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.09	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.04	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.9	59.8	68.4	69.0	
Medium Trucks:	62.1	61.4	55.0	53.5	62.0	62.2	
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2	
Vehicle Noise:	70.3	69.3	66.4	61.5	70.1	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	293	631
CNEL:	68	146	315	679



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Banting to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,642 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.67	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.91	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.86	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	62.3	61.6	55.2	53.7	62.1	62.4
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.4	69.5	66.6	61.7	70.2	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	140	301	649
CNEL:	70	150	324	698

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: I-5 HOV Ramp to Technology Drive West

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 16,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,337 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
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### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.76	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	66.9	65.1	59.1	67.7	68.3
Medium Trucks:	61.4	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5
Vehicle Noise:	69.6	68.6	65.7	60.8	69.3	69.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	122	262	566
CNEL:	61	131	282	608

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Technology Drive West to Ada

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 18,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,543 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.94	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.18	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.13	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	68.9
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	70.2	69.2	66.3	61.4	70.0	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	134	289	622
CNEL:	67	144	311	669

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Irvine Center Drive to I-5 HOV Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,180 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.30	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.4	66.4	64.6	58.5	67.2	67.8	
Medium Trucks:	60.8	60.1	53.8	52.2	60.7	60.9	
Heavy Trucks:	60.9	60.3	51.2	52.5	60.8	61.0	
Vehicle Noise:	69.0	68.1	65.1	60.3	68.8	69.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	112	242	520
CNEL:	56	121	260	560

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,178 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.68	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.64	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.0	67.3	61.2	69.8	70.4
Medium Trucks:	63.5	62.8	56.5	54.9	63.4	63.6
Heavy Trucks:	63.5	62.9	53.9	55.1	63.5	63.6
Vehicle Noise:	71.7	70.7	67.8	62.9	71.5	71.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	169	364	783
CNEL:	84	182	391	843

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: East Yale Loop to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,700 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,038 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.97	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.93	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	67.0	60.9	69.5	70.1
Medium Trucks:	63.2	62.5	56.2	54.6	63.1	63.3
Heavy Trucks:	63.2	62.6	53.6	54.9	63.2	63.3
Vehicle Noise:	71.4	70.5	67.5	62.6	71.2	71.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	348	749
CNEL:	81	174	374	806

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: West Yale Loop to Lake Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,021 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.00	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.96	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.8	68.7	66.9	60.9	69.5	70.1	
Medium Trucks:	63.2	62.5	56.1	54.6	63.0	63.3	
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3	
Vehicle Noise:	71.3	70.4	67.5	62.6	71.1	71.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	346	745
CNEL:	80	173	372	802

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Ada to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,469 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.35	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.3	65.6	59.5	68.1	68.7	
Medium Trucks:	61.8	61.1	54.7	53.2	61.7	61.9	
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9	
Vehicle Noise:	70.0	69.0	66.1	61.2	69.8	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	280	602
CNEL:	65	140	301	648



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Lake Road to Creek Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,848 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.16	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.35	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.4	68.3	66.5	60.5	69.1	69.7	
Medium Trucks:	62.8	62.1	55.7	54.2	62.7	62.9	
Heavy Trucks:	62.8	62.2	53.2	54.4	62.8	62.9	
Vehicle Noise:	71.0	70.0	67.1	62.2	70.8	71.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	151	326	702
CNEL:	76	163	350	755

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Red Hill Avenue to Armstrong Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,912 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.82	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-15.42	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-19.37	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.5	70.4	68.7	62.6	71.2	71.8	
Medium Trucks:	64.9	64.2	57.8	56.3	64.8	65.0	
Heavy Trucks:	64.9	64.3	55.3	56.5	64.9	65.0	
Vehicle Noise:	73.1	72.1	69.2	64.3	72.9	73.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	155	335	721	1,553
CNEL:	167	360	775	1,671

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Discovery/Herchel to Banting

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,900 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,312 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.64	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.88	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.84	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.8	65.1	59.0	67.6	68.2
Medium Trucks:	61.3	60.6	54.2	52.7	61.2	61.4
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4
Vehicle Noise:	69.5	68.5	65.6	60.7	69.3	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	120	259	559
CNEL:	60	129	279	601

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Lyon to East Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,757 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.61	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.57	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.1	66.3	60.3	68.9	69.5
Medium Trucks:	62.6	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	70.7	69.8	66.9	62.0	70.5	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	146	315	679
CNEL:	73	157	339	730

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Creek Road to Lyon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,900 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,724 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.46	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.69	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.65	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.2	60.2	68.8	69.4
Medium Trucks:	62.5	61.8	55.4	53.9	62.4	62.6
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	70.7	69.7	66.8	61.9	70.5	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	311	670
CNEL:	72	155	335	721

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,591 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.31	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.93	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.88	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.8	60.7	69.3	69.9
Medium Trucks:	63.0	62.3	56.0	54.4	62.9	63.1
Heavy Trucks:	63.0	62.4	53.4	54.7	63.0	63.1
Vehicle Noise:	71.2	70.3	67.3	62.4	71.0	71.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	200	432	930
CNEL:	100	216	464	1,001

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Sand Canyon Avenue to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 990 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.87	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-20.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-24.06	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.7	65.6	63.8	57.8	66.4	67.0	
Medium Trucks:	60.1	59.4	53.0	51.5	59.9	60.2	
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2	
Vehicle Noise:	68.2	67.3	64.4	59.5	68.0	68.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	100	215	463
CNEL:	50	107	231	498

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Armstrong Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 35,200 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,904 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.81	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.43	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.39	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.0	67.3	61.2	69.8	70.4
Medium Trucks:	63.5	62.8	56.5	54.9	63.4	63.6
Heavy Trucks:	63.5	62.9	53.9	55.1	63.5	63.6
Vehicle Noise:	71.7	70.8	67.8	62.9	71.5	72.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	466	1,004
CNEL:	108	233	501	1,080



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,130 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.53	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.48	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.2	64.4	58.4	67.0	67.6
Medium Trucks:	60.6	60.0	53.6	52.1	60.5	60.8
Heavy Trucks:	60.7	60.1	51.0	52.3	60.6	60.8
Vehicle Noise:	68.8	67.9	64.9	60.1	68.6	69.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	109	235	506
CNEL:	54	117	253	544

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Jamboree Road to Construction Circle

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,500 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,104 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.41	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.83	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.79	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.2	65.5	59.4	68.0	68.6
Medium Trucks:	61.7	61.0	54.6	53.1	61.6	61.8
Heavy Trucks:	61.7	61.1	52.1	53.3	61.7	61.8
Vehicle Noise:	69.9	68.9	66.0	61.1	69.7	70.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	172	370	798
CNEL:	86	185	399	859

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Santa Rosa to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,600 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,947 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.07	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.17	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.12	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	66.9	65.1	59.1	67.7	68.3
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5
Vehicle Noise:	69.5	68.6	65.7	60.8	69.3	69.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	163	352	758
CNEL:	82	176	378	815

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: FedEx to Discovery/Herchel

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,056 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.59	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.82	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.78	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.9	65.9	64.1	58.1	66.7	67.3
Medium Trucks:	60.3	59.7	53.3	51.8	60.2	60.5
Heavy Trucks:	60.4	59.8	50.7	52.0	60.4	60.5
Vehicle Noise:	68.5	67.6	64.6	59.8	68.3	68.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	104	224	483
CNEL:	52	112	241	520

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Jeffrey Road to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 949 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-3.05	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-20.29	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-24.25	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.5	65.4	63.7	57.6	66.2	66.8	
Medium Trucks:	59.9	59.2	52.8	51.3	59.8	60.0	
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0	
Vehicle Noise:	68.1	67.1	64.2	59.3	67.9	68.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	97	209	450
CNEL:	48	104	225	484

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Laguna Canyon Road to FedEx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,700 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,048 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.62	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.86	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.81	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.9	65.9	64.1	58.0	66.7	67.3
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4
Heavy Trucks:	60.3	59.7	50.7	52.0	60.3	60.4
Vehicle Noise:	68.5	67.6	64.6	59.7	68.3	68.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	104	223	481
CNEL:	52	111	240	517

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Pullman Street to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,500 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,516 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.19	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-16.05	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-20.01	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.9	69.8	68.0	62.0	70.6	71.2
Medium Trucks:	64.2	63.6	57.2	55.7	64.1	64.4
Heavy Trucks:	64.3	63.7	54.7	55.9	64.3	64.4
Vehicle Noise:	72.4	71.5	68.6	63.7	72.2	72.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	141	303	654	1,409
CNEL:	152	327	703	1,516

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Construction Circle to Fire Station

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,782 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.31	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.55	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.51	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.5	64.7	58.7	67.3	67.9
Medium Trucks:	61.0	60.3	53.9	52.4	60.8	61.1
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1
Vehicle Noise:	69.1	68.2	65.3	60.4	68.9	69.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	154	332	715
CNEL:	77	166	357	769



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Fire Station to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,782 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.31	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.55	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.51	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.5	64.7	58.7	67.3	67.9
Medium Trucks:	61.0	60.3	53.9	52.4	60.8	61.1
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1
Vehicle Noise:	69.1	68.2	65.3	60.4	68.9	69.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	154	332	715
CNEL:	77	166	357	769

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Paseo Westpark to Santa Rosa

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,733 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.44	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.67	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.63	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.4	64.6	58.6	67.2	67.8
Medium Trucks:	60.8	60.2	53.8	52.3	60.7	61.0
Heavy Trucks:	60.9	60.3	51.2	52.5	60.9	61.0
Vehicle Noise:	69.0	68.1	65.1	60.3	68.8	69.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	151	325	701
CNEL:	75	163	350	754

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,500 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,691 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.54	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.78	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.73	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.3	64.5	58.5	67.1	67.7
Medium Trucks:	60.7	60.1	53.7	52.2	60.6	60.8
Heavy Trucks:	60.8	60.2	51.1	52.4	60.7	60.9
Vehicle Noise:	68.9	68.0	65.0	60.2	68.7	69.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	149	320	690
CNEL:	74	160	345	742

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Bay Tree  
 Road Segment: Trabuco Road to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,100 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	173 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-8.47	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-25.71	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-29.67	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.6	52.5	50.8	44.7	53.3	53.9
Medium Trucks:	47.8	47.1	40.8	39.2	47.7	47.9
Heavy Trucks:	49.7	49.1	40.0	41.3	49.6	49.8
Vehicle Noise:	55.8	54.9	51.5	47.1	55.6	56.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	15	32	69
CNEL:	7	16	34	74

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Beacon  
 Road Segment: Ridge Valley to Benchmark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	0 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-41.03	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-58.26	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-62.22	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	21.4	20.3	18.5	12.5	21.1	21.7
Medium Trucks:	15.9	15.2	8.8	7.3	15.8	16.0
Heavy Trucks:	18.3	17.7	8.7	10.0	18.3	18.4
Vehicle Noise:	23.9	23.0	19.4	15.2	23.7	24.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	0
CNEL:	0	0	0	0

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Benchmark (LN Street)  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	0 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-41.03	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-58.26	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-62.22	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	21.4	20.3	18.5	12.5	21.1	21.7
Medium Trucks:	15.9	15.2	8.8	7.3	15.8	16.0
Heavy Trucks:	18.3	17.7	8.7	10.0	18.3	18.4
Vehicle Noise:	23.9	23.0	19.4	15.2	23.7	24.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	0
CNEL:	0	0	0	0

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Bison Avenue  
 Road Segment: SR-73 NB Off-Ramp to California Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,683 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.31	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.93	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.88	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.5	63.7	57.6	66.3	66.9
Medium Trucks:	60.3	59.6	53.2	51.7	60.2	60.4
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2
Vehicle Noise:	68.4	67.5	64.3	59.6	68.2	68.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	102	219	472
CNEL:	51	109	235	506

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Bonita Canyon Drive  
 Road Segment: MacArthur Boulevard to SR-73

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,401 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 75.0 feet Centerline Dist. to Observer: 75.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 70.413 Medium Trucks: 70.356 Heavy Trucks: 70.413																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.39	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.84	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-19.80	-2.33	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.1	67.0	65.2	59.2	67.8	68.4	
Medium Trucks:	61.6	61.0	54.6	53.1	61.5	61.7	
Heavy Trucks:	62.0	61.5	52.4	53.7	62.0	62.2	
Vehicle Noise:	69.8	68.8	65.8	61.0	69.6	70.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	151	325	701
CNEL:	75	162	350	753



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Bonita Canyon Drive  
 Road Segment: Turtle Ridge to Shady Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 16,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,353 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 75.0 feet Centerline Dist. to Observer: 75.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 70.413 Medium Trucks: 70.356 Heavy Trucks: 70.413																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.10	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-18.33	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-22.29	-2.33	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.6	64.5	62.7	56.7	65.3	65.9	
Medium Trucks:	59.1	58.5	52.1	50.6	59.0	59.3	
Heavy Trucks:	59.6	59.0	49.9	51.2	59.5	59.7	
Vehicle Noise:	67.3	66.4	63.3	58.5	67.1	67.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	222	478
CNEL:	51	111	239	514

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Bonita Canyon Drive  
 Road Segment: Newport Coast Drive to Turtle Ridge

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,353 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.10	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-18.33	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-22.29	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.5	62.7	56.7	65.3	65.9
Medium Trucks:	59.1	58.5	52.1	50.6	59.0	59.3
Heavy Trucks:	59.6	59.0	49.9	51.2	59.5	59.7
Vehicle Noise:	67.3	66.4	63.3	58.5	67.1	67.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	222	478
CNEL:	51	111	239	514

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Bonita Canyon Drive  
 Road Segment: SR-73 NB Off-Ramp to Newport Coast Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,353 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.10	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-18.33	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-22.29	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.5	62.7	56.7	65.3	65.9
Medium Trucks:	59.1	58.5	52.1	50.6	59.0	59.3
Heavy Trucks:	59.6	59.0	49.9	51.2	59.5	59.7
Vehicle Noise:	67.3	66.4	63.3	58.5	67.1	67.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	222	478
CNEL:	51	111	239	514

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Bosque  
 Road Segment: Cadence to Great Park Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,700 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	635 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		37.138		
Left View:	-90.0 degrees	Medium Trucks:		37.030		
Right View:	90.0 degrees	Heavy Trucks:		37.139		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-2.16	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-19.40	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-23.35	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.2	59.2	57.4	51.3	60.0	60.6
Medium Trucks:	54.7	54.1	47.7	46.2	54.6	54.8
Heavy Trucks:	57.2	56.6	47.6	48.8	57.2	57.3
Vehicle Noise:	62.7	61.9	58.2	54.0	62.6	63.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	26	56	120
CNEL:	13	27	59	128

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Bosque  
 Road Segment: Irvine Boulevard to Benchmark (LN Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 297 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-5.46	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-22.70	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-26.66	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.9	55.9	54.1	48.0	56.7	57.3
Medium Trucks:	51.4	50.8	44.4	42.9	51.3	51.5
Heavy Trucks:	53.9	53.3	44.3	45.5	53.9	54.0
Vehicle Noise:	59.4	58.6	54.9	50.7	59.3	59.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	16	33	72
CNEL:	8	17	36	77

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Bosque  
 Road Segment: Benchmark to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,600 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	297 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-5.46	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-22.70	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-26.66	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.9	55.9	54.1	48.0	56.7	57.3
Medium Trucks:	51.4	50.8	44.4	42.9	51.3	51.5
Heavy Trucks:	53.9	53.3	44.3	45.5	53.9	54.0
Vehicle Noise:	59.4	58.6	54.9	50.7	59.3	59.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	16	33	72
CNEL:	8	17	36	77

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Bosque  
 Road Segment: Great Park Boulevard to Beacon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 0 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-41.03	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-58.26	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-62.22	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	21.4	20.3	18.5	12.5	21.1	21.7	
Medium Trucks:	15.9	15.2	8.8	7.3	15.8	16.0	
Heavy Trucks:	18.3	17.7	8.7	10.0	18.3	18.4	
Vehicle Noise:	23.9	23.0	19.4	15.2	23.7	24.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	0
CNEL:	0	0	0	0

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Bosque  
 Road Segment: Beacon to S 5th Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	0 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-41.03	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-58.26	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-62.22	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	21.4	20.3	18.5	12.5	21.1	21.7
Medium Trucks:	15.9	15.2	8.8	7.3	15.8	16.0
Heavy Trucks:	18.3	17.7	8.7	10.0	18.3	18.4
Vehicle Noise:	23.9	23.0	19.4	15.2	23.7	24.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	0
CNEL:	0	0	0	0



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Bryan Avenue  
 Road Segment: Jamboree Road to Market Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,708 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.82	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.6	65.5	63.8	57.7	66.3	66.9	
Medium Trucks:	60.3	59.7	53.3	51.8	60.2	60.5	
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3	
Vehicle Noise:	68.4	67.5	64.4	59.7	68.2	68.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	221	476
CNEL:	51	110	237	511

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Bryan Avenue  
 Road Segment: Market Place to El Camino Real

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,708 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.82	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.6	65.5	63.8	57.7	66.3	66.9	
Medium Trucks:	60.3	59.7	53.3	51.8	60.2	60.5	
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3	
Vehicle Noise:	68.4	67.5	64.4	59.7	68.2	68.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	221	476
CNEL:	51	110	237	511

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Bryan Avenue  
 Road Segment: Rubicon to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,700 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,708 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.82	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.5	63.8	57.7	66.3	66.9
Medium Trucks:	60.3	59.7	53.3	51.8	60.2	60.5
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	68.4	67.5	64.4	59.7	68.2	68.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	221	476
CNEL:	51	110	237	511

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Bryan Avenue  
 Road Segment: El Camino Real to Rubicon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,708 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.82	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.6	65.5	63.8	57.7	66.3	66.9	
Medium Trucks:	60.3	59.7	53.3	51.8	60.2	60.5	
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3	
Vehicle Noise:	68.4	67.5	64.4	59.7	68.2	68.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	221	476
CNEL:	51	110	237	511

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Bryan Avenue  
 Road Segment: Eastwood to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,600 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 875 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.73	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.7	62.6	60.9	54.8	63.4	64.0
Medium Trucks:	57.4	56.8	50.4	48.9	57.3	57.6
Heavy Trucks:	58.3	57.7	48.7	49.9	58.3	58.4
Vehicle Noise:	65.5	64.6	61.5	56.8	65.3	65.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	66	142	305
CNEL:	33	70	152	327

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Bryan Avenue  
 Road Segment: Westwood to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 982 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.03	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.27	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.23	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.2	63.1	61.4	55.3	63.9	64.5	
Medium Trucks:	57.9	57.3	50.9	49.4	57.8	58.1	
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9	
Vehicle Noise:	66.0	65.1	62.0	57.3	65.8	66.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	329
CNEL:	35	76	164	353

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Bryan Avenue  
 Road Segment: Culver Drive to Westwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,900 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 982 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.03	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.27	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.23	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.1	61.4	55.3	63.9	64.5
Medium Trucks:	57.9	57.3	50.9	49.4	57.8	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.0	65.1	62.0	57.3	65.8	66.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	329
CNEL:	35	76	164	353

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Bryan Avenue  
 Road Segment: Yale Avenue to Eastwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	10,600 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	875 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.73	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.7	62.6	60.9	54.8	63.4	64.0
Medium Trucks:	57.4	56.8	50.4	48.9	57.3	57.6
Heavy Trucks:	58.3	57.7	48.7	49.9	58.3	58.4
Vehicle Noise:	65.5	64.6	61.5	56.8	65.3	65.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	66	142	305
CNEL:	33	70	152	327



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Cadence  
 Road Segment: Pusan to Chinon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 454 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.87	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-22.11	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-26.07	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.3	61.2	59.4	53.4	62.0	62.6
Medium Trucks:	56.3	55.6	49.2	47.7	56.1	56.4
Heavy Trucks:	57.6	57.0	47.9	49.2	57.5	57.7
Vehicle Noise:	64.3	63.4	60.1	55.6	64.1	64.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	15	33	70	152
CNEL:	16	35	75	162

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Cadence  
 Road Segment: Bosque to Pusan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 586 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.76	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-21.00	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-24.96	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.4	62.3	60.6	54.5	63.1	63.7
Medium Trucks:	57.4	56.7	50.3	48.8	57.2	57.5
Heavy Trucks:	58.7	58.1	49.0	50.3	58.7	58.8
Vehicle Noise:	65.4	64.5	61.2	56.7	65.2	65.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	83	180
CNEL:	19	41	89	192

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Cadence  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 289 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-6.83	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-24.07	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-28.03	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.3	59.2	57.5	51.4	60.0	60.7
Medium Trucks:	54.3	53.6	47.3	45.7	54.2	54.4
Heavy Trucks:	55.6	55.0	46.0	47.2	55.6	55.7
Vehicle Noise:	62.3	61.4	58.1	53.6	62.1	62.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	112
CNEL:	12	26	56	120

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Cadence  
 Road Segment: Chinon to Merit

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 289 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-6.83	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-24.07	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-28.03	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.3	59.2	57.5	51.4	60.0	60.7
Medium Trucks:	54.3	53.6	47.3	45.7	54.2	54.4
Heavy Trucks:	55.6	55.0	46.0	47.2	55.6	55.7
Vehicle Noise:	62.3	61.4	58.1	53.6	62.1	62.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	112
CNEL:	12	26	56	120

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Cadence  
 Road Segment: Merit to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	0 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-42.27	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-59.51	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-63.47	1.83	-1.20	-5.60	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	24.9	23.8	22.0	16.0	24.6	25.2	
Medium Trucks:	18.9	18.2	11.8	10.3	18.7	19.0	
Heavy Trucks:	20.2	19.6	10.5	11.8	20.1	20.3	
Vehicle Noise:	26.9	26.0	22.7	18.2	26.7	27.1	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	0
CNEL:	0	0	0	1

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: California Avenue  
 Road Segment: University Drive to Academy Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 825 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.51	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.47	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.0	60.9	59.2	53.1	61.7	62.3
Medium Trucks:	56.0	55.3	48.9	47.4	55.8	56.1
Heavy Trucks:	57.3	56.7	47.7	48.9	57.3	57.4
Vehicle Noise:	64.0	63.1	59.8	55.3	63.8	64.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	112	242
CNEL:	26	56	120	259

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: California Avenue  
 Road Segment: Campus Drive to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 644 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.35	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.59	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.55	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.9	59.8	58.1	52.0	60.6	61.3	
Medium Trucks:	54.9	54.2	47.9	46.3	54.8	55.0	
Heavy Trucks:	56.2	55.6	46.6	47.8	56.2	56.3	
Vehicle Noise:	62.9	62.0	58.7	54.2	62.7	63.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	44	95	205
CNEL:	22	47	102	219

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: California Avenue  
 Road Segment: Theory to Bison Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,600 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	627 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.47	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.71	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.66	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.8	59.7	58.0	51.9	60.5	61.1
Medium Trucks:	54.8	54.1	47.7	46.2	54.7	54.9
Heavy Trucks:	56.1	55.5	46.5	47.7	56.1	56.2
Vehicle Noise:	62.8	61.9	58.6	54.1	62.6	63.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	43	93	201
CNEL:	22	46	100	216



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Campus Drive  
 Road Segment: Carlson Avenue to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,403 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.94	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-18.18	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-22.13	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.0	67.9	66.1	60.1	68.7	69.3	
Medium Trucks:	62.5	61.9	55.5	54.0	62.4	62.7	
Heavy Trucks:	63.0	62.4	53.3	54.6	62.9	63.1	
Vehicle Noise:	70.7	69.8	66.7	61.9	70.5	70.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	249	537
CNEL:	58	124	268	577

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Campus Drive  
 Road Segment: University Drive to Bridge Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,832 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.02	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.97	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	67.1	65.3	59.3	67.9	68.5	
Medium Trucks:	61.7	61.1	54.7	53.2	61.6	61.9	
Heavy Trucks:	62.2	61.6	52.5	53.8	62.1	62.3	
Vehicle Noise:	69.9	69.0	65.9	61.1	69.7	70.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	128	276	595
CNEL:	64	138	296	639

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Campus Drive  
 Road Segment: Jamboree Road to Carlson Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,000 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,403 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.94	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.18	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.13	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.0	66.0	64.2	58.1	66.8	67.4	
Medium Trucks:	60.6	59.9	53.6	52.0	60.5	60.7	
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1	
Vehicle Noise:	68.7	67.8	64.8	60.0	68.5	69.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	107	231	498
CNEL:	53	115	248	535

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Campus Drive  
 Road Segment: Stanford Court to Berkeley Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,200 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,832 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.02	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.97	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.1	65.3	59.3	67.9	68.5
Medium Trucks:	61.7	61.1	54.7	53.2	61.6	61.9
Heavy Trucks:	62.2	61.6	52.5	53.8	62.1	62.3
Vehicle Noise:	69.9	69.0	65.9	61.1	69.7	70.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	128	276	595
CNEL:	64	138	296	639

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Campus Drive  
 Road Segment: California Avenue to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 16,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,361 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.07	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.31	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.26	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.9	65.8	64.1	58.0	66.6	67.2	
Medium Trucks:	60.5	59.8	53.4	51.9	60.3	60.6	
Heavy Trucks:	60.9	60.3	51.2	52.5	60.9	61.0	
Vehicle Noise:	68.6	67.7	64.6	59.8	68.4	68.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	105	226	488
CNEL:	52	113	243	524

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Campus Drive  
 Road Segment: Berkeley Avenue to Cornell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 16,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,361 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.07	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.31	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.26	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.9	65.8	64.1	58.0	66.6	67.2
Medium Trucks:	60.5	59.8	53.4	51.9	60.3	60.6
Heavy Trucks:	60.9	60.3	51.2	52.5	60.9	61.0
Vehicle Noise:	68.6	67.7	64.6	59.8	68.4	68.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	105	226	488
CNEL:	52	113	243	524

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Campus Drive  
 Road Segment: Martin to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,100 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 998 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.42	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.61	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.5	64.5	62.7	56.7	65.3	65.9
Medium Trucks:	59.1	58.4	52.1	50.5	59.0	59.2
Heavy Trucks:	59.5	58.9	49.9	51.1	59.5	59.6
Vehicle Noise:	67.2	66.3	63.3	58.5	67.0	67.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	85	184	397
CNEL:	43	92	198	426

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Project Name: Irvine GP  
 Road Name: Campus Drive Job Number: 15937  
 Road Segment: Culver Drive to Paseo Montoya (Turtle Rock Drive)

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,246 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos:	77.5%	12.9%	9.6%	97.42%
	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
	<b>Noise Source Elevations (in feet)</b>				
	Autos:	2.000			
	Medium Trucks:	4.000			
	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos:	57.786			
	Medium Trucks:	57.717			
	Heavy Trucks:	57.787			

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.45	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.69	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.65	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.5	65.4	63.7	57.6	66.2	66.8	
Medium Trucks:	60.1	59.4	53.0	51.5	60.0	60.2	
Heavy Trucks:	60.5	59.9	50.9	52.1	60.5	60.6	
Vehicle Noise:	68.2	67.3	64.2	59.5	68.0	68.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	99	213	460
CNEL:	49	106	229	494



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Campus Drive  
 Road Segment: Von Karman Avenue to Teller Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	10,300 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	850 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.12	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-20.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-24.31	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.8	63.8	62.0	56.0	64.6	65.2
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.5	65.6	62.6	57.8	66.3	66.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	165	356
CNEL:	38	82	178	383

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Campus Drive  
 Road Segment: MacArthur Boulevard to Martin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 998 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.42	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.61	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.5	64.5	62.7	56.7	65.3	65.9
Medium Trucks:	59.1	58.4	52.1	50.5	59.0	59.2
Heavy Trucks:	59.5	58.9	49.9	51.1	59.5	59.6
Vehicle Noise:	67.2	66.3	63.3	58.5	67.0	67.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	85	184	397
CNEL:	43	92	198	426

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Campus Drive  
 Road Segment: Teller Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 850 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.12	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-20.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-24.31	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.8	63.8	62.0	56.0	64.6	65.2	
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5	
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9	
Vehicle Noise:	66.5	65.6	62.6	57.8	66.3	66.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	165	356
CNEL:	38	82	178	383

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Carlson Avenue  
 Road Segment: Michelson Drive to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 495 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.46	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.70	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.66	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.5	61.4	59.7	53.6	62.2	62.8	
Medium Trucks:	56.1	55.4	49.0	47.5	55.9	56.2	
Heavy Trucks:	56.5	55.9	46.9	48.1	56.5	56.6	
Vehicle Noise:	64.2	63.3	60.2	55.4	64.0	64.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	115	249
CNEL:	27	58	124	267

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Chinon  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 223 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-5.92	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-23.16	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-27.11	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.4	52.4	50.6	44.6	53.2	53.8
Medium Trucks:	48.3	47.6	41.3	39.7	48.2	48.4
Heavy Trucks:	51.5	50.9	41.9	43.1	51.5	51.6
Vehicle Noise:	56.3	55.5	51.6	47.7	56.2	56.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	10	21	45
CNEL:	5	10	22	48

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Creek Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,900 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	322 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-4.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-21.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-25.52	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.2	51.1	49.3	43.3	51.9	52.5
Medium Trucks:	47.0	46.3	40.0	38.4	46.9	47.1
Heavy Trucks:	50.2	49.6	40.6	41.8	50.2	50.3
Vehicle Noise:	55.0	54.2	50.3	46.4	54.9	55.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	13	29	61
CNEL:	7	14	30	65

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 53,900 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,447 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.66	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.58	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.54	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.5	68.7	62.7	71.3	71.9
Medium Trucks:	64.9	64.3	57.9	56.4	64.8	65.0
Heavy Trucks:	65.0	64.4	55.3	56.6	64.9	65.1
Vehicle Noise:	73.1	72.2	69.2	64.4	72.9	73.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	131	283	610	1,315
CNEL:	141	305	656	1,414

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 53,900 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,447 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.66	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.58	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.54	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.5	68.7	62.7	71.3	71.9
Medium Trucks:	64.9	64.3	57.9	56.4	64.8	65.0
Heavy Trucks:	65.0	64.4	55.3	56.6	64.9	65.1
Vehicle Noise:	73.1	72.2	69.2	64.4	72.9	73.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	131	283	610	1,315
CNEL:	141	305	656	1,414



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 57,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,736 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.93	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.31	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.26	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.8	70.8	69.0	62.9	71.6	72.2
Medium Trucks:	65.2	64.5	58.2	56.6	65.1	65.3
Heavy Trucks:	65.2	64.6	55.6	56.9	65.2	65.3
Vehicle Noise:	73.4	72.5	69.5	64.6	73.2	73.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	137	295	636	1,371
CNEL:	147	318	685	1,475

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Scottsdale Drive to I-5 SB Off- Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 57,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,736 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.93	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.31	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.26	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.8	70.8	69.0	62.9	71.6	72.2
Medium Trucks:	65.2	64.5	58.2	56.6	65.1	65.3
Heavy Trucks:	65.2	64.6	55.6	56.9	65.2	65.3
Vehicle Noise:	73.4	72.5	69.5	64.6	73.2	73.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	137	295	636	1,371
CNEL:	147	318	685	1,475

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: I-405 NB Off-Ramp to San Leandro

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 53,900 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,447 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.66	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.58	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.54	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.5	68.7	62.7	71.3	71.9
Medium Trucks:	64.9	64.3	57.9	56.4	64.8	65.0
Heavy Trucks:	65.0	64.4	55.3	56.6	64.9	65.1
Vehicle Noise:	73.1	72.2	69.2	64.4	72.9	73.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	131	283	610	1,315
CNEL:	141	305	656	1,414

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: San Leandro to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 51,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,249 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.46	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.78	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.73	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.3	70.3	68.5	62.5	71.1	71.7	
Medium Trucks:	64.7	64.1	57.7	56.2	64.6	64.8	
Heavy Trucks:	64.8	64.2	55.1	56.4	64.7	64.9	
Vehicle Noise:	72.9	72.0	69.0	64.2	72.7	73.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	128	275	592	1,275
CNEL:	137	296	637	1,372

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Harvard Avenue to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 46,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,820 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.00	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.24	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.20	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.9	69.8	68.1	62.0	70.6	71.2	
Medium Trucks:	64.3	63.6	57.2	55.7	64.2	64.4	
Heavy Trucks:	64.3	63.7	54.7	55.9	64.3	64.4	
Vehicle Noise:	72.5	71.5	68.6	63.7	72.3	72.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	119	256	551	1,188
CNEL:	128	275	593	1,278

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Trabuco Road to Farwell Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 57,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,736 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.93	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.31	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.26	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.2	71.2	69.4	63.3	72.0	72.6	
Medium Trucks:	65.6	64.9	58.6	57.0	65.5	65.7	
Heavy Trucks:	65.6	65.1	56.0	57.3	65.6	65.8	
Vehicle Noise:	73.8	72.9	69.9	65.0	73.6	74.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	139	300	645	1,390
CNEL:	150	322	694	1,496

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,600 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,927 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.12	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.08	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.0	69.9	68.2	62.1	70.7	71.3
Medium Trucks:	64.4	63.7	57.4	55.8	64.3	64.5
Heavy Trucks:	64.4	63.8	54.8	56.1	64.4	64.5
Vehicle Noise:	72.6	71.7	68.7	63.8	72.4	72.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	261	562	1,210
CNEL:	130	280	604	1,302

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Main Street to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,828 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.01	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.23	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.19	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.9	69.8	68.1	62.0	70.6	71.2
Medium Trucks:	64.3	63.6	57.2	55.7	64.2	64.4
Heavy Trucks:	64.3	63.7	54.7	55.9	64.3	64.4
Vehicle Noise:	72.5	71.5	68.6	63.7	72.3	72.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	119	256	552	1,190
CNEL:	128	276	594	1,280



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Warner Avenue to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,754 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.92	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.32	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.27	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.7	68.0	61.9	70.5	71.1
Medium Trucks:	64.2	63.5	57.2	55.6	64.1	64.3
Heavy Trucks:	64.2	63.6	54.6	55.9	64.2	64.3
Vehicle Noise:	72.4	71.5	68.5	63.6	72.2	72.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	117	253	545	1,174
CNEL:	126	272	586	1,263

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Walnut Avenue to Scottsdale Dive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,800 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,696 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.85	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.38	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.34	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.7	67.9	61.9	70.5	71.1
Medium Trucks:	64.1	63.5	57.1	55.5	64.0	64.2
Heavy Trucks:	64.2	63.6	54.5	55.8	64.1	64.3
Vehicle Noise:	72.3	71.4	68.4	63.6	72.1	72.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	116	250	539	1,162
CNEL:	125	269	580	1,250

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,700 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,688 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.85	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.39	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.35	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.7	69.7	67.9	61.8	70.5	71.1	
Medium Trucks:	64.1	63.4	57.1	55.5	64.0	64.2	
Heavy Trucks:	64.1	63.6	54.5	55.8	64.1	64.3	
Vehicle Noise:	72.3	71.4	68.4	63.6	72.1	72.6	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	116	250	539	1,160
CNEL:	125	269	579	1,248

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Shady Canyon Drive to Palo Verde

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,100 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,906 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.22	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.5	68.4	66.7	60.6	69.3	69.9
Medium Trucks:	62.9	62.2	55.9	54.3	62.8	63.0
Heavy Trucks:	62.9	62.3	53.3	54.6	62.9	63.0
Vehicle Noise:	71.1	70.2	67.2	62.3	70.9	71.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	72	154	333	716
CNEL:	77	166	358	771

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Deerfield Avenue to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 41,700 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,440 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.54	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.69	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.65	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	69.4	67.6	61.5	70.2	70.8
Medium Trucks:	63.8	63.1	56.8	55.2	63.7	63.9
Heavy Trucks:	63.8	63.3	54.2	55.5	63.8	64.0
Vehicle Noise:	72.0	71.1	68.1	63.2	71.8	72.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	111	239	514	1,108
CNEL:	119	257	553	1,192

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Sandburg Way to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 38,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,135 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.14	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.10	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.05	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	69.0	67.2	61.1	69.8	70.4
Medium Trucks:	63.4	62.7	56.4	54.8	63.3	63.5
Heavy Trucks:	63.4	62.9	53.8	55.1	63.4	63.6
Vehicle Noise:	71.6	70.7	67.7	62.8	71.4	71.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	104	224	483	1,041
CNEL:	112	241	520	1,120

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,267 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.32	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.92	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.88	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.2	69.1	67.4	61.3	69.9	70.5	
Medium Trucks:	63.6	62.9	56.6	55.0	63.5	63.7	
Heavy Trucks:	63.6	63.0	54.0	55.3	63.6	63.7	
Vehicle Noise:	71.8	70.9	67.9	63.0	71.6	72.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	107	231	497	1,070
CNEL:	115	248	534	1,151

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Palo Verde to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,906 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.22	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.5	68.4	66.7	60.6	69.3	69.9	
Medium Trucks:	62.9	62.2	55.9	54.3	62.8	63.0	
Heavy Trucks:	62.9	62.3	53.3	54.6	62.9	63.0	
Vehicle Noise:	71.1	70.2	67.2	62.3	70.9	71.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	72	154	333	716
CNEL:	77	166	358	771



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: University Drive to Sandburg Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,900 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,879 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.77	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.47	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.42	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.8	60.8	69.4	70.0
Medium Trucks:	63.0	62.4	56.0	54.5	62.9	63.2
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	71.2	70.3	67.4	62.5	71.0	71.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	212	457	984
CNEL:	106	228	491	1,058

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Farwell Avenue to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 43,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,564 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.70	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.54	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.50	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.0	69.9	68.2	62.1	70.7	71.3	
Medium Trucks:	64.4	63.7	57.3	55.8	64.3	64.5	
Heavy Trucks:	64.4	63.8	54.8	56.0	64.4	64.5	
Vehicle Noise:	72.6	71.6	68.7	63.8	72.4	72.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	248	534	1,150
CNEL:	124	267	574	1,238

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Campus Drive to High School

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,962 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.89	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.35	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.30	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	66.9	60.9	69.5	70.1
Medium Trucks:	63.2	62.5	56.1	54.6	63.0	63.3
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3
Vehicle Noise:	71.4	70.4	67.5	62.6	71.2	71.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	465	1,003
CNEL:	108	232	501	1,079

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: High School to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,962 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.89	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.35	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.30	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.8	68.7	66.9	60.9	69.5	70.1	
Medium Trucks:	63.2	62.5	56.1	54.6	63.0	63.3	
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3	
Vehicle Noise:	71.4	70.4	67.5	62.6	71.2	71.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	465	1,003
CNEL:	108	232	501	1,079

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Bryan Avenue to Florence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,500 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,846 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.72	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.52	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.47	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.6	68.5	66.8	60.7	69.3	69.9	
Medium Trucks:	63.0	62.3	56.0	54.4	62.9	63.1	
Heavy Trucks:	63.0	62.4	53.4	54.7	63.0	63.1	
Vehicle Noise:	71.2	70.3	67.3	62.4	71.0	71.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	210	453	976
CNEL:	105	226	488	1,050

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Portola Parkway to Settlers

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,100 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,081 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.68	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	66.0	64.2	58.2	66.8	67.4
Medium Trucks:	60.4	59.8	53.4	51.9	60.3	60.6
Heavy Trucks:	60.5	59.9	50.8	52.1	60.5	60.6
Vehicle Noise:	68.6	67.7	64.7	59.9	68.4	68.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	106	228	491
CNEL:	53	114	245	528

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Florence to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 33,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,772 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.61	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.63	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.59	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.5	68.4	66.7	60.6	69.2	69.8
Medium Trucks:	62.9	62.2	55.8	54.3	62.8	63.0
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0
Vehicle Noise:	71.1	70.1	67.2	62.3	70.9	71.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	96	207	445	959
CNEL:	103	222	479	1,032

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Irvine Boulevard to Viewpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,500 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,021 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.23	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.00	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.96	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.1	65.3	59.2	67.9	68.5
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6
Heavy Trucks:	61.5	61.0	51.9	53.2	61.5	61.6
Vehicle Noise:	69.7	68.8	65.8	60.9	69.5	70.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	167	361	777
CNEL:	84	180	388	836



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Viewpark to Meadowood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,500 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,021 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.23	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.00	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.96	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.1	65.3	59.2	67.9	68.5
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6
Heavy Trucks:	61.5	61.0	51.9	53.2	61.5	61.6
Vehicle Noise:	69.7	68.8	65.8	60.9	69.5	70.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	167	361	777
CNEL:	84	180	388	836

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Settlers to Furrow

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	0 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-43.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-60.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-64.85	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	25.9	24.8	23.0	17.0	25.6	26.2
Medium Trucks:	19.3	18.6	12.2	10.7	19.2	19.4
Heavy Trucks:	19.3	18.7	9.7	10.9	19.3	19.4
Vehicle Noise:	27.5	26.5	23.6	18.7	27.3	27.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	1
CNEL:	0	0	0	1

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Meadowood to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 16,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,378 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
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Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.43	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-18.67	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-22.62	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.4	63.6	57.6	66.2	66.8
Medium Trucks:	59.8	59.2	52.8	51.3	59.7	60.0
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0
Vehicle Noise:	68.0	67.1	64.1	59.3	67.8	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	279	602
CNEL:	65	140	301	648

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Discovery Drive  
 Road Segment: Irvine Center Drive to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 140 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-9.97	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-27.21	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-31.16	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	54.3	53.2	51.5	45.4	54.0	54.6	
Medium Trucks:	48.3	47.6	41.2	39.7	48.2	48.4	
Heavy Trucks:	49.6	49.0	40.0	41.2	49.6	49.7	
Vehicle Noise:	56.3	55.4	52.1	47.6	56.1	56.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	16	34	74
CNEL:	8	17	37	79

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Discovery Drive  
 Road Segment: Waterworks Way to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 0 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-42.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-59.51	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-63.47	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	22.0	20.9	19.2	13.1	21.7	22.3
Medium Trucks:	16.0	15.3	8.9	7.4	15.8	16.1
Heavy Trucks:	17.3	16.7	7.7	8.9	17.3	17.4
Vehicle Noise:	24.0	23.1	19.8	15.3	23.8	24.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	1
CNEL:	0	0	0	1

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: East Yale Loop  
 Road Segment: Alton Parkway to Witherspoon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,900 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 899 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.90	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.14	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.09	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.4	61.3	59.5	53.5	62.1	62.7
Medium Trucks:	56.3	55.7	49.3	47.8	56.2	56.5
Heavy Trucks:	57.7	57.1	48.0	49.3	57.6	57.8
Vehicle Noise:	64.4	63.5	60.2	55.7	64.2	64.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	55	119	256
CNEL:	27	59	127	274

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: East Yale Loop  
 Road Segment: Osborn Street to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,200 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 842 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.38	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.1	61.0	59.2	53.2	61.8	62.4
Medium Trucks:	56.0	55.4	49.0	47.5	55.9	56.2
Heavy Trucks:	57.4	56.8	47.7	49.0	57.3	57.5
Vehicle Noise:	64.1	63.2	59.9	55.4	63.9	64.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	53	114	245
CNEL:	26	57	122	262

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: East Yale Loop  
 Road Segment: Yale Avenue to Springbrook South

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 528 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.41	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.1	59.0	57.2	51.2	59.8	60.4	
Medium Trucks:	54.0	53.4	47.0	45.4	53.9	54.1	
Heavy Trucks:	55.3	54.8	45.7	47.0	55.3	55.4	
Vehicle Noise:	62.1	61.2	57.9	53.3	61.9	62.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	83	180
CNEL:	19	41	89	192



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: East Yale Loop  
 Road Segment: Springbrook North to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 528 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.41	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.1	59.0	57.2	51.2	59.8	60.4
Medium Trucks:	54.0	53.4	47.0	45.4	53.9	54.1
Heavy Trucks:	55.3	54.8	45.7	47.0	55.3	55.4
Vehicle Noise:	62.1	61.2	57.9	53.3	61.9	62.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	83	180
CNEL:	19	41	89	192

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: East Yale Loop  
 Road Segment: Woodspring to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 528 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.41	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.1	59.0	57.2	51.2	59.8	60.4	
Medium Trucks:	54.0	53.4	47.0	45.4	53.9	54.1	
Heavy Trucks:	55.3	54.8	45.7	47.0	55.3	55.4	
Vehicle Noise:	62.1	61.2	57.9	53.3	61.9	62.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	83	180
CNEL:	19	41	89	192

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: East Yale Loop  
 Road Segment: Barranca Parkway to Eastshore

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,400 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	528 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.41	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.1	59.0	57.2	51.2	59.8	60.4
Medium Trucks:	54.0	53.4	47.0	45.4	53.9	54.1
Heavy Trucks:	55.3	54.8	45.7	47.0	55.3	55.4
Vehicle Noise:	62.1	61.2	57.9	53.3	61.9	62.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	83	180
CNEL:	19	41	89	192

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Eastwood  
 Road Segment: Bryan Avenue to Monticello

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 198 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-7.89	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-25.13	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-29.09	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.0	56.0	54.2	48.2	56.8	57.4
Medium Trucks:	51.3	50.6	44.2	42.7	51.2	51.4
Heavy Trucks:	53.1	52.5	43.5	44.7	53.1	53.2
Vehicle Noise:	59.3	58.4	55.0	50.6	59.1	59.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	15	33	70
CNEL:	8	16	35	75

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Eastwood  
 Road Segment: Columbus to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,900 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 157 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 35 mph																					
Near/Far Lane Distance: 12 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 37.5 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 37.5 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 37.138																				
Left View: -90.0 degrees	Medium Trucks: 37.030																				
Right View: 90.0 degrees	Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-8.91	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-26.15	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-30.10	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.0	55.0	53.2	47.1	55.8	56.4
Medium Trucks:	50.3	49.6	43.2	41.7	50.1	50.4
Heavy Trucks:	52.1	51.5	42.5	43.7	52.1	52.2
Vehicle Noise:	58.3	57.4	53.9	49.5	58.1	58.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	13	28	60
CNEL:	6	14	30	64

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: El Camino Real  
 Road Segment: Jamboree Road to Alliance (SR-261 Bridge)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 18,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,526 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.40	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.84	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.80	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.7	63.6	61.8	55.8	64.4	65.0	
Medium Trucks:	58.6	58.0	51.6	50.1	58.5	58.7	
Heavy Trucks:	60.0	59.4	50.3	51.6	59.9	60.1	
Vehicle Noise:	66.7	65.8	62.5	57.9	66.5	66.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	169	364
CNEL:	39	84	181	390

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: El Camino Real North  
 Road Segment: El Camino Real to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 512 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.35	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.59	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.55	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	59.9	58.9	57.1	51.0	59.7	60.3	
Medium Trucks:	53.9	53.2	46.9	45.3	53.8	54.0	
Heavy Trucks:	55.2	54.6	45.6	46.8	55.2	55.3	
Vehicle Noise:	61.9	61.0	57.7	53.2	61.7	62.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	38	82	176
CNEL:	19	41	87	188

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Fairbanks  
 Road Segment: Alton Parkway to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 215 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-8.13	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-25.36	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-29.32	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	59.0	58.0	56.2	50.1	58.8	59.4	
Medium Trucks:	53.0	52.3	46.0	44.4	52.9	53.1	
Heavy Trucks:	54.3	53.7	44.7	45.9	54.3	54.4	
Vehicle Noise:	61.0	60.1	56.9	52.3	60.8	61.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	20	43	92
CNEL:	10	21	46	98



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Fairbanks  
 Road Segment: Irvine Boulevard to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 0 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-42.27	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-59.51	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-63.47	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	24.9	23.8	22.0	16.0	24.6	25.2	
Medium Trucks:	18.9	18.2	11.8	10.3	18.7	19.0	
Heavy Trucks:	20.2	19.6	10.5	11.8	20.1	20.3	
Vehicle Noise:	26.9	26.0	22.7	18.2	26.7	27.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	0
CNEL:	0	0	0	1

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Fairchild Road  
 Road Segment: MacArthur Boulevard to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,000 vehicles	Autos:				15
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):				15
Peak Hour Volume:	495 vehicles	Heavy Trucks (3+ Axles):				15
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-5.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-22.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-26.20	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.2	60.1	58.4	52.3	60.9	61.6
Medium Trucks:	55.0	54.3	47.9	46.4	54.8	55.1
Heavy Trucks:	55.8	55.2	46.2	47.4	55.8	55.9
Vehicle Noise:	63.0	62.1	59.0	54.3	62.9	63.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	45	97	209
CNEL:	22	48	104	224

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Gateway Boulevard  
 Road Segment: Alton Parkway to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 314 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-5.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-22.47	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-26.42	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.3	53.2	51.4	45.4	54.0	54.6
Medium Trucks:	48.8	48.1	41.7	40.2	48.7	48.9
Heavy Trucks:	51.3	50.7	41.6	42.9	51.2	51.4
Vehicle Noise:	56.8	55.9	52.3	48.1	56.6	57.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	80
CNEL:	9	18	40	85

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Project Name: Irvine GP  
 Road Name: Gateway Boulevard Job Number: 15937  
 Road Segment: Spectrum Center Drive (Fortune Drive) to Alton Parkway

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 545 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-2.83	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-20.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-24.02	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.7	55.6	53.8	47.8	56.4	57.0
Medium Trucks:	51.2	50.5	44.1	42.6	51.1	51.3
Heavy Trucks:	53.7	53.1	44.0	45.3	53.6	53.8
Vehicle Noise:	59.2	58.3	54.7	50.5	59.0	59.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	25	54	116
CNEL:	12	27	57	123

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Gateway Boulevard  
 Road Segment: Irvine Center Drive to Meridian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,600 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	297 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-5.46	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-22.70	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-26.66	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.0	53.0	51.2	45.2	53.8	54.4
Medium Trucks:	48.5	47.9	41.5	40.0	48.4	48.7
Heavy Trucks:	51.0	50.4	41.4	42.6	51.0	51.1
Vehicle Noise:	56.5	55.7	52.0	47.9	56.4	56.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	36	77
CNEL:	8	18	38	82

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Great Park Boulevard  
 Road Segment: Sand Canyon to Ridge Valley

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 18,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,485 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.69	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.93	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.89	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.6	67.5	65.7	59.7	68.3	68.9	
Medium Trucks:	62.1	61.5	55.1	53.6	62.0	62.3	
Heavy Trucks:	62.5	62.0	52.9	54.2	62.5	62.7	
Vehicle Noise:	70.3	69.3	66.3	61.5	70.1	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	281	606
CNEL:	65	140	302	651

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Great Park Boulevard  
 Road Segment: Ridge Valley (O Street) to Bosque (LY Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 446 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">VehicleType</th> <th style="text-align: center;">Day</th> <th style="text-align: center;">Evening</th> <th style="text-align: center;">Night</th> <th style="text-align: center;">Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td style="text-align: center;">77.5%</td> <td style="text-align: center;">12.9%</td> <td style="text-align: center;">9.6%</td> <td style="text-align: center;">97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td style="text-align: center;">84.8%</td> <td style="text-align: center;">4.9%</td> <td style="text-align: center;">10.3%</td> <td style="text-align: center;">1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td style="text-align: center;">86.5%</td> <td style="text-align: center;">2.7%</td> <td style="text-align: center;">10.8%</td> <td style="text-align: center;">0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.92	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-23.16	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-27.11	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.0	61.0	59.2	53.2	61.8	62.4	
Medium Trucks:	55.6	54.9	48.6	47.0	55.5	55.7	
Heavy Trucks:	56.0	55.4	46.4	47.6	56.0	56.1	
Vehicle Noise:	63.7	62.8	59.8	55.0	63.5	64.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	232
CNEL:	25	54	116	249

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Great Park Boulevard (EB)  
 Road Segment: Bosque to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	0 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-43.24	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-60.48	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-64.44	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	27.6	26.5	24.8	18.7	27.3	27.9
Medium Trucks:	21.2	20.5	14.1	12.6	21.1	21.3
Heavy Trucks:	21.6	21.0	12.0	13.2	21.6	21.7
Vehicle Noise:	29.3	28.4	25.3	20.5	29.1	29.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	1
CNEL:	0	0	0	1



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Great Park Boulevard (WB)  
 Road Segment: Bosque to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	0 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-43.24	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-60.48	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-64.44	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	27.6	26.5	24.8	18.7	27.3	27.9
Medium Trucks:	21.2	20.5	14.1	12.6	21.1	21.3
Heavy Trucks:	21.6	21.0	12.0	13.2	21.6	21.7
Vehicle Noise:	29.3	28.4	25.3	20.5	29.1	29.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	1
CNEL:	0	0	0	1

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: University Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,568 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.00	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-17.24	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-21.19	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.1	68.0	66.3	60.2	68.8	69.4	
Medium Trucks:	62.9	62.2	55.8	54.3	62.7	63.0	
Heavy Trucks:	63.7	63.1	54.1	55.3	63.7	63.8	
Vehicle Noise:	70.9	70.0	66.9	62.2	70.7	71.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	91	195	420
CNEL:	45	97	209	451

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: Michelson Drive to Coronado

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,046 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.16	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.08	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.04	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.3	64.5	58.5	67.1	67.7
Medium Trucks:	61.1	60.5	54.1	52.6	61.0	61.2
Heavy Trucks:	62.0	61.4	52.3	53.6	62.0	62.1
Vehicle Noise:	69.2	68.3	65.2	60.5	69.0	69.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	249	537
CNEL:	58	124	268	576

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: San Marino to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,021 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.09	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.3	64.5	58.4	67.1	67.7
Medium Trucks:	61.1	60.4	54.0	52.5	61.0	61.2
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	69.2	68.2	65.1	60.4	69.0	69.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	115	247	533
CNEL:	57	123	265	572

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: Coronado to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,980 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.22	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.18	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.2	66.2	64.4	58.3	67.0	67.6	
Medium Trucks:	61.0	60.3	54.0	52.4	60.9	61.1	
Heavy Trucks:	61.8	61.2	52.2	53.5	61.8	61.9	
Vehicle Noise:	69.1	68.2	65.0	60.3	68.9	69.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	113	244	526
CNEL:	56	121	262	564

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: San Carlo to San Marino

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,500 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,021 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.09	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.3	64.5	58.4	67.1	67.7
Medium Trucks:	61.1	60.4	54.0	52.5	61.0	61.2
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	69.2	68.2	65.1	60.4	69.0	69.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	115	247	533
CNEL:	57	123	265	572

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: Main Street to San Carlo

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,980 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
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Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.22	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.18	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.2	64.4	58.3	67.0	67.6
Medium Trucks:	61.0	60.3	54.0	52.4	60.9	61.1
Heavy Trucks:	61.8	61.2	52.2	53.5	61.8	61.9
Vehicle Noise:	69.1	68.2	65.0	60.3	68.9	69.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	113	244	526
CNEL:	56	121	262	564

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: Alton Parkway to San Leon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,650 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.01	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.97	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.4	63.6	57.6	66.2	66.8
Medium Trucks:	60.2	59.5	53.2	51.6	60.1	60.3
Heavy Trucks:	61.0	60.4	51.4	52.7	61.0	61.1
Vehicle Noise:	68.3	67.4	64.2	59.5	68.1	68.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	100	216	466
CNEL:	50	108	232	499



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: San Juan to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,650 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
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Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.01	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.97	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.4	63.6	57.6	66.2	66.8
Medium Trucks:	60.2	59.5	53.2	51.6	60.1	60.3
Heavy Trucks:	61.0	60.4	51.4	52.7	61.0	61.1
Vehicle Noise:	68.3	67.4	64.2	59.5	68.1	68.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	100	216	466
CNEL:	50	108	232	499

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: San Leon to San Juan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,584 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.05	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.19	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.15	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.3	65.2	63.4	57.4	66.0	66.6	
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1	
Heavy Trucks:	60.9	60.3	51.2	52.5	60.8	61.0	
Vehicle Noise:	68.1	67.2	64.0	59.4	67.9	68.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	98	210	453
CNEL:	49	105	226	486

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	10,000 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	825 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.79	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.02	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.98	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.4	62.4	60.6	54.5	63.2	63.8
Medium Trucks:	57.2	56.5	50.2	48.6	57.1	57.3
Heavy Trucks:	58.0	57.4	48.4	49.7	58.0	58.1
Vehicle Noise:	65.3	64.4	61.2	56.5	65.1	65.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	136	293
CNEL:	31	68	146	315

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: Deerfield Avenue to Poplar Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	10,000 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	825 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		57.786		
Left View:	-90.0 degrees	Medium Trucks:		57.717		
Right View:	90.0 degrees	Heavy Trucks:		57.787		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.79	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.02	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.98	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.4	62.4	60.6	54.5	63.2	63.8
Medium Trucks:	57.2	56.5	50.2	48.6	57.1	57.3
Heavy Trucks:	58.0	57.4	48.4	49.7	58.0	58.1
Vehicle Noise:	65.3	64.4	61.2	56.5	65.1	65.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	136	293
CNEL:	31	68	146	315

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 16,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,345 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.86	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.5	64.5	62.7	56.7	65.3	65.9
Medium Trucks:	59.3	58.6	52.3	50.7	59.2	59.4
Heavy Trucks:	60.1	59.6	50.5	51.8	60.1	60.3
Vehicle Noise:	67.4	66.5	63.3	58.6	67.2	67.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	88	189	406
CNEL:	44	94	202	436

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: Bridge Road to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,221 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.08	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.32	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.28	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.1	64.1	62.3	56.2	64.9	65.5	
Medium Trucks:	58.9	58.2	51.9	50.3	58.8	59.0	
Heavy Trucks:	59.7	59.1	50.1	51.4	59.7	59.8	
Vehicle Noise:	67.0	66.1	62.9	58.2	66.8	67.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	177	381
CNEL:	41	88	190	409

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: Paseo Westpark to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,400 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 941 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.46	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.41	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.0	62.9	61.2	55.1	63.7	64.3	
Medium Trucks:	57.8	57.1	50.7	49.2	57.6	57.9	
Heavy Trucks:	58.6	58.0	49.0	50.2	58.6	58.7	
Vehicle Noise:	65.8	64.9	61.8	57.1	65.6	66.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	149	320
CNEL:	34	74	159	343

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: Poplar Street to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 710 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.44	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	79.45	-20.68	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	84.25	-24.64	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.7	63.7	61.9	55.8	64.5	65.1
Medium Trucks:	58.5	57.8	51.5	49.9	58.4	58.6
Heavy Trucks:	59.3	58.7	49.7	51.0	59.3	59.4
Vehicle Noise:	66.6	65.7	62.5	57.8	66.4	66.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	62	133	286
CNEL:	31	66	143	307



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: California Avenue to Berkeley Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 941 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.46	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.41	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.0	62.9	61.2	55.1	63.7	64.3	
Medium Trucks:	57.8	57.1	50.7	49.2	57.6	57.9	
Heavy Trucks:	58.6	58.0	49.0	50.2	58.6	58.7	
Vehicle Noise:	65.8	64.9	61.8	57.1	65.6	66.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	149	320
CNEL:	34	74	159	343

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: Culver Drive to California Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	11,400 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	941 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.46	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.41	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.0	62.9	61.2	55.1	63.7	64.3
Medium Trucks:	57.8	57.1	50.7	49.2	57.6	57.9
Heavy Trucks:	58.6	58.0	49.0	50.2	58.6	58.7
Vehicle Noise:	65.8	64.9	61.8	57.1	65.6	66.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	149	320
CNEL:	34	74	159	343

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: Berkeley to Bridge Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 941 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.46	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.41	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.0	62.9	61.2	55.1	63.7	64.3
Medium Trucks:	57.8	57.1	50.7	49.2	57.6	57.9
Heavy Trucks:	58.6	58.0	49.0	50.2	58.6	58.7
Vehicle Noise:	65.8	64.9	61.8	57.1	65.6	66.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	149	320
CNEL:	34	74	159	343

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: Warner Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	11,000 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	908 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		57.786		
Left View:	-90.0 degrees	Medium Trucks:		57.717		
Right View:	90.0 degrees	Heavy Trucks:		57.787		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.61	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.57	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.8	62.8	61.0	55.0	63.6	64.2
Medium Trucks:	57.6	56.9	50.6	49.0	57.5	57.7
Heavy Trucks:	58.4	57.9	48.8	50.1	58.4	58.5
Vehicle Noise:	65.7	64.8	61.6	56.9	65.5	65.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	145	313
CNEL:	34	72	156	335

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Hicks Canyon Drive  
 Road Segment: Delamesa to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 182 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-8.27	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	75.75	-25.51	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	81.57	-29.46	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.7	54.7	52.9	46.9	55.5	56.1
Medium Trucks:	50.0	49.3	42.9	41.4	49.8	50.1
Heavy Trucks:	51.8	51.2	42.2	43.4	51.8	51.9
Vehicle Noise:	58.0	57.1	53.6	49.3	57.8	58.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	36	77
CNEL:	8	18	38	82

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Hornet (5th St)  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 0 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-40.23	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-57.47	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-61.43	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	19.1	18.1	16.3	10.3	18.9	19.5	
Medium Trucks:	14.0	13.3	6.9	5.4	13.9	14.1	
Heavy Trucks:	17.2	16.6	7.6	8.8	17.2	17.3	
Vehicle Noise:	22.0	21.2	17.3	13.4	21.9	22.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	0
CNEL:	0	0	0	0

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Hubble  
 Road Segment: Irvine Center Drive to Bunsen

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,100 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	173 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		37.138		
Left View:	-90.0 degrees	Medium Trucks:		37.030		
Right View:	90.0 degrees	Heavy Trucks:		37.139		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-7.01	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-24.25	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-28.21	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.4	51.3	49.5	43.5	52.1	52.7
Medium Trucks:	47.2	46.5	40.2	38.6	47.1	47.3
Heavy Trucks:	50.4	49.8	40.8	42.0	50.4	50.5
Vehicle Noise:	55.2	54.4	50.5	46.6	55.1	55.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	8	18	38
CNEL:	4	9	19	40

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: SR-133 NB Off- Ramp to Ridge Valley (O Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,100 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,308 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.37	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.86	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.82	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.3	69.2	67.4	61.4	70.0	70.6	
Medium Trucks:	63.6	63.0	56.6	55.1	63.5	63.8	
Heavy Trucks:	63.7	63.1	54.1	55.3	63.7	63.8	
Vehicle Noise:	71.8	70.9	68.0	63.1	71.6	72.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	108	233	501	1,079
CNEL:	116	250	539	1,161



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: SR-133 SB Off-Ramp to SR-133 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,226 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.26	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.97	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.93	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.1	69.1	67.3	61.3	69.9	70.5	
Medium Trucks:	63.5	62.9	56.5	55.0	63.4	63.7	
Heavy Trucks:	63.6	63.0	53.9	55.2	63.6	63.7	
Vehicle Noise:	71.7	70.8	67.8	63.0	71.5	72.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	229	493	1,061
CNEL:	114	246	530	1,142

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Sand Canyon to SR-133 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 43,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,589 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.73	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.51	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.47	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.0	70.0	68.2	62.1	70.8	71.4	
Medium Trucks:	64.4	63.7	57.4	55.8	64.3	64.5	
Heavy Trucks:	64.4	63.9	54.8	56.1	64.4	64.6	
Vehicle Noise:	72.6	71.7	68.7	63.8	72.4	72.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	116	249	536	1,156
CNEL:	124	268	577	1,243

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Merit to Alton

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,100 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,813 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.57	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.52	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.6	68.5	66.7	60.7	69.3	69.9	
Medium Trucks:	62.9	62.3	55.9	54.4	62.8	63.1	
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1	
Vehicle Noise:	71.1	70.2	67.2	62.4	70.9	71.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	209	450	969
CNEL:	104	225	484	1,042

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Journey to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 34,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,822 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.68	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.56	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.51	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.6	68.5	66.7	60.7	69.3	69.9	
Medium Trucks:	63.0	62.3	55.9	54.4	62.8	63.1	
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1	
Vehicle Noise:	71.1	70.2	67.3	62.4	70.9	71.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	209	451	971
CNEL:	104	225	485	1,044

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Ridge Valley (O Street) to Bosque (LY Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,700 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,533 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.02	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.98	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.1	68.0	66.3	60.2	68.8	69.4	
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6	
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6	
Vehicle Noise:	70.7	69.7	66.8	61.9	70.5	70.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	195	419	903
CNEL:	97	209	451	972

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Pusan Way to Chinon (B Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,600 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,442 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.05	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.18	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.14	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.9	66.1	60.1	68.7	69.3
Medium Trucks:	62.3	61.7	55.3	53.7	62.2	62.4
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5
Vehicle Noise:	70.5	69.6	66.6	61.8	70.3	70.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	190	409	882
CNEL:	95	204	440	948

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Palo Lado to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,236 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.57	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.52	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.7	59.7	68.3	68.9
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.1
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	70.1	69.2	66.3	61.4	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	179	386	831
CNEL:	89	193	415	894

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Culver Drive to Palo Lado

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,261 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.72	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.52	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.47	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	68.9
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.0	61.4	52.4	53.7	62.0	62.1
Vehicle Noise:	70.2	69.3	66.3	61.4	70.0	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	180	389	837
CNEL:	90	194	418	901



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: SR-261 SB Off-Ramp to SR-261 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,285 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.77	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.47	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.43	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.0	61.4	55.0	53.5	61.9	62.2
Heavy Trucks:	62.1	61.5	52.4	53.7	62.1	62.2
Vehicle Noise:	70.2	69.3	66.3	61.5	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	182	391	843
CNEL:	91	195	421	907

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Old Myford Road to Market Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,186 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.57	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.66	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.62	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.4	65.6	59.6	68.2	68.8	
Medium Trucks:	61.8	61.2	54.8	53.3	61.7	62.0	
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0	
Vehicle Noise:	70.0	69.1	66.2	61.3	69.8	70.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	176	380	819
CNEL:	88	190	409	881

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Bosque (LY Street) to Modjeska

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,900 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,302 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.80	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.44	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.40	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.9	59.8	68.4	69.0
Medium Trucks:	62.1	61.4	55.0	53.5	62.0	62.2
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	70.3	69.3	66.4	61.5	70.1	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	183	393	847
CNEL:	91	196	423	912

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Jamboree Road to Old Myford Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,500 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,186 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.57	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.66	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.62	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.6	59.6	68.2	68.8
Medium Trucks:	61.8	61.2	54.8	53.3	61.7	62.0
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	70.0	69.1	66.2	61.3	69.8	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	176	380	819
CNEL:	88	190	409	881

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Market Place to SR-261 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,400 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,178 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.56	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.68	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.64	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.4	65.6	59.6	68.2	68.8	
Medium Trucks:	61.8	61.2	54.8	53.3	61.7	61.9	
Heavy Trucks:	61.9	61.3	52.2	53.5	61.8	62.0	
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	176	379	817
CNEL:	88	189	408	879

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Jeffrey Road to Groveland

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,335 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.86	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.38	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.33	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.1	61.5	55.1	53.6	62.0	62.2
Heavy Trucks:	62.2	61.6	52.5	53.8	62.1	62.3
Vehicle Noise:	70.3	69.4	66.4	61.6	70.1	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	184	397	856
CNEL:	92	198	427	920

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Bake Parkway to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,964 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.11	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.13	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.09	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.0	66.9	65.2	59.1	67.7	68.3	
Medium Trucks:	61.4	60.7	54.3	52.8	61.3	61.5	
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5	
Vehicle Noise:	69.6	68.6	65.7	60.8	69.4	69.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	164	354	762
CNEL:	82	177	381	820

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Project Name: Irvine GP  
 Road Name: Irvine Boulevard Job Number: 15937  
 Road Segment: Independence Way (The Groves)/The Groves to Jeffrey Road

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,145 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos:	77.5%	12.9%	9.6%	97.42%
	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
	<b>Noise Source Elevations (in feet)</b>				
	Autos:	2.000			
	Medium Trucks:	4.000			
	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos:	74.458			
	Medium Trucks:	74.404			
	Heavy Trucks:	74.458			

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.49	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.75	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.70	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	61.8	61.1	54.7	53.2	61.6	61.9
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	70.0	69.0	66.1	61.2	69.8	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	375	809
CNEL:	87	187	404	870



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Chinon (B Street) to Merit

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,100 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,153 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.51	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.73	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.69	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	61.8	61.1	54.7	53.2	61.7	61.9
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	70.0	69.0	66.1	61.2	69.8	70.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	175	376	811
CNEL:	87	188	405	872

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: SR-261 NB Off-Ramp to Central Park

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,087 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.37	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.87	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.82	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.2	65.4	59.4	68.0	68.6	
Medium Trucks:	61.6	61.0	54.6	53.1	61.5	61.8	
Heavy Trucks:	61.7	61.1	52.1	53.3	61.7	61.8	
Vehicle Noise:	69.8	68.9	66.0	61.1	69.6	70.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	171	369	794
CNEL:	85	184	396	854

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing Project Name: Irvine GP  
 Road Name: Irvine Boulevard Job Number: 15937  
 Road Segment: Pueblo Norte to Independence Way (The Groves)/ Parkwood

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,005 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float:right">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.20	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.04	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.00	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.3	59.2	67.8	68.4
Medium Trucks:	61.5	60.8	54.4	52.9	61.4	61.6
Heavy Trucks:	61.5	60.9	51.9	53.1	61.5	61.6
Vehicle Noise:	69.7	68.7	65.8	60.9	69.5	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	167	359	773
CNEL:	83	179	386	831

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Yale Avenue to Pueblo Norte

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,300 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,005 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.20	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.04	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.00	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.3	59.2	67.8	68.4
Medium Trucks:	61.5	60.8	54.4	52.9	61.4	61.6
Heavy Trucks:	61.5	60.9	51.9	53.1	61.5	61.6
Vehicle Noise:	69.7	68.7	65.8	60.9	69.5	69.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	167	359	773
CNEL:	83	179	386	831

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Modjeska to Pusan Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,046 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.29	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.95	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.91	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.1	65.3	59.3	67.9	68.5
Medium Trucks:	61.6	60.9	54.5	53.0	61.4	61.7
Heavy Trucks:	61.6	61.0	52.0	53.2	61.6	61.7
Vehicle Noise:	69.7	68.8	65.9	61.0	69.5	70.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	169	364	783
CNEL:	84	182	391	843

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Central Park Avenue to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,823 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.45	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.41	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.6	64.8	58.8	67.4	68.0
Medium Trucks:	61.1	60.4	54.0	52.5	60.9	61.2
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2
Vehicle Noise:	69.2	68.3	65.4	60.5	69.0	69.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	156	337	726
CNEL:	78	168	362	781

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Parker to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,601 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.78	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-18.02	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.97	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.0	64.3	58.2	66.8	67.4
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	60.5	59.9	50.9	52.2	60.5	60.6
Vehicle Noise:	68.7	67.8	64.8	59.9	68.5	69.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	143	309	665
CNEL:	72	154	332	716

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Alton Parkway to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,411 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.33	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-18.57	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-22.52	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.5	63.7	57.7	66.3	66.9
Medium Trucks:	59.9	59.3	52.9	51.4	59.8	60.1
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1
Vehicle Noise:	68.1	67.2	64.3	59.4	67.9	68.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	284	611
CNEL:	66	142	305	658



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing	Project Name: Irvine GP
Road Name: Irvine Center Drive	Job Number: 15937
Road Segment: Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp	

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 38,500 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 3,176 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 50 mph																					
Near/Far Lane Distance: 78 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 80.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 80.0 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 69.914																				
Left View: -90.0 degrees	Medium Trucks: 69.857																				
Right View: 90.0 degrees	Heavy Trucks: 69.914																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.61	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.63	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.58	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.3	66.5	60.4	69.1	69.7
Medium Trucks:	62.9	62.2	55.9	54.3	62.8	63.0
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4
Vehicle Noise:	71.0	70.1	67.1	62.3	70.8	71.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	196	421	908
CNEL:	98	210	453	975

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Orange Tree to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,401 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.39	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.84	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.80	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.7	66.6	64.9	58.8	67.4	68.0	
Medium Trucks:	61.3	60.6	54.2	52.7	61.1	61.4	
Heavy Trucks:	61.7	61.1	52.1	53.3	61.7	61.8	
Vehicle Noise:	69.4	68.5	65.4	60.6	69.2	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	345	743
CNEL:	80	172	370	798

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: I-405 SB Off-Ramp to Research

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,904 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.22	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.02	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.97	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.9	67.9	66.1	60.1	68.7	69.3	
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6	
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0	
Vehicle Noise:	70.6	69.7	66.7	61.9	70.4	70.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	184	397	855
CNEL:	92	198	426	919

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Irvine Valley College to Orange Tree

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,401 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.39	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.84	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.80	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.7	66.6	64.9	58.8	67.4	68.0	
Medium Trucks:	61.3	60.6	54.2	52.7	61.1	61.4	
Heavy Trucks:	61.7	61.1	52.1	53.3	61.7	61.8	
Vehicle Noise:	69.4	68.5	65.4	60.6	69.2	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	345	743
CNEL:	80	172	370	798

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Fontaine Avenue to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,285 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.18	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.06	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.01	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.4	64.7	58.6	67.2	67.8
Medium Trucks:	61.1	60.4	54.0	52.5	60.9	61.2
Heavy Trucks:	61.5	60.9	51.8	53.1	61.4	61.6
Vehicle Noise:	69.2	68.3	65.2	60.4	69.0	69.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	72	155	334	719
CNEL:	77	166	358	772

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Culver Drive to Deerwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,426 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.44	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.80	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.75	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.7	64.9	58.9	67.5	68.1
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4
Heavy Trucks:	61.7	61.1	52.1	53.4	61.7	61.8
Vehicle Noise:	69.4	68.5	65.5	60.7	69.2	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	347	748
CNEL:	80	173	373	803

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Deerwood to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,368 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.33	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.90	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.86	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.6	66.6	64.8	58.8	67.4	68.0	
Medium Trucks:	61.2	60.5	54.2	52.6	61.1	61.3	
Heavy Trucks:	61.6	61.0	52.0	53.2	61.6	61.7	
Vehicle Noise:	69.3	68.4	65.4	60.6	69.1	69.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	342	736
CNEL:	79	170	367	791

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Yale Avenue to Fontaine Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,100 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,236 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.09	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.15	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.11	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.3	64.6	58.5	67.1	67.7
Medium Trucks:	61.0	60.3	53.9	52.4	60.8	61.1
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5
Vehicle Noise:	69.1	68.2	65.1	60.3	68.9	69.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	153	329	708
CNEL:	76	164	353	761



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Jeffrey Road to Irvine Valley College

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,401 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.39	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.84	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.80	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.7	66.6	64.9	58.8	67.4	68.0	
Medium Trucks:	61.3	60.6	54.2	52.7	61.1	61.4	
Heavy Trucks:	61.7	61.1	52.1	53.3	61.7	61.8	
Vehicle Noise:	69.4	68.5	65.4	60.6	69.2	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	345	743
CNEL:	80	172	370	798

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Alton Parkway to Spectrum

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,013 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.63	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.61	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.56	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.9	65.9	64.1	58.1	66.7	67.3
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	60.9	60.3	51.3	52.5	60.9	61.0
Vehicle Noise:	68.6	67.7	64.7	59.9	68.4	68.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	142	307	660
CNEL:	71	153	329	710

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Spectrum to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,500 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,021 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.65	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.59	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.55	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	65.9	64.1	58.1	66.7	67.3
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	60.9	60.3	51.3	52.6	60.9	61.0
Vehicle Noise:	68.6	67.7	64.7	59.9	68.5	68.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	143	307	662
CNEL:	71	153	330	711

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Hearthstone to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,145 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
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VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
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	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.91	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.33	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.29	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.2	66.1	64.4	58.3	67.0	67.6	
Medium Trucks:	60.8	60.1	53.7	52.2	60.7	60.9	
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3	
Vehicle Noise:	68.9	68.0	64.9	60.2	68.7	69.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	148	320	689
CNEL:	74	159	344	740

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Charter to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,691 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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Autos:	77.5%	12.9%	9.6%	97.42%																	
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### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.13	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.36	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.32	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	65.1	63.4	57.3	65.9	66.5
Medium Trucks:	59.7	59.1	52.7	51.2	59.6	59.9
Heavy Trucks:	60.2	59.6	50.5	51.8	60.1	60.3
Vehicle Noise:	67.9	67.0	63.9	59.1	67.7	68.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	273	588
CNEL:	63	136	293	632

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Jamboree Road to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,426 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.44	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.80	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.75	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.7	64.9	58.9	67.5	68.1
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4
Heavy Trucks:	61.7	61.1	52.1	53.4	61.7	61.8
Vehicle Noise:	69.4	68.5	65.5	60.7	69.2	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	347	748
CNEL:	80	173	373	803

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Pacifica to Entertainment (Enterprise/Fortune)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,500 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,104 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.82	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.42	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.37	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.1	64.3	58.2	66.9	67.5
Medium Trucks:	60.7	60.0	53.7	52.1	60.6	60.8
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2
Vehicle Noise:	68.8	67.9	64.9	60.1	68.6	69.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	147	316	680
CNEL:	73	157	339	731

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,200 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,667 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.19	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.43	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.38	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	65.1	63.3	57.2	65.9	66.5
Medium Trucks:	59.7	59.0	52.6	51.1	59.6	59.8
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2
Vehicle Noise:	67.8	66.9	63.8	59.1	67.6	68.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	270	582
CNEL:	63	135	290	626



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Harvard Avenue to Hearthstone

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,145 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.91	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.33	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.29	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.1	64.4	58.3	67.0	67.6
Medium Trucks:	60.8	60.1	53.7	52.2	60.7	60.9
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	68.9	68.0	64.9	60.2	68.7	69.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	148	320	689
CNEL:	74	159	344	740

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Research to Hubble

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,200 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,584 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.41	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.65	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.61	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.8	63.1	57.0	65.6	66.2
Medium Trucks:	59.5	58.8	52.4	50.9	59.3	59.6
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0
Vehicle Noise:	67.6	66.7	63.6	58.8	67.4	67.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	121	261	563
CNEL:	60	130	281	605

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Barranca Parkway to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,279 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.34	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-18.58	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-22.53	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.0	63.9	62.1	56.1	64.7	65.3	
Medium Trucks:	58.5	57.9	51.5	50.0	58.4	58.6	
Heavy Trucks:	58.9	58.4	49.3	50.6	58.9	59.1	
Vehicle Noise:	66.7	65.7	62.7	57.9	66.5	66.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	105	227	488
CNEL:	52	113	243	524

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Bake Parkway to Muller

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,584 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.41	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.65	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.61	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.8	63.1	57.0	65.6	66.2
Medium Trucks:	59.5	58.8	52.4	50.9	59.3	59.6
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0
Vehicle Noise:	67.6	66.7	63.6	58.8	67.4	67.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	121	261	563
CNEL:	60	130	281	605

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Discovery to Charter

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,700 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,378 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.02	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-18.26	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-22.21	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.3	64.2	62.5	56.4	65.0	65.6
Medium Trucks:	58.9	58.2	51.8	50.3	58.7	59.0
Heavy Trucks:	59.3	58.7	49.6	50.9	59.3	59.4
Vehicle Noise:	67.0	66.1	63.0	58.2	66.8	67.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	111	238	513
CNEL:	55	119	256	551

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Hubble to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,900 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,559 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.48	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.72	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.67	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.8	64.8	63.0	56.9	65.6	66.2
Medium Trucks:	59.4	58.7	52.4	50.8	59.3	59.5
Heavy Trucks:	59.8	59.2	50.2	51.4	59.8	59.9
Vehicle Noise:	67.5	66.6	63.6	58.8	67.3	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	120	259	557
CNEL:	60	129	278	598

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Muller to Tesla

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,400 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,518 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.60	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.83	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.79	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.6	62.9	56.8	65.4	66.1
Medium Trucks:	59.3	58.6	52.2	50.7	59.2	59.4
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8
Vehicle Noise:	67.4	66.5	63.4	58.7	67.2	67.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	254	547
CNEL:	59	127	273	588

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Sand Canyon Avenue to Odyssey

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,100 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,493 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.91	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.86	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.6	64.6	62.8	56.8	65.4	66.0	
Medium Trucks:	59.2	58.5	52.2	50.6	59.1	59.3	
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7	
Vehicle Noise:	67.3	66.4	63.4	58.6	67.1	67.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	117	251	541
CNEL:	58	125	270	581



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Tesla to Scientific Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,100 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,328 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.18	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-18.41	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-22.37	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.1	62.3	56.2	64.9	65.5
Medium Trucks:	58.7	58.0	51.7	50.1	58.6	58.8
Heavy Trucks:	59.1	58.5	49.5	50.7	59.1	59.2
Vehicle Noise:	66.8	65.9	62.9	58.1	66.6	67.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	108	232	501
CNEL:	54	116	250	538

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Scientific Way to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 16,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,353 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.10	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-18.33	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-22.29	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.2	64.1	62.4	56.3	64.9	65.6	
Medium Trucks:	58.8	58.1	51.7	50.2	58.7	58.9	
Heavy Trucks:	59.2	58.6	49.6	50.8	59.2	59.3	
Vehicle Noise:	66.9	66.0	62.9	58.2	66.7	67.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	109	235	507
CNEL:	54	117	253	544

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Gateway Boulevard to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,213 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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Autos:	77.5%	12.9%	9.6%	97.42%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.57	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-18.81	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-22.77	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.7	63.7	61.9	55.9	64.5	65.1	
Medium Trucks:	58.3	57.6	51.3	49.7	58.2	58.4	
Heavy Trucks:	58.7	58.1	49.1	50.3	58.7	58.8	
Vehicle Noise:	66.4	65.5	62.5	57.7	66.2	66.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	101	219	471
CNEL:	51	109	235	506

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Laguna Canyon Road to Discovery

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,238 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.48	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-18.72	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-22.68	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.8	63.8	62.0	55.9	64.6	65.2	
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5	
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9	
Vehicle Noise:	66.5	65.6	62.6	57.8	66.3	66.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	222	477
CNEL:	51	111	238	513

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Odyssey to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,200 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,254 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.43	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-18.66	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-22.62	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	63.8	62.1	56.0	64.6	65.2
Medium Trucks:	58.4	57.8	51.4	49.9	58.3	58.6
Heavy Trucks:	58.9	58.3	49.2	50.5	58.8	59.0
Vehicle Noise:	66.6	65.7	62.6	57.8	66.4	66.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	104	224	482
CNEL:	52	112	240	518

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Center Drive (Edinger)  
 Road Segment: Redhill Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,376 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.35	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.89	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.84	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.6	64.8	58.8	67.4	68.0
Medium Trucks:	61.2	60.5	54.2	52.6	61.1	61.3
Heavy Trucks:	61.6	61.1	52.0	53.3	61.6	61.7
Vehicle Noise:	69.4	68.4	65.4	60.6	69.2	69.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	342	738
CNEL:	79	171	368	792

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: I-5 SB Off-Ramp to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 66,500 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,486 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.57	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-12.67	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-16.62	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.5	71.4	69.6	63.6	72.2	72.8
Medium Trucks:	65.8	65.2	58.8	57.3	65.7	66.0
Heavy Trucks:	65.9	65.3	56.3	57.5	65.9	66.0
Vehicle Noise:	74.0	73.1	70.2	65.3	73.8	74.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	151	326	702	1,512
CNEL:	163	350	755	1,627

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 73,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 6,056 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.00	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-12.24	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-16.20	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.3	72.2	70.5	64.4	73.0	73.6
Medium Trucks:	66.7	66.0	59.6	58.1	66.6	66.8
Heavy Trucks:	66.7	66.1	57.1	58.3	66.7	66.8
Vehicle Noise:	74.9	73.9	71.0	66.1	74.7	75.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	164	353	760	1,638
CNEL:	176	380	818	1,762



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Walnut Avenue to Michelle Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 55,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,538 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.75	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.49	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.45	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.6	70.6	68.8	62.7	71.4	72.0	
Medium Trucks:	65.0	64.3	58.0	56.4	64.9	65.1	
Heavy Trucks:	65.1	64.5	55.4	56.7	65.0	65.2	
Vehicle Noise:	73.2	72.3	69.3	64.5	73.0	73.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	133	287	618	1,332
CNEL:	143	309	665	1,433

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: I-405 NB Off-Ramp to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 73,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 6,056 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.00	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.24	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.20	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.7	73.6	71.8	65.8	74.4	75.0
Medium Trucks:	68.1	67.4	61.0	59.5	67.9	68.2
Heavy Trucks:	68.1	67.5	58.5	59.7	68.1	68.2
Vehicle Noise:	76.2	75.3	72.4	67.5	76.0	76.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	253	545	1,174	2,530
CNEL:	272	586	1,263	2,722

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Michelle Drive to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 55,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,538 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.75	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.49	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.45	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.6	70.6	68.8	62.7	71.4	72.0
Medium Trucks:	65.0	64.3	58.0	56.4	64.9	65.1
Heavy Trucks:	65.1	64.5	55.4	56.7	65.0	65.2
Vehicle Noise:	73.2	72.3	69.3	64.5	73.0	73.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	133	287	618	1,332
CNEL:	143	309	665	1,433

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Main Street to Kelvin Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 61,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,049 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.21	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.03	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.98	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.9	72.8	71.1	65.0	73.6	74.2
Medium Trucks:	67.3	66.6	60.2	58.7	67.2	67.4
Heavy Trucks:	67.3	66.7	57.7	58.9	67.3	67.4
Vehicle Noise:	75.5	74.5	71.6	66.7	75.3	75.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	224	483	1,040	2,241
CNEL:	241	519	1,119	2,411

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 74,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 6,130 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 130 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 88.792 Medium Trucks: 88.747 Heavy Trucks: 88.792																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.05	-3.84	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.19	-3.84	-1.20	-4.96	0.000	0.000
Heavy Trucks:	86.40	-16.14	-3.84	-1.20	-5.14	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.8	70.7	69.0	62.9	71.5	72.1
Medium Trucks:	65.2	64.5	58.1	56.6	65.1	65.3
Heavy Trucks:	65.2	64.6	55.6	56.8	65.2	65.3
Vehicle Noise:	73.4	72.4	69.5	64.6	73.2	73.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	179	385	830	1,788
CNEL:	192	414	893	1,923

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Kelvin Avenue to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 57,500 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,744 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	56.593			
Road Grade: 0.0%	Medium Trucks:	56.522			
Left View: -90.0 degrees	Heavy Trucks:	56.593			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.94	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.30	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.26	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.6	72.5	70.8	64.7	73.3	74.0
Medium Trucks:	67.0	66.3	60.0	58.4	66.9	67.1
Heavy Trucks:	67.0	66.4	57.4	58.7	67.0	67.1
Vehicle Noise:	75.2	74.3	71.3	66.4	75.0	75.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	215	463	998	2,150
CNEL:	231	498	1,074	2,313

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 56,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,678 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.88	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.36	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.32	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.5	72.5	70.7	64.7	73.3	73.9
Medium Trucks:	66.9	66.3	59.9	58.4	66.8	67.1
Heavy Trucks:	67.0	66.4	57.3	58.6	67.0	67.1
Vehicle Noise:	75.1	74.2	71.2	66.4	74.9	75.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	213	459	989	2,130
CNEL:	229	494	1,064	2,291

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Birch Street to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,300 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,325 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.40	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.84	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.80	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.2	67.4	61.4	70.0	70.6
Medium Trucks:	63.7	63.0	56.6	55.1	63.5	63.8
Heavy Trucks:	63.7	63.1	54.1	55.3	63.7	63.8
Vehicle Noise:	71.9	70.9	68.0	63.1	71.7	72.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	108	233	503	1,083
CNEL:	116	251	541	1,165



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Dupont Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,600 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,927 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.12	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.12	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.08	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.4	70.3	68.6	62.5	71.1	71.8
Medium Trucks:	64.8	64.1	57.8	56.2	64.7	64.9
Heavy Trucks:	64.8	64.2	55.2	56.5	64.8	64.9
Vehicle Noise:	73.0	72.1	69.1	64.2	72.8	73.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	264	570	1,227
CNEL:	132	284	613	1,320

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Alton Parkway to Beckman

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 53,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,447 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.66	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.58	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.54	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.3	72.3	70.5	64.4	73.1	73.7
Medium Trucks:	66.7	66.0	59.7	58.1	66.6	66.8
Heavy Trucks:	66.7	66.2	57.1	58.4	66.7	66.9
Vehicle Noise:	74.9	74.0	71.0	66.2	74.7	75.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	206	444	956	2,059
CNEL:	222	477	1,028	2,215

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Fairchild Road to Birch Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 37,500 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,094 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.08	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.16	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.11	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.4	69.3	67.5	61.5	70.1	70.7	
Medium Trucks:	63.8	63.1	56.7	55.2	63.6	63.9	
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9	
Vehicle Noise:	72.0	71.0	68.1	63.2	71.8	72.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	105	226	486	1,047
CNEL:	113	243	523	1,126

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Beckman to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 51,700 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,265 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.48	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.76	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.72	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.1	72.1	70.3	64.3	72.9	73.5
Medium Trucks:	66.5	65.9	59.5	58.0	66.4	66.7
Heavy Trucks:	66.6	66.0	56.9	58.2	66.6	66.7
Vehicle Noise:	74.7	73.8	70.8	66.0	74.5	75.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	200	431	930	2,003
CNEL:	215	464	1,000	2,155

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: I-5 NB Off-Ramp to El Camino Real

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 50,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,142 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.35	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.89	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.85	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.0	72.0	70.2	64.1	72.8	73.4
Medium Trucks:	66.4	65.7	59.4	57.8	66.3	66.5
Heavy Trucks:	66.4	65.9	56.8	58.1	66.4	66.6
Vehicle Noise:	74.6	73.7	70.7	65.8	74.4	74.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	196	423	912	1,964
CNEL:	211	455	981	2,113

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Campus Drive to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 40,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,317 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.38	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.85	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.81	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.6	67.8	61.8	70.4	71.0
Medium Trucks:	64.1	63.4	57.0	55.5	63.9	64.2
Heavy Trucks:	64.1	63.5	54.5	55.7	64.1	64.2
Vehicle Noise:	72.3	71.3	68.4	63.5	72.1	72.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	236	509	1,097
CNEL:	118	254	548	1,180

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: El Camino Real to West Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 50,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,142 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.35	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.89	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.85	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.0	72.0	70.2	64.1	72.8	73.4
Medium Trucks:	66.4	65.7	59.4	57.8	66.3	66.5
Heavy Trucks:	66.4	65.9	56.8	58.1	66.4	66.6
Vehicle Noise:	74.6	73.7	70.7	65.8	74.4	74.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	196	423	912	1,964
CNEL:	211	455	981	2,113

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: West Drive to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 50,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,142 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.35	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.89	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.85	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.0	72.0	70.2	64.1	72.8	73.4	
Medium Trucks:	66.4	65.7	59.4	57.8	66.3	66.5	
Heavy Trucks:	66.4	65.9	56.8	58.1	66.4	66.6	
Vehicle Noise:	74.6	73.7	70.7	65.8	74.4	74.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	196	423	912	1,964
CNEL:	211	455	981	2,113



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Bryan Avenue to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,779 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.95	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-14.29	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-18.24	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.6	71.6	69.8	63.7	72.4	73.0
Medium Trucks:	66.0	65.3	59.0	57.4	65.9	66.1
Heavy Trucks:	66.0	65.5	56.4	57.7	66.0	66.2
Vehicle Noise:	74.2	73.3	70.3	65.4	74.0	74.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	185	398	857	1,847
CNEL:	199	428	922	1,987

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Koll Center to Fairchild Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,900 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,714 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.51	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.72	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.68	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	67.0	60.9	69.5	70.2
Medium Trucks:	63.2	62.5	56.2	54.6	63.1	63.3
Heavy Trucks:	63.2	62.6	53.6	54.9	63.2	63.3
Vehicle Noise:	71.4	70.5	67.5	62.6	71.2	71.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	96	207	445	959
CNEL:	103	222	479	1,032

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: MacArthur Boulevard to Koll Center

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 34,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,830 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.69	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.54	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.50	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.0	68.9	67.2	61.1	69.7	70.3	
Medium Trucks:	63.4	62.7	56.3	54.8	63.3	63.5	
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5	
Vehicle Noise:	71.6	70.6	67.7	62.8	71.4	71.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	99	213	458	986
CNEL:	106	229	493	1,061

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Irvine Boulevard to Portola Pakway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,500 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,021 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.23	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.00	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.96	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.1	65.3	59.2	67.9	68.5
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6
Heavy Trucks:	61.5	61.0	51.9	53.2	61.5	61.6
Vehicle Noise:	69.7	68.8	65.8	60.9	69.5	70.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	167	361	777
CNEL:	84	180	388	836

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Warner Avenue to Edinger Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 83,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 6,922 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 96 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.438 Medium Trucks: 42.344 Heavy Trucks: 42.439																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.58	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-11.66	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-15.61	0.96	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)						
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	77.1	76.1	74.3	68.2	76.9	77.5
Medium Trucks:	70.5	69.9	63.5	61.9	70.4	70.6
Heavy Trucks:	70.5	70.0	60.9	62.2	70.5	70.7
Vehicle Noise:	78.7	77.8	74.8	69.9	78.5	79.0

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	236	509	1,096	2,361
CNEL:	254	547	1,179	2,540

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 68,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,668 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 96 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.438 Medium Trucks: 42.344 Heavy Trucks: 42.439																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.71	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-12.53	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-16.48	0.96	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	76.3	75.2	73.4	67.4	76.0	76.6	
Medium Trucks:	69.7	69.0	62.6	61.1	69.5	69.8	
Heavy Trucks:	69.7	69.1	60.1	61.3	69.7	69.8	
Vehicle Noise:	77.8	76.9	74.0	69.1	77.6	78.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	207	445	959	2,066
CNEL:	222	479	1,032	2,223

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Edinger Avenue to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 64,000 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,280 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 96 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 64.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 64.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 42.438				
Road Grade: 0.0%	Medium Trucks: 42.344				
Left View: -90.0 degrees	Heavy Trucks: 42.439				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.40	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-12.83	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-16.79	0.96	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	75.9	74.9	73.1	67.1	75.7	76.3	
Medium Trucks:	69.3	68.7	62.3	60.8	69.2	69.5	
Heavy Trucks:	69.4	68.8	59.7	61.0	69.4	69.5	
Vehicle Noise:	77.5	76.6	73.6	68.8	77.3	77.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	197	425	915	1,971
CNEL:	212	457	984	2,120

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jeffrey Road  
 Road Segment: Walnut Avenue to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 50,500 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,166 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.25	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.99	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.95	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	66.0	59.9	68.5	69.2
Medium Trucks:	62.6	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	70.6	69.7	66.6	61.9	70.5	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	194	418	900
CNEL:	97	208	448	966



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jeffrey Road  
 Road Segment: I-5 NB Off-Ramp to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 57,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,703 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.77	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.47	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.42	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.7	66.9	60.9	69.5	70.1
Medium Trucks:	63.5	62.8	56.5	54.9	63.4	63.6
Heavy Trucks:	64.3	63.8	54.7	56.0	64.3	64.5
Vehicle Noise:	71.6	70.7	67.5	62.8	71.4	71.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	99	213	460	990
CNEL:	106	229	493	1,062

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jeffrey Road  
 Road Segment: Poplar (Meadows) to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,680 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.49	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.2	65.4	59.4	68.0	68.6	
Medium Trucks:	62.0	61.4	55.0	53.4	61.9	62.1	
Heavy Trucks:	62.9	62.3	53.2	54.5	62.9	63.0	
Vehicle Noise:	70.1	69.2	66.0	61.4	69.9	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	179	385	829
CNEL:	89	192	413	889

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jeffrey Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,200 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,647 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.57	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.53	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.2	65.4	59.3	68.0	68.6
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.8	62.2	53.2	54.5	62.8	62.9
Vehicle Noise:	70.1	69.2	66.0	61.3	69.9	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	382	824
CNEL:	88	190	410	884

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Center Drive to Poplar (Meadows)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 42,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,539 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.54	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.70	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.66	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.1	67.0	65.3	59.2	67.8	68.4	
Medium Trucks:	61.9	61.2	54.8	53.3	61.7	62.0	
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8	
Vehicle Noise:	69.9	69.0	65.9	61.2	69.7	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	375	808
CNEL:	87	187	402	866

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jeffrey Road  
 Road Segment: I-405 NB Off-Ramp to Quail Creek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,663 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.69	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.55	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.51	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.2	65.4	59.4	68.0	68.6
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.8	62.3	53.2	54.5	62.8	63.0
Vehicle Noise:	70.1	69.2	66.0	61.4	69.9	70.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	178	384	826
CNEL:	89	191	411	886

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jeffrey Road  
 Road Segment: Barranca Parkway to Irvine Valley College

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 43,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,581 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.59	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.65	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.61	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	67.1	65.3	59.3	67.9	68.5	
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0	
Heavy Trucks:	62.7	62.2	53.1	54.4	62.7	62.9	
Vehicle Noise:	70.0	69.1	65.9	61.3	69.8	70.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	175	378	814
CNEL:	87	188	405	873

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jeffrey Road  
 Road Segment: Quail Creek to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,663 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.69	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.55	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.51	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.2	65.4	59.4	68.0	68.6	
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1	
Heavy Trucks:	62.8	62.3	53.2	54.5	62.8	63.0	
Vehicle Noise:	70.1	69.2	66.0	61.4	69.9	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	178	384	826
CNEL:	89	191	411	886

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Valley College to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 42,200 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,482 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.47	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.77	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.73	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	67.0	65.2	59.1	67.8	68.4
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	62.6	62.0	53.0	54.3	62.6	62.7
Vehicle Noise:	69.9	69.0	65.8	61.1	69.7	70.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	172	371	799
CNEL:	86	185	398	857



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jeffrey Road  
 Road Segment: Trabuco Road to Hideaway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 35,700 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,945 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.74	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.50	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.45	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.2	64.5	58.4	67.0	67.6
Medium Trucks:	61.1	60.4	54.0	52.5	60.9	61.2
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	69.1	68.2	65.1	60.4	68.9	69.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	154	332	714
CNEL:	77	165	356	766

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jeffrey Road  
 Road Segment: Hideaway to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,945 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.74	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.50	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.45	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.2	64.5	58.4	67.0	67.6
Medium Trucks:	61.1	60.4	54.0	52.5	60.9	61.2
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	69.1	68.2	65.1	60.4	68.9	69.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	154	332	714
CNEL:	77	165	356	766

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jeffrey Road  
 Road Segment: Roosevelt to Grove

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,069 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.92	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.32	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.28	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.8	65.1	59.0	67.6	68.2
Medium Trucks:	61.6	61.0	54.6	53.1	61.5	61.8
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	69.7	68.8	65.7	61.0	69.5	70.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	346	745
CNEL:	80	172	371	799

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jeffrey Road  
 Road Segment: Grove to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 37,200 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,069 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.92	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.32	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.28	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.8	65.1	59.0	67.6	68.2
Medium Trucks:	61.6	61.0	54.6	53.1	61.5	61.8
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	69.7	68.8	65.7	61.0	69.5	70.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	346	745
CNEL:	80	172	371	799

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jeffrey Road  
 Road Segment: Bryan Avenue to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,186 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.45	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.79	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.75	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.0	64.9	63.2	57.1	65.7	66.4	
Medium Trucks:	59.8	59.1	52.7	51.2	59.6	59.9	
Heavy Trucks:	60.6	60.0	51.0	52.2	60.6	60.7	
Vehicle Noise:	67.8	66.9	63.8	59.1	67.7	68.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	126	272	586
CNEL:	63	135	292	628

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jeffrey Road  
 Road Segment: Encore to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 858 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.62	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-19.85	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-23.81	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	60.9	59.1	53.1	61.7	62.3
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8
Heavy Trucks:	56.5	56.0	46.9	48.2	56.5	56.7
Vehicle Noise:	63.8	62.9	59.7	55.0	63.6	64.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	68	146	314
CNEL:	34	73	156	337

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Boulevard to Encore

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 858 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.62	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-19.85	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-23.81	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	60.9	59.1	53.1	61.7	62.3
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8
Heavy Trucks:	56.5	56.0	46.9	48.2	56.5	56.7
Vehicle Noise:	63.8	62.9	59.7	55.0	63.6	64.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	68	146	314
CNEL:	34	73	156	337

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jeronimo Road  
 Road Segment: Goodyear to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 635 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.92	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.16	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.12	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.3	61.2	59.5	53.4	62.0	62.6	
Medium Trucks:	56.1	55.4	49.0	47.5	55.9	56.2	
Heavy Trucks:	56.9	56.3	47.3	48.5	56.9	57.0	
Vehicle Noise:	64.1	63.2	60.1	55.4	63.9	64.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	53	114	246
CNEL:	26	57	123	264



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jeronimo Road  
 Road Segment: Alton Parkway to Goodyear

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 594 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.41	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.0	60.9	59.2	53.1	61.7	62.3
Medium Trucks:	55.8	55.1	48.7	47.2	55.6	55.9
Heavy Trucks:	56.6	56.0	47.0	48.2	56.6	56.7
Vehicle Noise:	63.8	62.9	59.8	55.1	63.6	64.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	51	109	236
CNEL:	25	54	117	253

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Laguna Canyon Road  
 Road Segment: Old Laguna Canyon Road to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,700 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,688 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.85	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.39	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.35	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.7	67.9	61.8	70.5	71.1
Medium Trucks:	64.1	63.4	57.1	55.5	64.0	64.2
Heavy Trucks:	64.1	63.6	54.5	55.8	64.1	64.3
Vehicle Noise:	72.3	71.4	68.4	63.6	72.1	72.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	116	250	539	1,160
CNEL:	125	269	579	1,248

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Laguna Canyon Road  
 Road Segment: Laguna Canyon Freeway to Quail Hill Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	10,000 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	825 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		57.786		
Left View:	-90.0 degrees	Medium Trucks:		57.717		
Right View:	90.0 degrees	Heavy Trucks:		57.787		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-3.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-20.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-24.85	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.8	63.0	57.0	65.6	66.2
Medium Trucks:	59.3	58.6	52.2	50.7	59.2	59.4
Heavy Trucks:	59.3	58.7	49.7	50.9	59.3	59.4
Vehicle Noise:	67.5	66.5	63.6	58.7	67.3	67.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	88	190	410
CNEL:	44	95	205	441

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Laguna Canyon Road  
 Road Segment: Discovery to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 421 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-6.58	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-23.82	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-27.78	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.0	61.9	60.1	54.1	62.7	63.3	
Medium Trucks:	56.3	55.7	49.3	47.8	56.2	56.5	
Heavy Trucks:	56.4	55.8	46.8	48.0	56.4	56.5	
Vehicle Noise:	64.5	63.6	60.6	55.8	64.3	64.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	56	121	262
CNEL:	28	61	131	282

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Laguna Canyon Road  
 Road Segment: I-405 Overcrossing to Pasteur

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 454 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.84	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-23.08	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-27.03	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.1	63.0	61.2	55.2	63.8	64.4	
Medium Trucks:	57.6	57.0	50.6	49.1	57.5	57.8	
Heavy Trucks:	58.1	57.5	48.4	49.7	58.0	58.2	
Vehicle Noise:	65.8	64.8	61.8	57.0	65.6	66.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	55	118	253
CNEL:	27	59	126	272

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Laguna Canyon Road  
 Road Segment: Irvine Center Drive to Discovery

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,900 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	322 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-7.75	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-24.99	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-28.94	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.8	60.7	59.0	52.9	61.5	62.1
Medium Trucks:	55.2	54.5	48.1	46.6	55.1	55.3
Heavy Trucks:	55.2	54.6	45.6	46.8	55.2	55.3
Vehicle Noise:	63.4	62.4	59.5	54.6	63.2	63.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	102	219
CNEL:	24	51	109	235

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Laguna Canyon Road  
 Road Segment: Quail Hill Parkway to I-405 Overcrossing

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	5,500 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	454 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	50.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 42.814				
Road Grade:	0.0%	Medium Trucks: 42.720				
Left View:	-90.0 degrees	Heavy Trucks: 42.814				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.84	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-23.08	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-27.03	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.1	63.0	61.2	55.2	63.8	64.4
Medium Trucks:	57.6	57.0	50.6	49.1	57.5	57.8
Heavy Trucks:	58.1	57.5	48.4	49.7	58.0	58.2
Vehicle Noise:	65.8	64.8	61.8	57.0	65.6	66.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	55	118	253
CNEL:	27	59	126	272

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Laguna Canyon Road  
 Road Segment: Pasteur to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,000 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	495 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-5.88	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-23.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-27.07	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.7	62.6	60.8	54.8	63.4	64.0	
Medium Trucks:	57.1	56.4	50.0	48.5	56.9	57.2	
Heavy Trucks:	57.1	56.5	47.5	48.7	57.1	57.2	
Vehicle Noise:	65.2	64.3	61.4	56.5	65.0	65.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	135	292
CNEL:	31	68	146	314



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Laguna Canyon Road  
 Road Segment: Waterworks to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 388 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-6.94	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-24.18	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-28.13	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.6	61.5	59.8	53.7	62.3	62.9
Medium Trucks:	56.0	55.3	49.0	47.4	55.9	56.1
Heavy Trucks:	56.0	55.4	46.4	47.6	56.0	56.1
Vehicle Noise:	64.2	63.2	60.3	55.4	64.0	64.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	53	115	248
CNEL:	27	57	124	267

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Laguna Canyon Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	5,100 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	421 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-6.58	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-23.82	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-27.78	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.0	61.9	60.1	54.1	62.7	63.3
Medium Trucks:	56.3	55.7	49.3	47.8	56.2	56.5
Heavy Trucks:	56.4	55.8	46.8	48.0	56.4	56.5
Vehicle Noise:	64.5	63.6	60.6	55.8	64.3	64.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	56	121	262
CNEL:	28	61	131	282

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Laguna Canyon Road  
 Road Segment: Barranca Parkway to Waterworks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 338 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-7.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-24.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-28.72	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.0	60.9	59.2	53.1	61.7	62.3	
Medium Trucks:	55.4	54.7	48.4	46.8	55.3	55.5	
Heavy Trucks:	55.4	54.8	45.8	47.1	55.4	55.5	
Vehicle Noise:	63.6	62.7	59.7	54.8	63.4	63.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	49	105	226
CNEL:	24	52	113	243

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Lake Forest Drive  
 Road Segment: Hidden Canyon to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,500 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,196 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.63	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.82	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.3	63.5	57.4	66.1	66.7
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	68.0	67.1	64.1	59.3	67.8	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	96	208	448
CNEL:	48	104	223	481

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Lake Forest Drive  
 Road Segment: Bake Parkway to Hidden Canyon (Romano)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,500 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,196 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.63	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.82	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.3	63.5	57.4	66.1	66.7
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	68.0	67.1	64.1	59.3	67.8	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	96	208	448
CNEL:	48	104	223	481

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Lake Forest Drive  
 Road Segment: Tesla to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 883 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.95	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-20.19	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-24.14	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.4	62.3	60.5	54.5	63.1	63.7
Medium Trucks:	56.9	56.2	49.9	48.3	56.8	57.0
Heavy Trucks:	57.3	56.8	47.7	49.0	57.3	57.4
Vehicle Noise:	65.1	64.1	61.1	56.3	64.9	65.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	177	381
CNEL:	41	88	190	410

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Lake Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	5,800 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	479 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	50.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 42.814				
Road Grade:	0.0%	Medium Trucks: 42.720				
Left View:	-90.0 degrees	Heavy Trucks: 42.814				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-2.60	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	70.80	-19.84	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	77.97	-23.79	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.8	54.8	53.0	47.0	55.6	56.2
Medium Trucks:	50.7	50.0	43.6	42.1	50.6	50.8
Heavy Trucks:	53.9	53.3	44.3	45.5	53.9	54.0
Vehicle Noise:	58.7	57.9	54.0	50.1	58.6	59.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	40	86
CNEL:	9	20	43	92

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Lynx  
 Road Segment: Irvine Boulevard to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	0 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-40.23	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-57.47	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-61.43	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	19.1	18.1	16.3	10.3	18.9	19.5
Medium Trucks:	14.0	13.3	6.9	5.4	13.9	14.1
Heavy Trucks:	17.2	16.6	7.6	8.8	17.2	17.3
Vehicle Noise:	22.0	21.2	17.3	13.4	21.9	22.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	0
CNEL:	0	0	0	0



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: MacArthur Boulevard  
 Road Segment: I-405 SB Off-Ramp to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 51,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,274 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 60 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.11	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-14.13	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-18.09	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.2	73.2	71.4	65.3	74.0	74.6
Medium Trucks:	67.5	66.8	60.4	58.9	67.3	67.6
Heavy Trucks:	67.1	66.5	57.5	58.8	67.1	67.2
Vehicle Noise:	75.7	74.8	71.9	66.9	75.5	76.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	232	501	1,079	2,324
CNEL:	250	539	1,162	2,503

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: MacArthur Boulevard  
 Road Segment: Main Street to I-405 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 50,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,150 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	2.98	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-14.26	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-18.21	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	74.1	73.0	71.3	65.2	73.8	74.4	
Medium Trucks:	67.3	66.7	60.3	58.7	67.2	67.4	
Heavy Trucks:	67.0	66.4	57.4	58.6	67.0	67.1	
Vehicle Noise:	75.6	74.6	71.8	66.8	75.4	75.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	228	491	1,058	2,279
CNEL:	245	529	1,139	2,454

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: MacArthur Boulevard  
 Road Segment: I-405 NB Off-Ramp and I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 48,200 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,977 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 60 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	2.79	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-14.44	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-18.40	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.9	72.8	71.1	65.0	73.6	74.2
Medium Trucks:	67.1	66.5	60.1	58.6	67.0	67.3
Heavy Trucks:	66.8	66.2	57.2	58.4	66.8	66.9
Vehicle Noise:	75.4	74.5	71.6	66.6	75.2	75.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	221	477	1,028	2,215
CNEL:	239	514	1,107	2,385

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: MacArthur Boulevard  
 Road Segment: Jamboree Road to Fairchild Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,127 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.00	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.24	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.19	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.6	66.5	64.7	58.7	67.3	67.9	
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4	
Heavy Trucks:	62.2	61.6	52.5	53.8	62.1	62.3	
Vehicle Noise:	69.4	68.5	65.3	60.7	69.2	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	345	744
CNEL:	80	172	370	798

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: MacArthur Boulevard  
 Road Segment: Fairchild Road to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,127 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.00	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.24	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.19	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.6	66.5	64.7	58.7	67.3	67.9	
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4	
Heavy Trucks:	62.2	61.6	52.5	53.8	62.1	62.3	
Vehicle Noise:	69.4	68.5	65.3	60.7	69.2	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	345	744
CNEL:	80	172	370	798

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: MacArthur Boulevard  
 Road Segment: Fitch to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 40,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,374 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.33	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.91	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.86	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.2	65.5	59.4	68.0	68.6
Medium Trucks:	62.1	61.4	55.0	53.5	61.9	62.2
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0
Vehicle Noise:	70.1	69.2	66.1	61.4	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	171	368	793
CNEL:	85	183	395	851

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: MacArthur Boulevard  
 Road Segment: Michelson Drive to Douglas

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,200 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,987 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.80	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-14.44	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-18.39	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.1	66.3	60.3	68.9	69.5
Medium Trucks:	62.9	62.2	55.9	54.3	62.8	63.0
Heavy Trucks:	63.7	63.2	54.1	55.4	63.7	63.9
Vehicle Noise:	71.0	70.1	66.9	62.3	70.8	71.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	243	524	1,130
CNEL:	121	261	562	1,212

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: MacArthur Boulevard  
 Road Segment: Douglas to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,200 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,987 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.80	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-14.44	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-18.39	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.1	66.3	60.3	68.9	69.5
Medium Trucks:	62.9	62.2	55.9	54.3	62.8	63.0
Heavy Trucks:	63.7	63.2	54.1	55.4	63.7	63.9
Vehicle Noise:	71.0	70.1	66.9	62.3	70.8	71.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	243	524	1,130
CNEL:	121	261	562	1,212



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: MacArthur Boulevard  
 Road Segment: Skypark to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,459 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.96	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.28	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.24	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.9	65.9	64.1	58.0	66.7	67.3	
Medium Trucks:	60.7	60.0	53.7	52.1	60.6	60.8	
Heavy Trucks:	61.5	60.9	51.9	53.2	61.5	61.6	
Vehicle Noise:	68.8	67.9	64.7	60.0	68.6	69.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	138	298	642
CNEL:	69	148	320	689

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: MacArthur Boulevard  
 Road Segment: Redhill Avenue to Skypark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,100 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,153 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.38	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.86	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.81	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.9	63.1	57.1	65.7	66.3
Medium Trucks:	59.7	59.0	52.7	51.1	59.6	59.8
Heavy Trucks:	60.5	60.0	50.9	52.2	60.5	60.6
Vehicle Noise:	67.8	66.9	63.7	59.0	67.6	68.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	269	580
CNEL:	62	134	289	622

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: MacArthur Boulevard  
 Road Segment: Birch Street to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 18,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,510 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.16	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-17.40	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-21.36	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.3	61.6	55.5	64.1	64.7
Medium Trucks:	58.2	57.5	51.1	49.6	58.0	58.3
Heavy Trucks:	59.0	58.4	49.4	50.6	59.0	59.1
Vehicle Noise:	66.2	65.3	62.2	57.5	66.0	66.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	99	212	458
CNEL:	49	106	228	491

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: MacArthur Boulevard  
 Road Segment: Campus Drive to Birch Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,601 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.09	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-17.15	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-21.10	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.4	63.6	57.6	66.2	66.8
Medium Trucks:	60.2	59.5	53.2	51.6	60.1	60.3
Heavy Trucks:	61.0	60.5	51.4	52.7	61.0	61.1
Vehicle Noise:	68.3	67.4	64.2	59.5	68.1	68.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	346	745
CNEL:	80	172	371	799

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Main Street  
 Road Segment: Gillette Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,681 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.33	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.91	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.86	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.3	66.2	64.5	58.4	67.0	67.6	
Medium Trucks:	61.1	60.4	54.0	52.5	60.9	61.2	
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0	
Vehicle Noise:	69.1	68.2	65.1	60.4	68.9	69.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	147	316	681
CNEL:	73	157	339	730

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Main Street  
 Road Segment: MacArthur Boulevard to Mercantile

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,681 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.33	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.91	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.86	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.3	66.2	64.5	58.4	67.0	67.6	
Medium Trucks:	61.1	60.4	54.0	52.5	60.9	61.2	
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0	
Vehicle Noise:	69.1	68.2	65.1	60.4	68.9	69.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	147	316	681
CNEL:	73	157	339	730

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Main Street  
 Road Segment: Executive Park to MacArthur Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,980 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.02	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.22	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.18	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.5	62.7	56.7	65.3	65.9
Medium Trucks:	59.3	58.7	52.3	50.8	59.2	59.4
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3
Vehicle Noise:	67.4	66.5	63.4	58.7	67.2	67.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	254	548
CNEL:	59	127	273	588

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Main Street  
 Road Segment: Von Karman Avenue to Cartwright

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,766 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.52	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.72	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.68	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.0	62.3	56.2	64.8	65.4
Medium Trucks:	58.8	58.2	51.8	50.3	58.7	59.0
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8
Vehicle Noise:	66.9	66.0	62.9	58.2	66.7	67.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	109	236	508
CNEL:	54	117	253	545



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Main Street  
 Road Segment: McDermott to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,300 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,087 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.24	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.99	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.95	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.8	64.7	63.0	56.9	65.5	66.2
Medium Trucks:	59.6	58.9	52.5	51.0	59.4	59.7
Heavy Trucks:	60.4	59.8	50.8	52.0	60.4	60.5
Vehicle Noise:	67.6	66.7	63.6	58.9	67.5	67.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	122	264	568
CNEL:	61	131	283	609

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Main Street  
 Road Segment: Red Hill Avenue to Executive Circle

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,980 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.02	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.22	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.18	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.5	62.7	56.7	65.3	65.9
Medium Trucks:	59.3	58.7	52.3	50.8	59.2	59.4
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3
Vehicle Noise:	67.4	66.5	63.4	58.7	67.2	67.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	254	548
CNEL:	59	127	273	588

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Main Street  
 Road Segment: Jamboree Road to Union

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,865 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.75	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.48	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.44	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.3	64.3	62.5	56.4	65.1	65.7
Medium Trucks:	59.1	58.4	52.0	50.5	59.0	59.2
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0
Vehicle Noise:	67.2	66.2	63.1	58.4	67.0	67.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	113	245	527
CNEL:	57	122	262	565

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Main Street  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,100 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,163 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.53	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.49	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	63.9	62.1	56.0	64.7	65.3
Medium Trucks:	58.7	58.0	51.6	50.1	58.6	58.8
Heavy Trucks:	59.5	58.9	49.9	51.1	59.5	59.6
Vehicle Noise:	66.8	65.8	62.7	58.0	66.6	67.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	171	369
CNEL:	40	85	184	396

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Main Street  
 Road Segment: Siglo to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,766 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.52	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.72	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.68	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.0	62.3	56.2	64.8	65.4
Medium Trucks:	58.8	58.2	51.8	50.3	58.7	59.0
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8
Vehicle Noise:	66.9	66.0	62.9	58.2	66.7	67.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	109	236	508
CNEL:	54	117	253	545

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Main Street  
 Road Segment: Veneto to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,865 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.75	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.48	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.44	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.3	64.3	62.5	56.4	65.1	65.7
Medium Trucks:	59.1	58.4	52.0	50.5	59.0	59.2
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0
Vehicle Noise:	67.2	66.2	63.1	58.4	67.0	67.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	113	245	527
CNEL:	57	122	262	565

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Main Street  
 Road Segment: Paseo Westpark to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,600 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 957 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.34	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.1	63.0	61.2	55.2	63.8	64.4
Medium Trucks:	57.8	57.2	50.8	49.3	57.7	57.9
Heavy Trucks:	58.7	58.1	49.0	50.3	58.7	58.8
Vehicle Noise:	65.9	65.0	61.9	57.2	65.7	66.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	70	150	324
CNEL:	35	75	161	347

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Main Street  
 Road Segment: Harvard Avenue to San Mateo

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,600 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 957 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.34	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.1	63.0	61.2	55.2	63.8	64.4
Medium Trucks:	57.8	57.2	50.8	49.3	57.7	57.9
Heavy Trucks:	58.7	58.1	49.0	50.3	58.7	58.8
Vehicle Noise:	65.9	65.0	61.9	57.2	65.7	66.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	70	150	324
CNEL:	35	75	161	347



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Marine Way  
 Road Segment: Sand Canyon Avenue to Ridge Valley (O Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,188 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 42.814				
Road Grade: 0.0%		Medium Trucks: 42.720				
Left View: -90.0 degrees		Heavy Trucks: 42.814				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.69	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	77.72	-17.93	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	82.99	-21.89	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.5	64.5	62.7	56.6	65.3	65.9
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6
Heavy Trucks:	60.8	60.2	51.2	52.4	60.8	60.9
Vehicle Noise:	67.5	66.6	63.4	58.8	67.3	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	72	155	333
CNEL:	36	77	165	356

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Marine Way  
 Road Segment: Alton Parkway to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	0 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-42.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-59.51	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-63.47	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	22.0	20.9	19.2	13.1	21.7	22.3
Medium Trucks:	16.0	15.3	8.9	7.4	15.8	16.1
Heavy Trucks:	17.3	16.7	7.7	8.9	17.3	17.4
Vehicle Noise:	24.0	23.1	19.8	15.3	23.8	24.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	1
CNEL:	0	0	0	1

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Marine Way  
 Road Segment: Lynx to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 0 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-42.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-59.51	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-63.47	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	22.0	20.9	19.2	13.1	21.7	22.3
Medium Trucks:	16.0	15.3	8.9	7.4	15.8	16.1
Heavy Trucks:	17.3	16.7	7.7	8.9	17.3	17.4
Vehicle Noise:	24.0	23.1	19.8	15.3	23.8	24.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	1
CNEL:	0	0	0	1

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Marine Way  
 Road Segment: County Access to Treble

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 264 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-7.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-24.46	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-28.42	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	57.0	56.0	54.2	48.2	56.8	57.4	
Medium Trucks:	51.0	50.3	44.0	42.4	50.9	51.1	
Heavy Trucks:	52.3	51.7	42.7	44.0	52.3	52.4	
Vehicle Noise:	59.0	58.2	54.9	50.3	58.9	59.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	113
CNEL:	12	26	56	121

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Marine Way  
 Road Segment: Ridge Valley (O Street) to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 5,900 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 487 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.76	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	59.7	58.6	56.9	50.8	59.4	60.0	
Medium Trucks:	53.7	53.0	46.6	45.1	53.6	53.8	
Heavy Trucks:	55.0	54.4	45.4	46.6	55.0	55.1	
Vehicle Noise:	61.7	60.8	57.5	53.0	61.5	62.0	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	79	170
CNEL:	18	39	85	182

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Marine Way  
 Road Segment: Skyhawk to County Access

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 264 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-7.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-24.46	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-28.42	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	57.0	56.0	54.2	48.2	56.8	57.4	
Medium Trucks:	51.0	50.3	44.0	42.4	50.9	51.1	
Heavy Trucks:	52.3	51.7	42.7	44.0	52.3	52.4	
Vehicle Noise:	59.0	58.2	54.9	50.3	58.9	59.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	113
CNEL:	12	26	56	121

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Marine Way  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 58 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-13.82	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-31.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-35.02	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	50.4	49.4	47.6	41.6	50.2	50.8	
Medium Trucks:	44.4	43.7	37.4	35.8	44.3	44.5	
Heavy Trucks:	45.7	45.1	36.1	37.4	45.7	45.8	
Vehicle Noise:	52.4	51.6	48.3	43.7	52.3	52.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	19	41
CNEL:	4	9	20	44

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Marine Way  
 Road Segment: Treble to Lynx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	0 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-42.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-59.51	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-63.47	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	22.0	20.9	19.2	13.1	21.7	22.3
Medium Trucks:	16.0	15.3	8.9	7.4	15.8	16.1
Heavy Trucks:	17.3	16.7	7.7	8.9	17.3	17.4
Vehicle Noise:	24.0	23.1	19.8	15.3	23.8	24.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	1
CNEL:	0	0	0	1



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: McGaw Avenue  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,600 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	710 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-2.35	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-19.59	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-23.54	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.7	58.6	56.9	50.8	59.4	60.0
Medium Trucks:	53.9	53.3	46.9	45.3	53.8	54.0
Heavy Trucks:	55.8	55.2	46.2	47.4	55.8	55.9
Vehicle Noise:	61.9	61.0	57.6	53.2	61.8	62.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	38	82	176
CNEL:	19	41	87	188

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: McGaw Avenue  
 Road Segment: Red Hill Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 8,400 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 693 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 35 mph					
Near/Far Lane Distance: 48 feet					
	<b>Vehicle Mix</b>				
	VehicleType	Day	Evening	Night	Daily
	Autos: 77.5% 12.9% 9.6% 97.42%				
	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000				
Centerline Dist. to Barrier: 62.5 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Centerline Dist. to Observer: 62.5 feet					
Barrier Distance to Observer: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Observer Height (Above Pad): 5.0 feet	Autos: 57.786				
Pad Elevation: 0.0 feet	Medium Trucks: 57.717				
Road Elevation: 0.0 feet	Heavy Trucks: 57.787				
Road Grade: 0.0%					
Left View: -90.0 degrees					
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-2.45	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-19.69	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-23.65	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.6	58.5	56.8	50.7	59.3	59.9
Medium Trucks:	53.8	53.1	46.8	45.2	53.7	53.9
Heavy Trucks:	55.7	55.1	46.1	47.3	55.7	55.8
Vehicle Noise:	61.8	60.9	57.5	53.1	61.6	62.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	81	173
CNEL:	19	40	86	185

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: McGaw Avenue  
 Road Segment: Daimler to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 536 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-3.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-20.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-24.76	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	58.5	57.4	55.7	49.6	58.2	58.8	
Medium Trucks:	52.7	52.0	45.7	44.1	52.6	52.8	
Heavy Trucks:	54.6	54.0	44.9	46.2	54.5	54.7	
Vehicle Noise:	60.7	59.8	56.4	52.0	60.5	61.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	15	31	68	146
CNEL:	16	34	72	156

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: McGaw Avenue  
 Road Segment: Jamboree Road to Murphy Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 248 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-6.92	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-24.16	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-28.12	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	55.1	54.1	52.3	46.2	54.9	55.5	
Medium Trucks:	49.3	48.7	42.3	40.8	49.2	49.5	
Heavy Trucks:	51.2	50.6	41.6	42.8	51.2	51.3	
Vehicle Noise:	57.4	56.5	53.0	48.6	57.2	57.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	41	87
CNEL:	9	20	43	93

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Meadowood  
 Road Segment: Culver Drive to Canyonwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 858 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 25 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-0.06	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-17.30	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-21.26	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.4	55.4	53.6	47.5	56.2	56.8
Medium Trucks:	51.3	50.6	44.2	42.7	51.1	51.4
Heavy Trucks:	54.5	53.9	44.8	46.1	54.5	54.6
Vehicle Noise:	59.3	58.5	54.6	50.6	59.1	59.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	25	55	118
CNEL:	13	27	58	125

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Meridian  
 Road Segment: Spectrum to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,200 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	182 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-7.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-24.84	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-28.80	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	51.9	50.8	49.1	43.0	51.6	52.2	
Medium Trucks:	46.4	45.7	39.4	37.8	46.3	46.5	
Heavy Trucks:	48.9	48.3	39.3	40.5	48.9	49.0	
Vehicle Noise:	54.4	53.5	49.9	45.7	54.2	54.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	12	26	56
CNEL:	6	13	27	59

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Meridian  
 Road Segment: Alton Parkway to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1,700 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	140 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-8.72	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-25.96	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-29.92	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	50.8	49.7	48.0	41.9	50.5	51.1
Medium Trucks:	45.3	44.6	38.2	36.7	45.2	45.4
Heavy Trucks:	47.8	47.2	38.1	39.4	47.7	47.9
Vehicle Noise:	53.3	52.4	48.8	44.6	53.1	53.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	10	22	47
CNEL:	5	11	23	50

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Merit  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 421 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-3.16	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-20.40	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-24.35	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.2	55.1	53.4	47.3	55.9	56.6
Medium Trucks:	51.1	50.4	44.0	42.5	50.9	51.2
Heavy Trucks:	54.3	53.7	44.6	45.9	54.2	54.4
Vehicle Noise:	59.1	58.3	54.3	50.4	58.9	59.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	15	32	69
CNEL:	7	16	34	73



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Michelson Drive  
 Road Segment: Riparian to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,460 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.20	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.03	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.99	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.5	63.4	61.6	55.6	64.2	64.8
Medium Trucks:	58.4	57.8	51.4	49.9	58.3	58.6
Heavy Trucks:	59.8	59.2	50.1	51.4	59.7	59.9
Vehicle Noise:	66.5	65.6	62.3	57.8	66.3	66.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	164	354
CNEL:	38	82	176	379

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Michelson Drive  
 Road Segment: Almond Tree Lane to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,200 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	677 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.14	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-20.38	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-24.33	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.0	62.9	61.2	55.1	63.7	64.4
Medium Trucks:	58.0	57.3	51.0	49.4	57.9	58.1
Heavy Trucks:	59.3	58.7	49.7	50.9	59.3	59.4
Vehicle Noise:	66.0	65.1	61.8	57.3	65.8	66.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	43	92	198
CNEL:	21	46	98	212

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Michelson Drive  
 Road Segment: Von Karman Avenue to Obsidian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,452 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.01	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.4	61.6	55.6	64.2	64.8
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5
Heavy Trucks:	59.7	59.1	50.1	51.4	59.7	59.8
Vehicle Noise:	66.5	65.6	62.3	57.7	66.3	66.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	164	352
CNEL:	38	81	175	377

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Michelson Drive  
 Road Segment: Parkside to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,279 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.61	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.57	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.9	62.8	61.1	55.0	63.6	64.2	
Medium Trucks:	57.9	57.2	50.8	49.3	57.7	58.0	
Heavy Trucks:	59.2	58.6	49.6	50.8	59.2	59.3	
Vehicle Noise:	65.9	65.0	61.7	57.2	65.7	66.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	70	150	324
CNEL:	35	75	161	347

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Michelson Drive  
 Road Segment: Gillman to Seton/Sandburg Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,200 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	677 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.14	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-20.38	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-24.33	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.0	62.9	61.2	55.1	63.7	64.4
Medium Trucks:	58.0	57.3	51.0	49.4	57.9	58.1
Heavy Trucks:	59.3	58.7	49.7	50.9	59.3	59.4
Vehicle Noise:	66.0	65.1	61.8	57.3	65.8	66.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	43	92	198
CNEL:	21	46	98	212

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Michelson Drive  
 Road Segment: Carlson to Prince

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,460 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 75.0 feet Centerline Dist. to Observer: 75.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 70.413 Medium Trucks: 70.356 Heavy Trucks: 70.413																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.20	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	77.72	-17.03	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	82.99	-20.99	-2.33	-1.20	-5.25	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.2	62.1	60.4	54.3	62.9	63.5
Medium Trucks:	57.2	56.5	50.1	48.6	57.0	57.3
Heavy Trucks:	58.5	57.9	48.8	50.1	58.5	58.6
Vehicle Noise:	65.2	64.3	61.0	56.5	65.0	65.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	75	162	348
CNEL:	37	80	173	373

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Michelson Drive  
 Road Segment: MacArthur Boulevard to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,600 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,452 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.01	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.4	63.4	61.6	55.6	64.2	64.8	
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5	
Heavy Trucks:	59.7	59.1	50.1	51.4	59.7	59.8	
Vehicle Noise:	66.5	65.6	62.3	57.7	66.3	66.7	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	164	352
CNEL:	38	81	175	377

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Michelson Drive  
 Road Segment: Harvard Avenue to Parkside

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,500 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,279 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.61	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.57	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.9	62.8	61.1	55.0	63.6	64.2
Medium Trucks:	57.9	57.2	50.8	49.3	57.7	58.0
Heavy Trucks:	59.2	58.6	49.6	50.8	59.2	59.3
Vehicle Noise:	65.9	65.0	61.7	57.2	65.7	66.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	70	150	324
CNEL:	35	75	161	347



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Michelson Drive  
 Road Segment: Bixby to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,600 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 957 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph					
Near/Far Lane Distance: 48 feet					
	<b>Vehicle Mix</b>				
	VehicleType	Day	Evening	Night	Daily
		Autos: 77.5%	12.9%	9.6%	97.42%
		Medium Trucks: 84.8%	4.9%	10.3%	1.84%
		Heavy Trucks: 86.5%	2.7%	10.8%	0.74%
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000				
Centerline Dist. to Barrier: 62.5 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Centerline Dist. to Observer: 62.5 feet					
Barrier Distance to Observer: 0.0 feet					
Observer Height (Above Pad): 5.0 feet					
Pad Elevation: 0.0 feet					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade: 0.0%	Autos: 57.786				
Left View: -90.0 degrees	Medium Trucks: 57.717				
Right View: 90.0 degrees	Heavy Trucks: 57.787				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.63	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.82	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.6	61.6	59.8	53.8	62.4	63.0	
Medium Trucks:	56.6	55.9	49.6	48.0	56.5	56.7	
Heavy Trucks:	57.9	57.3	48.3	49.6	57.9	58.0	
Vehicle Noise:	64.6	63.7	60.5	55.9	64.5	64.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	57	124	267
CNEL:	29	62	133	286

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Michelson Drive  
 Road Segment: Jamboree Road to Carlson

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,460 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.20	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.03	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.99	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.8	64.7	62.9	56.9	65.5	66.1
Medium Trucks:	59.7	59.1	52.7	51.2	59.6	59.9
Heavy Trucks:	61.1	60.5	51.4	52.7	61.0	61.2
Vehicle Noise:	67.8	66.9	63.6	59.1	67.6	68.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	89	192	415
CNEL:	44	96	206	444

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Michelson Drive  
 Road Segment: Teller to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,700 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,708 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 47.329				
Road Grade: 0.0%	Medium Trucks: 47.244				
Left View: -90.0 degrees	Heavy Trucks: 47.329				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.88	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.35	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.31	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.4	63.6	57.6	66.2	66.8
Medium Trucks:	60.4	59.8	53.4	51.8	60.3	60.5
Heavy Trucks:	61.7	61.2	52.1	53.4	61.7	61.8
Vehicle Noise:	68.5	67.6	64.3	59.7	68.3	68.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	99	214	460
CNEL:	49	106	229	493

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Michelson Drive  
 Road Segment: Jordan East to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 6,200 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 512 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 30.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 30.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 29.547				
Road Grade: 0.0%	Medium Trucks: 29.411				
Left View: -90.0 degrees	Heavy Trucks: 29.547				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.35	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	77.72	-21.59	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	82.99	-25.55	3.32	-1.20	-5.77	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.2	61.5	55.4	64.0	64.6
Medium Trucks:	58.3	57.6	51.2	49.7	58.2	58.4
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7
Vehicle Noise:	66.3	65.4	62.1	57.6	66.1	66.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	36	77	165
CNEL:	18	38	82	177

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Michelson Drive  
 Road Segment: Culver Drive to Angell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,200 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	677 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	16 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	40.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	40.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 39.306				
Road Grade:	0.0%	Medium Trucks: 39.205				
Left View:	-90.0 degrees	Heavy Trucks: 39.307				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.14	1.46	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-20.38	1.48	-1.20	-5.08	0.000	0.000
Heavy Trucks:	82.99	-24.33	1.46	-1.20	-5.56	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.6	62.6	60.8	54.8	63.4	64.0
Medium Trucks:	57.6	56.9	50.6	49.0	57.5	57.7
Heavy Trucks:	58.9	58.3	49.3	50.6	58.9	59.0
Vehicle Noise:	65.6	64.8	61.5	56.9	65.5	65.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	43	93	199
CNEL:	21	46	99	213

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Modjeska (A Street)  
 Road Segment: Portola Springs to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,800 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 891 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 24 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 30.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 30.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 27.659				
Road Grade: 0.0%	Medium Trucks: 27.514				
Left View: -90.0 degrees	Heavy Trucks: 27.659				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.45	3.75	-1.20	-4.81	0.000	0.000
Medium Trucks:	79.45	-19.69	3.79	-1.20	-5.14	0.000	0.000
Heavy Trucks:	84.25	-23.65	3.75	-1.20	-5.77	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.7	59.7	68.3	68.9
Medium Trucks:	62.3	61.7	55.3	53.8	62.2	62.5
Heavy Trucks:	63.2	62.6	53.5	54.8	63.1	63.3
Vehicle Noise:	70.4	69.5	66.3	61.7	70.2	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	144	310
CNEL:	33	72	154	332

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Modjeska (A Street)  
 Road Segment: South of Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,000 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	165 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		37.138		
Left View:	-90.0 degrees	Medium Trucks:		37.030		
Right View:	90.0 degrees	Heavy Trucks:		37.139		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-9.78	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-27.01	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-30.97	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.3	58.3	56.5	50.4	59.1	59.7
Medium Trucks:	53.1	52.4	46.1	44.5	53.0	53.2
Heavy Trucks:	53.9	53.3	44.3	45.5	53.9	54.0
Vehicle Noise:	61.2	60.2	57.1	52.4	61.0	61.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	20	43	94
CNEL:	10	22	47	100

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Muirlands Boulevard  
 Road Segment: Bake Parkway to City Limits

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,007 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.92	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.16	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.12	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.2	61.5	55.4	64.0	64.6
Medium Trucks:	58.0	57.4	51.0	49.5	57.9	58.2
Heavy Trucks:	58.9	58.3	49.3	50.5	58.9	59.0
Vehicle Noise:	66.1	65.2	62.1	57.4	65.9	66.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	72	155	335
CNEL:	36	77	167	359



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Muirlands Boulevard  
 Road Segment: Alton Parkway to Sterling

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 941 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.46	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.41	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.0	62.9	61.2	55.1	63.7	64.3
Medium Trucks:	57.8	57.1	50.7	49.2	57.6	57.9
Heavy Trucks:	58.6	58.0	49.0	50.2	58.6	58.7
Vehicle Noise:	65.8	64.9	61.8	57.1	65.6	66.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	149	320
CNEL:	34	74	159	343

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Muirlands Boulevard  
 Road Segment: Wrigley to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 941 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.46	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.41	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.0	62.9	61.2	55.1	63.7	64.3
Medium Trucks:	57.8	57.1	50.7	49.2	57.6	57.9
Heavy Trucks:	58.6	58.0	49.0	50.2	58.6	58.7
Vehicle Noise:	65.8	64.9	61.8	57.1	65.6	66.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	149	320
CNEL:	34	74	159	343

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Newport Coast Drive  
 Road Segment: SR-73 NB Off-Ramp to Turtle Ridge

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,500 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,196 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.86	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.6	62.5	60.8	54.7	63.3	63.9
Medium Trucks:	57.6	56.9	50.5	49.0	57.5	57.7
Heavy Trucks:	58.9	58.3	49.3	50.5	58.9	59.0
Vehicle Noise:	65.6	64.7	61.4	56.9	65.4	65.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	144	310
CNEL:	33	71	154	332

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Newport Coast Drive  
 Road Segment: Turtle Crest to Bonita Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 974 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.79	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.75	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.7	61.6	59.9	53.8	62.4	63.1	
Medium Trucks:	56.7	56.0	49.6	48.1	56.6	56.8	
Heavy Trucks:	58.0	57.4	48.4	49.6	58.0	58.1	
Vehicle Noise:	64.7	63.8	60.5	56.0	64.5	65.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	125	270
CNEL:	29	62	134	289

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Nightmist  
 Road Segment: Sand Canyon Avenue to Tulip (Road C)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,000 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	743 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		57.786		
Left View:	-90.0 degrees	Medium Trucks:		57.717		
Right View:	90.0 degrees	Heavy Trucks:		57.787		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-1.48	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-18.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-22.68	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.0	57.0	55.2	49.1	57.8	58.4
Medium Trucks:	52.5	51.8	45.5	43.9	52.4	52.6
Heavy Trucks:	55.0	54.4	45.4	46.6	55.0	55.1
Vehicle Noise:	60.5	59.7	56.0	51.8	60.4	60.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	31	66	142
CNEL:	15	33	70	152

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Northwood  
 Road Segment: Yale Avenue to Savannah

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 371 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.16	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-22.40	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-26.36	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	59.8	58.7	56.9	50.9	59.5	60.1	
Medium Trucks:	54.0	53.3	47.0	45.4	53.9	54.1	
Heavy Trucks:	55.8	55.3	46.2	47.5	55.8	56.0	
Vehicle Noise:	62.0	61.1	57.7	53.3	61.8	62.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	23	50	107
CNEL:	11	25	53	114

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Northwood  
 Road Segment: Goldrush to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,000 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	248 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-6.92	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-24.16	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-28.12	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.0	56.9	55.2	49.1	57.8	58.4
Medium Trucks:	52.2	51.6	45.2	43.7	52.1	52.4
Heavy Trucks:	54.1	53.5	44.5	45.7	54.1	54.2
Vehicle Noise:	60.2	59.4	55.9	51.5	60.1	60.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	18	38	82
CNEL:	9	19	40	87

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Oak Canyon Drive  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 6,000 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 495 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 37.138				
Road Grade: 0.0%	Medium Trucks: 37.030				
Left View: -90.0 degrees	Heavy Trucks: 37.139				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-5.00	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-22.24	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-26.20	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.1	63.0	61.3	55.2	63.8	64.4	
Medium Trucks:	57.9	57.2	50.8	49.3	57.7	58.0	
Heavy Trucks:	58.7	58.1	49.1	50.3	58.7	58.8	
Vehicle Noise:	65.9	65.0	61.9	57.2	65.7	66.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	42	90	195
CNEL:	21	45	97	209



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Pacifica  
 Road Segment: Gateway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,100 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	668 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.38	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.1	60.0	58.2	52.2	60.8	61.4
Medium Trucks:	55.0	54.4	48.0	46.5	54.9	55.2
Heavy Trucks:	56.4	55.8	46.7	48.0	56.3	56.5
Vehicle Noise:	63.1	62.2	58.9	54.4	62.9	63.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	45	97	210
CNEL:	22	48	104	225

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Pacifica  
 Road Segment: Alton Parkway to Gateway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	5,700 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	470 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.72	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.91	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.5	58.5	56.7	50.7	59.3	59.9
Medium Trucks:	53.5	52.8	46.5	44.9	53.4	53.6
Heavy Trucks:	54.8	54.3	45.2	46.5	54.8	54.9
Vehicle Noise:	61.6	60.7	57.4	52.8	61.4	61.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	36	77	166
CNEL:	18	38	83	178

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Project Name: Irvine GP  
 Road Name: Pacifica Job Number: 15937  
 Road Segment: Irvine Center Drive to Fortune Drive (Spectrum Center Drive)

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 454 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.87	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-22.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-26.07	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.4	58.3	56.6	50.5	59.1	59.7
Medium Trucks:	53.4	52.7	46.3	44.8	53.2	53.5
Heavy Trucks:	54.7	54.1	45.1	46.3	54.7	54.8
Vehicle Noise:	61.4	60.5	57.2	52.7	61.2	61.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	16	35	75	162
CNEL:	17	37	81	174

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Pacifica  
 Road Segment: Meridian to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,400 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	198 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		57.786		
Left View:	-90.0 degrees	Medium Trucks:		57.717		
Right View:	90.0 degrees	Heavy Trucks:		57.787		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-8.47	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-25.71	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-29.67	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.8	54.7	53.0	46.9	55.5	56.1
Medium Trucks:	49.8	49.1	42.7	41.2	49.6	49.9
Heavy Trucks:	51.1	50.5	41.5	42.7	51.1	51.2
Vehicle Noise:	57.8	56.9	53.6	49.1	57.6	58.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	20	43	93
CNEL:	10	22	46	100

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Park Place  
 Road Segment: Christamon South to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 297 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-5.46	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-22.70	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-26.66	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	54.0	53.0	51.2	45.2	53.8	54.4	
Medium Trucks:	48.5	47.9	41.5	40.0	48.4	48.7	
Heavy Trucks:	51.0	50.4	41.4	42.6	51.0	51.1	
Vehicle Noise:	56.5	55.7	52.0	47.9	56.4	56.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	36	77
CNEL:	8	18	38	82

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Project Name: Irvine GP  
 Road Name: Portola Parkway Job Number: 15937  
 Road Segment: Bee Canyon Access Road to Sand Canyon Avenue

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,477 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos:	77.5%	12.9%	9.6%	97.42%
	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
	<b>Noise Source Elevations (in feet)</b>				
	Autos:	2.000			
	Medium Trucks:	4.000			
	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos:	57.786			
	Medium Trucks:	57.717			
	Heavy Trucks:	57.787			

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.13	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.37	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.32	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.3	65.6	59.5	68.1	68.7	
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9	
Heavy Trucks:	61.8	61.2	52.2	53.5	61.8	61.9	
Vehicle Noise:	70.0	69.1	66.1	61.2	69.8	70.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	281	604
CNEL:	65	140	302	650

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Portola Parkway  
 Road Segment: Jeffrey Road to Bee Canyon Access Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,900 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,477 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.13	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.37	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.32	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	61.8	61.2	52.2	53.5	61.8	61.9
Vehicle Noise:	70.0	69.1	66.1	61.2	69.8	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	281	604
CNEL:	65	140	302	650

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Portola Parkway  
 Road Segment: Arrowhead to Ridge Valley Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,300 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,262 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.01	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.7	64.9	58.8	67.5	68.1
Medium Trucks:	61.1	60.4	54.1	52.5	61.0	61.2
Heavy Trucks:	61.1	60.6	51.5	52.8	61.1	61.3
Vehicle Noise:	69.3	68.4	65.4	60.5	69.1	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	117	253	544
CNEL:	59	126	272	586



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Portola Parkway  
 Road Segment: Sand Canyon Avenue to Arrowhead

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,300 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,262 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.01	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.7	66.7	64.9	58.8	67.5	68.1	
Medium Trucks:	61.1	60.4	54.1	52.5	61.0	61.2	
Heavy Trucks:	61.1	60.6	51.5	52.8	61.1	61.3	
Vehicle Noise:	69.3	68.4	65.4	60.5	69.1	69.6	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	117	253	544
CNEL:	59	126	272	586

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Portola Parkway  
 Road Segment: Portola Springs to SR-241 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 495 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-5.88	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-23.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-27.07	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.7	62.6	60.8	54.8	63.4	64.0	
Medium Trucks:	57.1	56.4	50.0	48.5	56.9	57.2	
Heavy Trucks:	57.1	56.5	47.5	48.7	57.1	57.2	
Vehicle Noise:	65.2	64.3	61.4	56.5	65.0	65.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	135	292
CNEL:	31	68	146	314

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Portola Parkway  
 Road Segment: Gatepark to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,700 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,873 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.10	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.34	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.29	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	65.0	58.9	67.5	68.1
Medium Trucks:	61.2	60.5	54.1	52.6	61.1	61.3
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	69.4	68.4	65.5	60.6	69.2	69.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	343	739
CNEL:	79	171	369	795

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Portola Parkway  
 Road Segment: ETC-6 (SR-261) NB Off-Ramp to Gatepark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,873 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.10	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.34	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.29	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	65.0	58.9	67.5	68.1
Medium Trucks:	61.2	60.5	54.1	52.6	61.1	61.3
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	69.4	68.4	65.5	60.6	69.2	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	343	739
CNEL:	79	171	369	795

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Portola Parkway  
 Road Segment: SR-261 SB Off-Ramp to SR-261 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,700 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,873 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.10	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.34	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.29	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	65.0	58.9	67.5	68.1
Medium Trucks:	61.2	60.5	54.1	52.6	61.1	61.3
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	69.4	68.4	65.5	60.6	69.2	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	343	739
CNEL:	79	171	369	795

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Portola Parkway  
 Road Segment: Jamboree Road to Bellevue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,873 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.10	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.34	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.29	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	65.0	58.9	67.5	68.1
Medium Trucks:	61.2	60.5	54.1	52.6	61.1	61.3
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	69.4	68.4	65.5	60.6	69.2	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	343	739
CNEL:	79	171	369	795

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Portola Parkway  
 Road Segment: Bellevue to ETC-6 (SR-261) SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,873 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.10	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.34	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.29	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	66.7	65.0	58.9	67.5	68.1	
Medium Trucks:	61.2	60.5	54.1	52.6	61.1	61.3	
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3	
Vehicle Noise:	69.4	68.4	65.5	60.6	69.2	69.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	343	739
CNEL:	79	171	369	795

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Portola Parkway  
 Road Segment: Yale Avenue to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,469 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
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FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-18.39	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-22.35	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.7	65.7	63.9	57.8	66.5	67.1	
Medium Trucks:	60.1	59.4	53.1	51.5	60.0	60.2	
Heavy Trucks:	60.2	59.6	50.5	51.8	60.1	60.3	
Vehicle Noise:	68.3	67.4	64.4	59.6	68.1	68.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	135	292	628
CNEL:	68	146	314	676



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Portola Parkway  
 Road Segment: Culver Drive to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,469 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-18.39	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-22.35	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.8	66.5	67.1
Medium Trucks:	60.1	59.4	53.1	51.5	60.0	60.2
Heavy Trucks:	60.2	59.6	50.5	51.8	60.1	60.3
Vehicle Noise:	68.3	67.4	64.4	59.6	68.1	68.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	135	292	628
CNEL:	68	146	314	676

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Portola Parkway  
 Road Segment: Silverado to Portola Springs

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 627 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-4.85	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-22.09	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-26.04	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.7	63.6	61.9	55.8	64.4	65.0
Medium Trucks:	58.1	57.4	51.0	49.5	58.0	58.2
Heavy Trucks:	58.1	57.5	48.5	49.7	58.1	58.2
Vehicle Noise:	66.3	65.3	62.4	57.5	66.1	66.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	158	341
CNEL:	37	79	170	367

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Pusan  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 124 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-8.47	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-25.71	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-29.67	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	50.9	49.8	48.1	42.0	50.6	51.2
Medium Trucks:	45.7	45.1	38.7	37.2	45.6	45.9
Heavy Trucks:	48.9	48.4	39.3	40.6	48.9	49.0
Vehicle Noise:	53.8	52.9	49.0	45.1	53.6	54.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	3	7	14	30
CNEL:	3	7	15	32

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Quail Hill Parkway  
 Road Segment: Shady Canyon Drive to Passage

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,254 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.97	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.21	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.16	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.2	64.2	62.4	56.4	65.0	65.6	
Medium Trucks:	59.0	58.3	52.0	50.4	58.9	59.1	
Heavy Trucks:	59.8	59.3	50.2	51.5	59.8	60.0	
Vehicle Noise:	67.1	66.2	63.0	58.3	66.9	67.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	180	388
CNEL:	42	90	193	416

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Quail Hill Parkway  
 Road Segment: East Knollcrest to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 701 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.73	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.69	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.7	61.7	59.9	53.8	62.5	63.1	
Medium Trucks:	56.5	55.8	49.4	47.9	56.4	56.6	
Heavy Trucks:	57.3	56.7	47.7	48.9	57.3	57.4	
Vehicle Noise:	64.6	63.7	60.5	55.8	64.4	64.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	57	122	263
CNEL:	28	61	131	282

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Project Name: Irvine GP  
 Road Name: Quassar Drive (Spectrum) Job Number: 15937  
 Road Segment: Irvine Center Drive to Spectrum Center Drive (Fortune)

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 149 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 16 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 39.306 Medium Trucks: 39.205 Heavy Trucks: 39.307																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-7.68	1.46	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-24.92	1.48	-1.20	-5.08	0.000	0.000
Heavy Trucks:	77.97	-28.88	1.46	-1.20	-5.56	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	51.3	50.3	48.5	42.4	51.1	51.7
Medium Trucks:	46.2	45.5	39.1	37.6	46.0	46.3
Heavy Trucks:	49.4	48.8	39.7	41.0	49.3	49.5
Vehicle Noise:	54.2	53.4	49.5	45.5	54.0	54.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	3	7	16	35
CNEL:	4	8	17	37

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Red Hill Avenue  
 Road Segment: MacArthur Boulevard to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 38,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,152 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.58	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.66	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.62	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.9	67.8	66.1	60.0	68.6	69.2	
Medium Trucks:	62.4	61.8	55.4	53.9	62.3	62.6	
Heavy Trucks:	62.9	62.3	53.2	54.5	62.8	63.0	
Vehicle Noise:	70.6	69.7	66.6	61.8	70.4	70.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	192	413	890
CNEL:	96	206	444	957

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Red Hill Avenue  
 Road Segment: I-405 Over Crossing to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,700 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,625 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.30	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.54	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.49	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.7	66.6	64.8	58.8	67.4	68.0	
Medium Trucks:	61.2	60.6	54.2	52.6	61.1	61.3	
Heavy Trucks:	61.6	61.1	52.0	53.3	61.6	61.7	
Vehicle Noise:	69.4	68.4	65.4	60.6	69.2	69.6	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	255	549
CNEL:	59	127	274	590



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Red Hill Avenue  
 Road Segment: Alton Parkway to Deere Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,310 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.23	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.01	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.97	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.5	64.7	58.6	67.3	67.9
Medium Trucks:	61.1	60.4	54.1	52.5	61.0	61.2
Heavy Trucks:	61.5	60.9	51.9	53.1	61.5	61.6
Vehicle Noise:	69.2	68.3	65.3	60.5	69.0	69.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	72	156	336	724
CNEL:	78	168	361	778

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Red Hill Avenue  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,211 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.04	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.20	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.16	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.3	64.5	58.5	67.1	67.7
Medium Trucks:	60.9	60.2	53.9	52.3	60.8	61.0
Heavy Trucks:	61.3	60.7	51.7	53.0	61.3	61.4
Vehicle Noise:	69.0	68.1	65.1	60.3	68.8	69.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	151	326	703
CNEL:	76	163	351	755

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Red Hill Avenue  
 Road Segment: Deere Avenue to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,203 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.02	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.22	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.17	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.3	66.3	64.5	58.4	67.1	67.7	
Medium Trucks:	60.9	60.2	53.9	52.3	60.8	61.0	
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4	
Vehicle Noise:	69.0	68.1	65.1	60.3	68.8	69.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	151	326	701
CNEL:	75	162	350	753

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Red Hill Avenue  
 Road Segment: Skypark East to MacArthur Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,700 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,378 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.02	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.26	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.21	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.2	65.4	59.4	68.0	68.6
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	69.9	69.0	66.0	61.2	69.7	70.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	124	268	576
CNEL:	62	133	287	619

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Red Hill Avenue  
 Road Segment: Main Street to Skypark East

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,600 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,205 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 47.329				
Road Grade: 0.0%	Medium Trucks: 47.244				
Left View: -90.0 degrees	Heavy Trucks: 47.329				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.60	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.84	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.79	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.6	64.8	58.8	67.4	68.0
Medium Trucks:	61.2	60.6	54.2	52.6	61.1	61.3
Heavy Trucks:	61.6	61.1	52.0	53.3	61.6	61.7
Vehicle Noise:	69.4	68.4	65.4	60.6	69.2	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	245	527
CNEL:	57	122	263	566

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Research Drive  
 Road Segment: Hubble to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,700 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	800 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.92	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.16	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.11	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.3	62.2	60.5	54.4	63.0	63.6
Medium Trucks:	57.1	56.4	50.0	48.5	56.9	57.2
Heavy Trucks:	57.9	57.3	48.3	49.5	57.9	58.0
Vehicle Noise:	65.1	64.2	61.1	56.4	64.9	65.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	62	133	287
CNEL:	31	66	143	308

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Research Drive  
 Road Segment: Scientific to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,100 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 833 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.74	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.94	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.5	62.4	60.6	54.6	63.2	63.8
Medium Trucks:	57.2	56.6	50.2	48.7	57.1	57.3
Heavy Trucks:	58.1	57.5	48.4	49.7	58.1	58.2
Vehicle Noise:	65.3	64.4	61.3	56.6	65.1	65.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	137	295
CNEL:	32	68	147	317

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Research Drive  
 Road Segment: Bake Parkway to Muller

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 957 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.34	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.1	63.0	61.2	55.2	63.8	64.4	
Medium Trucks:	57.8	57.2	50.8	49.3	57.7	57.9	
Heavy Trucks:	58.7	58.1	49.0	50.3	58.7	58.8	
Vehicle Noise:	65.9	65.0	61.9	57.2	65.7	66.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	70	150	324
CNEL:	35	75	161	347



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Research Drive  
 Road Segment: Irvine Center Drive to Bunsen

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,600 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	710 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.44	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.68	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.64	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.8	61.7	59.9	53.9	62.5	63.1
Medium Trucks:	56.5	55.9	49.5	48.0	56.4	56.6
Heavy Trucks:	57.4	56.8	47.7	49.0	57.4	57.5
Vehicle Noise:	64.6	63.7	60.6	55.9	64.4	64.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	57	123	265
CNEL:	28	61	132	284

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing	Project Name: Irvine GP
Road Name: Ridge Valley (O Street)	Job Number: 15937
Road Segment: Irvine Boulevard to Trabuco Road (Great Park Boulevard)	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,900 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 817 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 45 mph																					
Near/Far Lane Distance: 48 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 62.5 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 62.5 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 57.786																				
Left View: -90.0 degrees	Medium Trucks: 57.717																				
Right View: 90.0 degrees	Heavy Trucks: 57.787																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.83	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.02	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.4	62.3	60.6	54.5	63.1	63.7
Medium Trucks:	57.1	56.5	50.1	48.6	57.0	57.3
Heavy Trucks:	58.0	57.4	48.4	49.6	58.0	58.1
Vehicle Noise:	65.2	64.3	61.2	56.5	65.0	65.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	135	291
CNEL:	31	67	145	312

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Ridge Valley (O Street)  
 Road Segment: Portola Parkway to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	10,800 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	891 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.45	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.69	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.65	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.8	62.7	60.9	54.9	63.5	64.1
Medium Trucks:	57.5	56.8	50.5	48.9	57.4	57.6
Heavy Trucks:	58.4	57.8	48.7	50.0	58.3	58.5
Vehicle Noise:	65.6	64.7	61.5	56.9	65.4	65.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	143	309
CNEL:	33	71	154	331

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing	Project Name: Irvine GP
Road Name: Ridge Valley (O Street)	Job Number: 15937
Road Segment: Trabuco Road (Great Park Boulevard) to Marine Way	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,600 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 875 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 45 mph																					
Near/Far Lane Distance: 48 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 62.5 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 62.5 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 57.786																				
Left View: -90.0 degrees	Medium Trucks: 57.717																				
Right View: 90.0 degrees	Heavy Trucks: 57.787																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.73	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.7	62.6	60.9	54.8	63.4	64.0
Medium Trucks:	57.4	56.8	50.4	48.9	57.3	57.6
Heavy Trucks:	58.3	57.7	48.7	49.9	58.3	58.4
Vehicle Noise:	65.5	64.6	61.5	56.8	65.3	65.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	66	142	305
CNEL:	33	70	152	327

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Ridge Valley (O Street)  
 Road Segment: Ranchland to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 74 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-13.24	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-30.48	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-34.44	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.9	54.8	53.0	47.0	55.6	56.2
Medium Trucks:	49.6	48.9	42.6	41.0	49.5	49.7
Heavy Trucks:	50.4	49.9	40.8	42.1	50.4	50.6
Vehicle Noise:	57.7	56.8	53.6	49.0	57.5	58.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	12	26	55
CNEL:	6	13	27	59

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Ridgeline Drive  
 Road Segment: Concordia East to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,600 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,040 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 35 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 40.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 40.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 32.140				
Road Grade: 0.0%		Medium Trucks: 32.016				
Left View: -90.0 degrees		Heavy Trucks: 32.141				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-0.69	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-17.93	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	81.57	-21.89	2.78	-1.20	-5.56	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.1	62.4	56.3	64.9	65.5
Medium Trucks:	59.4	58.7	52.4	50.8	59.3	59.5
Heavy Trucks:	61.3	60.7	51.6	52.9	61.2	61.4
Vehicle Noise:	67.4	66.5	63.1	58.7	67.2	67.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	56	121	262
CNEL:	28	60	130	279

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Ridgeline Drive  
 Road Segment: Turtle Rock Drive to San Simeon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,600 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,040 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 35 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 40.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 40.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 32.140				
Road Grade: 0.0%		Medium Trucks: 32.016				
Left View: -90.0 degrees		Heavy Trucks: 32.141				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-0.69	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-17.93	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	81.57	-21.89	2.78	-1.20	-5.56	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.1	62.4	56.3	64.9	65.5
Medium Trucks:	59.4	58.7	52.4	50.8	59.3	59.5
Heavy Trucks:	61.3	60.7	51.6	52.9	61.2	61.4
Vehicle Noise:	67.4	66.5	63.1	58.7	67.2	67.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	56	121	262
CNEL:	28	60	130	279

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Rockfield Avenue  
 Road Segment: Whatney to McLaren

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 990 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.99	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.19	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.2	61.4	55.3	64.0	64.6
Medium Trucks:	58.0	57.3	50.9	49.4	57.9	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.1	65.1	62.0	57.3	65.9	66.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	154	331
CNEL:	36	77	165	355



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Rockfield Avenue  
 Road Segment: Bake Parkway to Whatney

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	5,000 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	413 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-5.80	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-23.04	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-26.99	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.4	59.4	57.6	51.5	60.2	60.8
Medium Trucks:	54.2	53.5	47.1	45.6	54.1	54.3
Heavy Trucks:	55.0	54.4	45.4	46.6	55.0	55.1
Vehicle Noise:	62.3	61.3	58.2	53.5	62.1	62.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	40	86	185
CNEL:	20	43	92	198

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Rockfield Avenue  
 Road Segment: Thomas to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 413 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-5.80	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-23.04	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-26.99	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.4	59.4	57.6	51.5	60.2	60.8	
Medium Trucks:	54.2	53.5	47.1	45.6	54.1	54.3	
Heavy Trucks:	55.0	54.4	45.4	46.6	55.0	55.1	
Vehicle Noise:	62.3	61.3	58.2	53.5	62.1	62.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	40	86	185
CNEL:	20	43	92	198

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Roosevelt  
 Road Segment: Jeffrey Road to Vision

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,031 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.31	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.54	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.50	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.0	61.9	60.1	54.1	62.7	63.3	
Medium Trucks:	56.9	56.3	49.9	48.4	56.8	57.0	
Heavy Trucks:	58.2	57.7	48.6	49.9	58.2	58.4	
Vehicle Noise:	65.0	64.1	60.8	56.2	64.8	65.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	60	130	281
CNEL:	30	65	139	300

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Roosevelt  
 Road Segment: Yale Avenue to Van Buren

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,500 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	701 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	30.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	30.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 29.547				
Road Grade:	0.0%	Medium Trucks: 29.411				
Left View:	-90.0 degrees	Heavy Trucks: 29.547				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.98	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	77.72	-20.22	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	82.99	-24.17	3.32	-1.20	-5.77	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.6	62.8	56.8	65.4	66.0
Medium Trucks:	59.6	59.0	52.6	51.1	59.5	59.8
Heavy Trucks:	60.9	60.4	51.3	52.6	60.9	61.1
Vehicle Noise:	67.7	66.8	63.5	58.9	67.5	67.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	44	95	204
CNEL:	22	47	101	218

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Roosevelt  
 Road Segment: Vision to Bay Tree

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 866 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.06	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.30	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.26	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.2	61.1	59.4	53.3	61.9	62.5
Medium Trucks:	56.2	55.5	49.1	47.6	56.1	56.3
Heavy Trucks:	57.5	56.9	47.9	49.1	57.5	57.6
Vehicle Noise:	64.2	63.3	60.0	55.5	64.0	64.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	116	250
CNEL:	27	58	124	267

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Roosevelt  
 Road Segment: Nimitz to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,031 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.31	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.54	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.50	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.0	61.9	60.1	54.1	62.7	63.3
Medium Trucks:	56.9	56.3	49.9	48.4	56.8	57.0
Heavy Trucks:	58.2	57.7	48.6	49.9	58.2	58.4
Vehicle Noise:	65.0	64.1	60.8	56.2	64.8	65.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	60	130	281
CNEL:	30	65	139	300

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Roosevelt  
 Road Segment: Tulip (Road C) to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 726 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.83	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.02	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.4	60.4	58.6	52.6	61.2	61.8	
Medium Trucks:	55.4	54.7	48.4	46.8	55.3	55.5	
Heavy Trucks:	56.7	56.1	47.1	48.4	56.7	56.8	
Vehicle Noise:	63.4	62.5	59.3	54.7	63.3	63.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	48	103	222
CNEL:	24	51	110	238

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Royal Oak  
 Road Segment: Alton Parkway to Eaglecreek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,600 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	380 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	30.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	30.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 29.547				
Road Grade:	0.0%	Medium Trucks: 29.411				
Left View:	-90.0 degrees	Heavy Trucks: 29.547				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.07	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	75.75	-22.31	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	81.57	-26.26	3.32	-1.20	-5.77	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.4	60.3	58.5	52.5	61.1	61.7
Medium Trucks:	55.6	54.9	48.6	47.0	55.5	55.7
Heavy Trucks:	57.4	56.8	47.8	49.1	57.4	57.5
Vehicle Noise:	63.6	62.7	59.3	54.9	63.4	63.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	23	51	109
CNEL:	12	25	54	116



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: Oak Canyon Drive to Burt Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,600 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,020 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.39	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.85	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.80	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.9	59.8	68.4	69.0
Medium Trucks:	62.3	61.6	55.2	53.7	62.1	62.4
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.4	69.5	66.4	61.6	70.2	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	186	402	865
CNEL:	93	200	432	930

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: Irvine Center Drive to Oak Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,954 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
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Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.29	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.94	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.90	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	68.9
Medium Trucks:	62.2	61.5	55.1	53.6	62.0	62.3
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	70.3	69.4	66.3	61.5	70.1	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	184	396	853
CNEL:	92	197	425	916

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-405 NB Off-Ramp to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 36,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,020 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.39	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.85	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.80	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.6	70.6	68.8	62.8	71.4	72.0	
Medium Trucks:	65.2	64.5	58.2	56.6	65.1	65.3	
Heavy Trucks:	65.6	65.0	56.0	57.3	65.6	65.7	
Vehicle Noise:	73.3	72.4	69.4	64.6	73.1	73.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	210	451	973
CNEL:	104	225	485	1,045

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: Burt Road to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,094 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.50	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.74	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.70	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.1	66.4	60.3	69.0	69.6
Medium Trucks:	62.8	62.1	55.7	54.2	62.7	62.9
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3
Vehicle Noise:	70.9	70.0	66.9	62.2	70.7	71.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	192	414	892
CNEL:	96	206	445	958

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: Marine to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 38,800 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,201 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 56.593				
Road Grade: 0.0%	Medium Trucks: 56.522				
Left View: -90.0 degrees	Heavy Trucks: 56.593				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.64	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-14.59	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-18.55	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.7	67.9	61.9	70.5	71.1
Medium Trucks:	64.3	63.6	57.3	55.7	64.2	64.4
Heavy Trucks:	64.7	64.1	55.1	56.3	64.7	64.8
Vehicle Noise:	72.4	71.5	68.5	63.7	72.2	72.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	141	304	654	1,409
CNEL:	151	326	703	1,514

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: Trabuco Road to Towngate

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,599 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.74	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.50	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.46	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.0	67.0	65.2	59.2	67.8	68.4	
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7	
Heavy Trucks:	62.0	61.4	52.4	53.7	62.0	62.1	
Vehicle Noise:	69.7	68.8	65.8	61.0	69.5	70.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	169	363	783
CNEL:	84	181	390	841

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: Barranca Parkway to Waterworks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,153 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.92	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.32	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.27	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.2	66.2	64.4	58.3	67.0	67.6	
Medium Trucks:	60.8	60.1	53.8	52.2	60.7	60.9	
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3	
Vehicle Noise:	68.9	68.0	65.0	60.2	68.7	69.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	149	321	691
CNEL:	74	160	344	742

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-5 SB Off-Ramp to Marine

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 38,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,201 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.64	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-14.59	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-18.55	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.7	67.9	61.9	70.5	71.1
Medium Trucks:	64.3	63.6	57.3	55.7	64.2	64.4
Heavy Trucks:	64.7	64.1	55.1	56.3	64.7	64.8
Vehicle Noise:	72.4	71.5	68.5	63.7	72.2	72.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	141	304	654	1,409
CNEL:	151	326	703	1,514



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: Hospital to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,211 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.04	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.20	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.16	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.3	64.5	58.5	67.1	67.7
Medium Trucks:	60.9	60.2	53.9	52.3	60.8	61.0
Heavy Trucks:	61.3	60.7	51.7	53.0	61.3	61.4
Vehicle Noise:	69.0	68.1	65.1	60.3	68.8	69.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	151	326	703
CNEL:	76	163	351	755

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: Nightmist to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,696 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.27	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-13.97	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-17.93	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.4	70.3	68.5	62.5	71.1	71.7
Medium Trucks:	64.9	64.3	57.9	56.4	64.8	65.0
Heavy Trucks:	65.3	64.8	55.7	57.0	65.3	65.5
Vehicle Noise:	73.1	72.1	69.1	64.3	72.9	73.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	155	334	720	1,551
CNEL:	167	359	774	1,667

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,261 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.13	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.10	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.06	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	69.3	67.6	61.5	70.1	70.7
Medium Trucks:	64.0	63.3	56.9	55.4	63.8	64.1
Heavy Trucks:	64.4	63.8	54.7	56.0	64.4	64.5
Vehicle Noise:	72.1	71.2	68.1	63.3	71.9	72.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	173	372	802
CNEL:	86	186	400	862

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-5 NB Off-Ramp to Nightmist

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 43,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,614 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.17	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-14.07	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-18.02	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.3	70.2	68.4	62.4	71.0	71.6
Medium Trucks:	64.8	64.2	57.8	56.3	64.7	64.9
Heavy Trucks:	65.2	64.7	55.6	56.9	65.2	65.4
Vehicle Noise:	73.0	72.0	69.0	64.2	72.8	73.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	153	329	709	1,528
CNEL:	164	354	762	1,642

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: Towngate to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,908 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,220 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.05	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.18	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.14	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.4	66.3	64.5	58.5	67.1	67.7	
Medium Trucks:	60.9	60.3	53.9	52.3	60.8	61.0	
Heavy Trucks:	61.3	60.8	51.7	53.0	61.3	61.5	
Vehicle Noise:	69.1	68.1	65.1	60.3	68.9	69.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	152	327	705
CNEL:	76	163	352	757

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: Waterworks to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,153 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.92	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.32	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.27	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.2	66.2	64.4	58.3	67.0	67.6	
Medium Trucks:	60.8	60.1	53.8	52.2	60.7	60.9	
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3	
Vehicle Noise:	68.9	68.0	65.0	60.2	68.7	69.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	149	321	691
CNEL:	74	160	344	742

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: Irvine Boulevard to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,600 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,122 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.91	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.15	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.10	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	65.0	63.2	57.2	65.8	66.4
Medium Trucks:	59.6	58.9	52.6	51.0	59.5	59.7
Heavy Trucks:	60.0	59.4	50.4	51.7	60.0	60.1
Vehicle Noise:	67.7	66.8	63.8	59.0	67.5	68.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	92	199	429
CNEL:	46	99	214	461

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: Roosevelt to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 37,700 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,110 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.52	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-14.72	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-18.67	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	69.5	67.8	61.7	70.4	71.0
Medium Trucks:	64.2	63.5	57.1	55.6	64.1	64.3
Heavy Trucks:	64.6	64.0	55.0	56.2	64.6	64.7
Vehicle Noise:	72.3	71.4	68.3	63.6	72.1	72.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	138	298	642	1,383
CNEL:	149	320	689	1,485



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: Alton Parkway to Hospital

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,800 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,211 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.04	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.20	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.16	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	66.7	64.9	58.9	67.5	68.1	
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4	
Heavy Trucks:	61.7	61.1	52.1	53.4	61.7	61.8	
Vehicle Noise:	69.4	68.5	65.5	60.7	69.3	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	154	331	713
CNEL:	77	165	356	766

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Sand Canyon/Shady Canyon  
 Road Segment: Quail Hill Parkway to I-405 SB Ramps

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,700 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,790 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 60.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	47.329			
Road Grade: 0.0%	Medium Trucks:	47.244			
Left View: -90.0 degrees	Heavy Trucks:	47.329			
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.12	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.12	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.07	0.25	-1.20	-5.34	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.4	68.3	66.5	60.5	69.1	69.7	
Medium Trucks:	62.9	62.3	55.9	54.4	62.8	63.1	
Heavy Trucks:	63.4	62.8	53.7	55.0	63.3	63.5	
Vehicle Noise:	71.1	70.2	67.1	62.3	70.9	71.3	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	148	319	686
CNEL:	74	159	342	737

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Scientific Way  
 Road Segment: Irvine Center Drive to Wald

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 124 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-9.93	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-27.17	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-31.13	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.1	51.1	49.3	43.2	51.9	52.5
Medium Trucks:	46.3	45.7	39.3	37.8	46.2	46.5
Heavy Trucks:	48.2	47.6	38.6	39.8	48.2	48.3
Vehicle Noise:	54.3	53.5	50.0	45.6	54.2	54.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	12	26	55
CNEL:	6	13	27	59

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Shady Canyon Drive  
 Road Segment: Culver Drive/Bonita Canyon Drive to Cloverfield

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,100 vehicles	Autos:				15
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):				15
Peak Hour Volume:	668 vehicles	Heavy Trucks (3+ Axles):				15
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.16	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-21.40	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-25.35	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.6	63.8	57.8	66.4	67.0
Medium Trucks:	60.3	59.6	53.2	51.7	60.1	60.4
Heavy Trucks:	60.7	60.1	51.0	52.3	60.6	60.8
Vehicle Noise:	68.4	67.5	64.4	59.6	68.2	68.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	132	283
CNEL:	30	66	141	305

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Shady Canyon Drive  
 Road Segment: Bommer Canyon Road to Sunnyhill

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 578 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.79	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-22.03	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.99	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.1	64.1	62.3	56.2	64.9	65.5	
Medium Trucks:	58.7	58.0	51.7	50.1	58.6	58.8	
Heavy Trucks:	59.1	58.5	49.5	50.7	59.1	59.2	
Vehicle Noise:	66.8	65.9	62.9	58.1	66.6	67.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	297
CNEL:	32	69	148	320

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Skyhawk  
 Road Segment: Great Park Boulevard to Marine Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,200 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	182 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-6.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-24.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-28.00	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	49.7	48.6	46.8	40.8	49.4	50.0
Medium Trucks:	44.5	43.8	37.5	35.9	44.4	44.6
Heavy Trucks:	47.7	47.1	38.1	39.4	47.7	47.8
Vehicle Noise:	52.6	51.7	47.8	43.9	52.4	52.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	19	42
CNEL:	4	10	21	45

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Southwood  
 Road Segment: Yale Avenue to Colt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 248 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-6.92	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-24.16	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-28.12	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.0	56.9	55.2	49.1	57.8	58.4
Medium Trucks:	52.2	51.6	45.2	43.7	52.1	52.4
Heavy Trucks:	54.1	53.5	44.5	45.7	54.1	54.2
Vehicle Noise:	60.2	59.4	55.9	51.5	60.1	60.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	18	38	82
CNEL:	9	19	40	87

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Southwood  
 Road Segment: Challenger to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,600 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	215 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-7.55	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-24.78	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-28.74	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.4	56.3	54.6	48.5	57.1	57.7
Medium Trucks:	51.6	50.9	44.6	43.0	51.5	51.7
Heavy Trucks:	53.5	52.9	43.8	45.1	53.4	53.6
Vehicle Noise:	59.6	58.7	55.3	50.9	59.4	59.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	16	34	74
CNEL:	8	17	37	79



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Spectrum Center Drive (Fortune)  
 Road Segment: Pacifica to Quassar Drive (Spectrum )

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 866 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-18.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-22.01	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	58.7	57.6	55.9	49.8	58.4	59.0	
Medium Trucks:	53.2	52.5	46.2	44.6	53.1	53.3	
Heavy Trucks:	55.7	55.1	46.0	47.3	55.6	55.8	
Vehicle Noise:	61.2	60.3	56.7	52.5	61.0	61.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	16	34	73	158
CNEL:	17	36	78	168

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Spectrum Center Drive (Fortune)  
 Road Segment: Quassar Drive (Spectrum ) to Gatewayb

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 982 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.51	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.46	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	59.2	58.2	56.4	50.4	59.0	59.6	
Medium Trucks:	53.7	53.1	46.7	45.2	53.6	53.8	
Heavy Trucks:	56.2	55.6	46.6	47.8	56.2	56.3	
Vehicle Noise:	61.7	60.9	57.2	53.1	61.6	62.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	80	171
CNEL:	18	39	85	183

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Sunnyhill  
 Road Segment: Shady Canyon Drive to Turtle Rock Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	5,600 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	462 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-2.75	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-19.99	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-23.95	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.7	52.7	50.9	44.9	53.5	54.1
Medium Trucks:	48.6	47.9	41.5	40.0	48.4	48.7
Heavy Trucks:	51.8	51.2	42.2	43.4	51.8	51.9
Vehicle Noise:	56.6	55.8	51.9	48.0	56.5	56.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	36	78
CNEL:	8	18	39	83

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Technology Drive  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,163 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.53	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.49	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.9	63.9	62.1	56.0	64.7	65.3	
Medium Trucks:	58.7	58.0	51.6	50.1	58.6	58.8	
Heavy Trucks:	59.5	58.9	49.9	51.1	59.5	59.6	
Vehicle Noise:	66.8	65.8	62.7	58.0	66.6	67.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	171	369
CNEL:	40	85	184	396

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing	Project Name: Irvine GP
Road Name: Technology Drive	Job Number: 15937
Road Segment: Old Laguna Canyon Road to I-5/SR-133 Undercrossing	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,800 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 479 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 45 mph																					
Near/Far Lane Distance: 48 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 62.5 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 62.5 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 57.786																				
Left View: -90.0 degrees	Medium Trucks: 57.717																				
Right View: 90.0 degrees	Heavy Trucks: 57.787																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-5.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-22.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-26.35	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.1	60.0	58.2	52.2	60.8	61.4
Medium Trucks:	54.8	54.1	47.8	46.2	54.7	54.9
Heavy Trucks:	55.7	55.1	46.0	47.3	55.6	55.8
Vehicle Noise:	62.9	62.0	58.8	54.2	62.7	63.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	44	95	204
CNEL:	22	47	102	219

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Technology Drive  
 Road Segment: I-5/SR-133 to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 437 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-5.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-22.78	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-26.74	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.7	59.6	57.8	51.8	60.4	61.0
Medium Trucks:	54.4	53.8	47.4	45.9	54.3	54.5
Heavy Trucks:	55.3	54.7	45.6	46.9	55.3	55.4
Vehicle Noise:	62.5	61.6	58.5	53.8	62.3	62.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	41	89	192
CNEL:	21	44	96	206

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Technology Drive  
 Road Segment: Ada to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 140 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-10.48	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-27.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-31.68	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	55.7	54.7	52.9	46.8	55.5	56.1	
Medium Trucks:	49.5	48.8	42.5	40.9	49.4	49.6	
Heavy Trucks:	50.3	49.7	40.7	42.0	50.3	50.4	
Vehicle Noise:	57.6	56.7	53.5	48.8	57.4	57.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	42	90
CNEL:	10	21	45	97

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Toledo Way  
 Road Segment: Bake Parkway to City Limits

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 627 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.44	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-21.67	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-25.63	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.5	62.5	60.7	54.6	63.3	63.9	
Medium Trucks:	57.1	56.4	50.1	48.5	57.0	57.2	
Heavy Trucks:	57.5	56.9	47.9	49.1	57.5	57.6	
Vehicle Noise:	65.2	64.3	61.3	56.5	65.0	65.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	135	291
CNEL:	31	67	145	313



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Toledo Way  
 Road Segment: Goodyear to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 503 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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Autos:	77.5%	12.9%	9.6%	97.42%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.39	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.63	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.58	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.6	61.5	59.7	53.7	62.3	62.9	
Medium Trucks:	56.1	55.5	49.1	47.6	56.0	56.2	
Heavy Trucks:	56.5	56.0	46.9	48.2	56.5	56.7	
Vehicle Noise:	64.3	63.3	60.3	55.5	64.1	64.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	117	251
CNEL:	27	58	125	270

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Toledo Way  
 Road Segment: Alton Parkway to Parker

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 437 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-6.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-23.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-27.20	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.0	60.9	59.1	53.1	61.7	62.3
Medium Trucks:	55.5	54.9	48.5	46.9	55.4	55.6
Heavy Trucks:	55.9	55.4	46.3	47.6	55.9	56.0
Vehicle Noise:	63.7	62.7	59.7	54.9	63.5	63.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	49	106	229
CNEL:	25	53	114	246

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Trabuco Road  
 Road Segment: Keystone to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,100 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,081 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.61	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.85	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.81	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.5	61.8	55.7	64.3	64.9
Medium Trucks:	58.4	57.7	51.3	49.8	58.2	58.5
Heavy Trucks:	59.2	58.6	49.6	50.8	59.2	59.3
Vehicle Noise:	66.4	65.5	62.4	57.7	66.2	66.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	163	351
CNEL:	38	81	175	377

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Trabuco Road  
 Road Segment: Jeffrey Road to Keystone

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,081 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
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Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.61	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.85	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.81	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.5	61.8	55.7	64.3	64.9
Medium Trucks:	58.4	57.7	51.3	49.8	58.2	58.5
Heavy Trucks:	59.2	58.6	49.6	50.8	59.2	59.3
Vehicle Noise:	66.4	65.5	62.4	57.7	66.2	66.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	163	351
CNEL:	38	81	175	377

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Trabuco Road  
 Road Segment: Culver Drive to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 990 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.99	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.19	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.2	63.2	61.4	55.3	64.0	64.6	
Medium Trucks:	58.0	57.3	50.9	49.4	57.9	58.1	
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9	
Vehicle Noise:	66.1	65.1	62.0	57.3	65.9	66.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	154	331
CNEL:	36	77	165	355

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Trabuco Road  
 Road Segment: Monroe to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 990 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.99	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.19	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.2	61.4	55.3	64.0	64.6
Medium Trucks:	58.0	57.3	50.9	49.4	57.9	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.1	65.1	62.0	57.3	65.9	66.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	154	331
CNEL:	36	77	165	355

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Trabuco Road  
 Road Segment: I-5 NB Off-Ramp to Monroe

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	12,000 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	990 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.99	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.19	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.2	61.4	55.3	64.0	64.6
Medium Trucks:	58.0	57.3	50.9	49.4	57.9	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.1	65.1	62.0	57.3	65.9	66.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	154	331
CNEL:	36	77	165	355

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Trabuco Road  
 Road Segment: Yale Avenue to Remington

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,500 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 866 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.81	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.77	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.6	62.6	60.8	54.8	63.4	64.0
Medium Trucks:	57.4	56.7	50.4	48.8	57.3	57.5
Heavy Trucks:	58.2	57.7	48.6	49.9	58.2	58.3
Vehicle Noise:	65.5	64.6	61.4	56.7	65.3	65.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	141	303
CNEL:	32	70	151	325



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Trabuco Road  
 Road Segment: Remington to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 866 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
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Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.81	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.77	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.6	62.6	60.8	54.8	63.4	64.0
Medium Trucks:	57.4	56.7	50.4	48.8	57.3	57.5
Heavy Trucks:	58.2	57.7	48.6	49.9	58.2	58.3
Vehicle Noise:	65.5	64.6	61.4	56.7	65.3	65.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	141	303
CNEL:	32	70	151	325

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Turtle Ridge Drive  
 Road Segment: Federation Way to Bonita Canyon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	0 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-42.79	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-60.02	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-63.98	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	23.4	22.4	20.6	14.5	23.2	23.8
Medium Trucks:	17.2	16.5	10.2	8.6	17.1	17.3
Heavy Trucks:	18.0	17.4	8.4	9.7	18.0	18.1
Vehicle Noise:	25.3	24.4	21.2	16.5	25.1	25.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	1
CNEL:	0	0	0	1

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Turtle Rock Drive  
 Road Segment: Ridgeline to Willowleaf

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 578 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.34	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-21.57	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-25.53	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.8	63.7	61.9	55.9	64.5	65.1	
Medium Trucks:	58.5	57.9	51.5	49.9	58.4	58.6	
Heavy Trucks:	59.4	58.8	49.7	51.0	59.3	59.5	
Vehicle Noise:	66.6	65.7	62.5	57.9	66.4	66.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	100	216
CNEL:	23	50	108	232

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Turtle Rock Drive  
 Road Segment: Silkwood to Sunnyhill

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,200 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	594 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.21	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-21.45	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-25.41	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	63.8	62.1	56.0	64.6	65.2
Medium Trucks:	58.7	58.0	51.6	50.1	58.5	58.8
Heavy Trucks:	59.5	58.9	49.9	51.1	59.5	59.6
Vehicle Noise:	66.7	65.8	62.7	58.0	66.5	67.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	102	220
CNEL:	24	51	110	236

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Turtle Rock Drive  
 Road Segment: Canyon Park to Ridgeline

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,700 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	553 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.53	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-21.76	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-25.72	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.6	63.5	61.7	55.7	64.3	64.9	
Medium Trucks:	58.3	57.7	51.3	49.8	58.2	58.5	
Heavy Trucks:	59.2	58.6	49.5	50.8	59.1	59.3	
Vehicle Noise:	66.4	65.5	62.3	57.7	66.2	66.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	45	97	210
CNEL:	22	48	104	225

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Turtle Rock Drive  
 Road Segment: Sunnyhill to Southernwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 289 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-7.35	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-24.58	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-28.54	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.7	60.7	58.9	52.9	61.5	62.1	
Medium Trucks:	55.5	54.8	48.5	46.9	55.4	55.6	
Heavy Trucks:	56.3	55.8	46.7	48.0	56.3	56.5	
Vehicle Noise:	63.6	62.7	59.5	54.9	63.4	63.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	29	63	136
CNEL:	15	31	68	146

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Turtle Rock Drive  
 Road Segment: Campus Drive to Hillgate

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 553 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.76	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.72	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.7	60.6	58.9	52.8	61.4	62.0	
Medium Trucks:	55.4	54.8	48.4	46.9	55.3	55.6	
Heavy Trucks:	56.3	55.7	46.7	47.9	56.3	56.4	
Vehicle Noise:	63.5	62.6	59.5	54.8	63.3	63.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	48	104	225
CNEL:	24	52	112	241

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Turtle Rock Drive  
 Road Segment: Paseo Segovia to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 3,900 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 322 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 40.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 40.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 32.140				
Road Grade: 0.0%	Medium Trucks: 32.016				
Left View: -90.0 degrees	Heavy Trucks: 32.141				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-6.88	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-24.11	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	84.25	-28.07	2.78	-1.20	-5.56	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.2	62.1	60.3	54.3	62.9	63.5
Medium Trucks:	56.9	56.3	49.9	48.4	56.8	57.1
Heavy Trucks:	57.8	57.2	48.1	49.4	57.7	57.9
Vehicle Noise:	65.0	64.1	60.9	56.3	64.8	65.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	84	180
CNEL:	19	42	90	193



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: University Drive  
 Road Segment: Golden Glow to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 35,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,921 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.99	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.95	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	69.1	67.4	61.3	69.9	70.5
Medium Trucks:	63.8	63.1	56.7	55.2	63.7	63.9
Heavy Trucks:	64.2	63.6	54.6	55.8	64.2	64.3
Vehicle Noise:	71.9	71.0	67.9	63.2	71.7	72.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	175	377	811
CNEL:	87	188	405	872

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: University Drive  
 Road Segment: Ridgeline to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,900 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,869 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.47	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.77	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-17.73	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.1	67.3	61.3	69.9	70.5
Medium Trucks:	63.7	63.0	56.7	55.1	63.6	63.8
Heavy Trucks:	64.1	63.5	54.5	55.7	64.1	64.2
Vehicle Noise:	71.8	70.9	67.9	63.1	71.6	72.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	96	208	447	964
CNEL:	104	223	481	1,036

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: University Drive  
 Road Segment: Culver Drive to Golden Glow

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,500 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,846 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.13	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.06	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.0	67.3	61.2	69.8	70.4
Medium Trucks:	63.7	63.0	56.6	55.1	63.5	63.8
Heavy Trucks:	64.1	63.5	54.4	55.7	64.1	64.2
Vehicle Noise:	71.8	70.9	67.8	63.0	71.6	72.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	172	370	798
CNEL:	86	185	398	857

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: University Drive  
 Road Segment: Yale Avenue to Ridgeline

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,200 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,822 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.14	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.10	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.0	67.2	61.2	69.8	70.4
Medium Trucks:	63.6	62.9	56.6	55.0	63.5	63.7
Heavy Trucks:	64.0	63.4	54.4	55.7	64.0	64.1
Vehicle Noise:	71.7	70.8	67.8	63.0	71.6	72.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	171	368	793
CNEL:	85	184	395	852

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: University Drive  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 52,900 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,364 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.99	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.25	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.20	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.2	67.5	61.4	70.0	70.6
Medium Trucks:	63.9	63.2	56.8	55.3	63.7	64.0
Heavy Trucks:	64.3	63.7	54.7	55.9	64.3	64.4
Vehicle Noise:	72.0	71.1	68.0	63.2	71.8	72.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	111	238	513	1,106
CNEL:	119	256	552	1,189

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: University Drive  
 Road Segment: Mesa to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 34,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,805 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.07	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.17	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.12	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.3	70.3	68.5	62.4	71.1	71.7	
Medium Trucks:	64.9	64.2	57.9	56.3	64.8	65.0	
Heavy Trucks:	65.3	64.7	55.7	56.9	65.3	65.4	
Vehicle Noise:	73.0	72.1	69.1	64.3	72.8	73.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	200	430	926
CNEL:	99	214	462	995

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Project Name: Irvine GP  
 Road Name: University Drive Job Number: 15937  
 Road Segment: MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 34,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,805 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.07	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.17	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.12	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.3	70.3	68.5	62.4	71.1	71.7	
Medium Trucks:	64.9	64.2	57.9	56.3	64.8	65.0	
Heavy Trucks:	65.3	64.7	55.7	56.9	65.3	65.4	
Vehicle Noise:	73.0	72.1	69.1	64.3	72.8	73.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	200	430	926
CNEL:	99	214	462	995

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: University Drive  
 Road Segment: California Avenue to Mesa

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,000 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,805 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 47.329				
Road Grade: 0.0%	Medium Trucks: 47.244				
Left View: -90.0 degrees	Heavy Trucks: 47.329				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.07	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.17	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.12	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.3	70.3	68.5	62.4	71.1	71.7
Medium Trucks:	64.9	64.2	57.9	56.3	64.8	65.0
Heavy Trucks:	65.3	64.7	55.7	56.9	65.3	65.4
Vehicle Noise:	73.0	72.1	69.1	64.3	72.8	73.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	200	430	926
CNEL:	99	214	462	995



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: University Drive  
 Road Segment: Campus Drive to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,294 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.20	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.04	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.00	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.5	66.4	64.7	58.6	67.2	67.8	
Medium Trucks:	61.1	60.4	54.0	52.5	60.9	61.2	
Heavy Trucks:	61.5	60.9	51.9	53.1	61.5	61.6	
Vehicle Noise:	69.2	68.3	65.2	60.5	69.0	69.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	72	155	334	720
CNEL:	77	167	359	774

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing	Project Name: Irvine GP
Road Name: University Drive	Job Number: 15937
Road Segment: SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,238 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.48	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-18.72	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-22.68	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.4	65.6	59.5	68.2	68.8	
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1	
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5	
Vehicle Noise:	70.1	69.2	66.2	61.4	69.9	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	107	229	494
CNEL:	53	114	247	531

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing Project Name: Irvine GP  
 Road Name: University Drive Job Number: 15937  
 Road Segment: SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,000 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 2,145 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 50 mph																					
Near/Far Lane Distance: 78 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 84.0 feet	Heavy Trucks: 8.006 <span style="float:right">Grade Adjustment: 0.0</span>																				
Centerline Dist. to Observer: 84.0 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 74.458																				
Left View: -90.0 degrees	Medium Trucks: 74.404																				
Right View: 90.0 degrees	Heavy Trucks: 74.458																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.91	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.33	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.29	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.1	64.4	58.3	67.0	67.6
Medium Trucks:	60.8	60.1	53.7	52.2	60.7	60.9
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	68.9	68.0	64.9	60.2	68.7	69.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	148	320	689
CNEL:	74	159	344	740

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: University Drive  
 Road Segment: San Joaquin to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,939 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.47	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.77	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.73	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.3	59.7	53.3	51.8	60.2	60.5
Heavy Trucks:	60.8	60.2	51.1	52.4	60.7	60.9
Vehicle Noise:	68.5	67.5	64.5	59.7	68.3	68.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	139	299	644
CNEL:	69	149	321	692

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: University Drive  
 Road Segment: Harvard Avenue to San Joaquin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,939 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
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	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.47	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.77	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.73	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.3	59.7	53.3	51.8	60.2	60.5
Heavy Trucks:	60.8	60.2	51.1	52.4	60.7	60.9
Vehicle Noise:	68.5	67.5	64.5	59.7	68.3	68.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	139	299	644
CNEL:	69	149	321	692

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Valley Oak Drive  
 Road Segment: Hawkcreek to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 355 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-6.91	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-24.15	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-28.10	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.0	60.0	58.2	52.2	60.8	61.4	
Medium Trucks:	54.6	53.9	47.6	46.0	54.5	54.7	
Heavy Trucks:	55.0	54.4	45.4	46.7	55.0	55.1	
Vehicle Noise:	62.7	61.8	58.8	54.0	62.5	63.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	43	92	199
CNEL:	21	46	99	214

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Valley Oak Drive  
 Road Segment: Irvine Center Drive to Oak Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 4,500 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 371 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 42.814				
Road Grade: 0.0%	Medium Trucks: 42.720				
Left View: -90.0 degrees	Heavy Trucks: 42.814				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-6.71	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-23.95	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-27.91	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.2	62.1	60.4	54.3	62.9	63.5
Medium Trucks:	56.8	56.1	49.7	48.2	56.7	56.9
Heavy Trucks:	57.2	56.6	47.6	48.8	57.2	57.3
Vehicle Noise:	64.9	64.0	60.9	56.1	64.7	65.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	48	103	222
CNEL:	24	51	110	238

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Valley Oak Drive  
 Road Segment: Barranca Parkway to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 347 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-7.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-24.25	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-28.21	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.9	59.9	58.1	52.1	60.7	61.3	
Medium Trucks:	54.5	53.8	47.5	45.9	54.4	54.6	
Heavy Trucks:	54.9	54.3	45.3	46.6	54.9	55.0	
Vehicle Noise:	62.6	61.7	58.7	53.9	62.4	62.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	42	91	196
CNEL:	21	45	98	211



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Valley Oak Drive  
 Road Segment: Alton Parkway to Hawkcreek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	5,100 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	421 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-6.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-23.41	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-27.36	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.8	60.7	59.0	52.9	61.5	62.1
Medium Trucks:	55.4	54.7	48.3	46.8	55.2	55.5
Heavy Trucks:	55.8	55.2	46.1	47.4	55.8	55.9
Vehicle Noise:	63.5	62.6	59.5	54.7	63.3	63.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	48	104	223
CNEL:	24	52	111	240

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Von Karman Avenue  
 Road Segment: Marriott to Morse Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,900 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,807 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.62	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.62	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.58	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.8	64.0	57.9	66.6	67.2
Medium Trucks:	60.6	59.9	53.6	52.0	60.5	60.7
Heavy Trucks:	61.4	60.8	51.8	53.1	61.4	61.5
Vehicle Noise:	68.7	67.8	64.6	59.9	68.5	68.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	107	230	495
CNEL:	53	114	246	531

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Von Karman Avenue  
 Road Segment: Michelson Drive to Quartz

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,757 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.50	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.74	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.70	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.6	63.9	57.8	66.4	67.1
Medium Trucks:	60.5	59.8	53.4	51.9	60.4	60.6
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4
Vehicle Noise:	68.5	67.6	64.5	59.8	68.4	68.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	105	225	485
CNEL:	52	112	242	521

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Von Karman Avenue  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,964 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.98	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.21	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.1	64.4	58.3	66.9	67.5
Medium Trucks:	61.0	60.3	53.9	52.4	60.8	61.1
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	69.0	68.1	65.0	60.3	68.8	69.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	113	243	523
CNEL:	56	121	260	561

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Von Karman Avenue  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,200 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,162 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.40	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.84	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	84.25	-19.80	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.3	63.5	57.4	66.1	66.7
Medium Trucks:	60.1	59.4	53.0	51.5	60.0	60.2
Heavy Trucks:	60.9	60.3	51.3	52.5	60.9	61.0
Vehicle Noise:	68.2	67.3	64.1	59.4	68.0	68.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	255	549
CNEL:	59	127	273	589

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Von Karman Avenue  
 Road Segment: Main Street to Anchor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,906 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.85	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.34	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.1	66.0	64.2	58.2	66.8	67.4	
Medium Trucks:	60.8	60.1	53.8	52.2	60.7	60.9	
Heavy Trucks:	61.7	61.1	52.0	53.3	61.6	61.8	
Vehicle Noise:	68.9	68.0	64.8	60.2	68.7	69.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	110	238	512
CNEL:	55	118	255	550

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Von Karman Avenue  
 Road Segment: Anchor to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,906 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.85	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.34	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.0	64.2	58.2	66.8	67.4
Medium Trucks:	60.8	60.1	53.8	52.2	60.7	60.9
Heavy Trucks:	61.7	61.1	52.0	53.3	61.6	61.8
Vehicle Noise:	68.9	68.0	64.8	60.2	68.7	69.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	110	238	512
CNEL:	55	118	255	550

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Von Karman Avenue  
 Road Segment: Morse to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,100 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,906 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.85	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.34	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.0	64.2	58.2	66.8	67.4
Medium Trucks:	60.8	60.1	53.8	52.2	60.7	60.9
Heavy Trucks:	61.7	61.1	52.0	53.3	61.6	61.8
Vehicle Noise:	68.9	68.0	64.8	60.2	68.7	69.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	110	238	512
CNEL:	55	118	255	550



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Von Karman Avenue  
 Road Segment: Martin to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,403 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.48	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.68	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.7	62.9	56.8	65.5	66.1
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6
Heavy Trucks:	60.3	59.7	50.7	52.0	60.3	60.4
Vehicle Noise:	67.6	66.7	63.5	58.8	67.4	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	90	194	418
CNEL:	45	97	208	448

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Von Karman Avenue  
 Road Segment: Campus Drive to Martin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,403 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.48	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.68	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.7	62.9	56.8	65.5	66.1
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6
Heavy Trucks:	60.3	59.7	50.7	52.0	60.3	60.4
Vehicle Noise:	67.6	66.7	63.5	58.8	67.4	67.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	90	194	418
CNEL:	45	97	208	448

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Von Karman Avenue  
 Road Segment: Dupont Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,000 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,403 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.48	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.68	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.7	62.9	56.8	65.5	66.1
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6
Heavy Trucks:	60.3	59.7	50.7	52.0	60.3	60.4
Vehicle Noise:	67.6	66.7	63.5	58.8	67.4	67.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	90	194	418
CNEL:	45	97	208	448

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Walnut Avenue  
 Road Segment: Jeffrey Road to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,782 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.68	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.64	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.8	65.7	63.9	57.9	66.5	67.1	
Medium Trucks:	60.5	59.9	53.5	52.0	60.4	60.6	
Heavy Trucks:	61.4	60.8	51.7	53.0	61.4	61.5	
Vehicle Noise:	68.6	67.7	64.6	59.9	68.4	68.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	106	227	490
CNEL:	53	113	244	526

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Walnut Avenue  
 Road Segment: Myford Road to Jamboree Road SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,400 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,683 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.31	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.93	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.88	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.5	63.7	57.6	66.3	66.9
Medium Trucks:	60.3	59.6	53.2	51.7	60.2	60.4
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2
Vehicle Noise:	68.4	67.5	64.3	59.6	68.2	68.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	102	219	472
CNEL:	51	109	235	506

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Walnut Avenue  
 Road Segment: The Mall Street to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,700 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,543 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.07	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.31	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.26	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	65.1	63.3	57.3	65.9	66.5
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0
Heavy Trucks:	60.7	60.2	51.1	52.4	60.7	60.9
Vehicle Noise:	68.0	67.1	63.9	59.2	67.8	68.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	96	207	445
CNEL:	48	103	222	478

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Walnut Avenue  
 Road Segment: Harvard Avenue to The Mall Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 18,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,543 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.07	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.31	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.26	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.1	65.1	63.3	57.3	65.9	66.5	
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0	
Heavy Trucks:	60.7	60.2	51.1	52.4	60.7	60.9	
Vehicle Noise:	68.0	67.1	63.9	59.2	67.8	68.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	96	207	445
CNEL:	48	103	222	478

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Walnut Avenue  
 Road Segment: Franciscan Street to Ravenwood Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,800 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,469 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.48	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.9	63.1	57.0	65.7	66.3
Medium Trucks:	59.7	59.0	52.7	51.1	59.6	59.8
Heavy Trucks:	60.5	59.9	50.9	52.2	60.5	60.6
Vehicle Noise:	67.8	66.9	63.7	59.0	67.6	68.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	93	200	431
CNEL:	46	100	214	462



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Walnut Avenue  
 Road Segment: Ravenwood Street to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,469 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.48	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.9	63.1	57.0	65.7	66.3
Medium Trucks:	59.7	59.0	52.7	51.1	59.6	59.8
Heavy Trucks:	60.5	59.9	50.9	52.2	60.5	60.6
Vehicle Noise:	67.8	66.9	63.7	59.0	67.6	68.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	93	200	431
CNEL:	46	100	214	462

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Walnut Avenue  
 Road Segment: Culver Drive to Franciscan Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,469 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.48	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.9	64.9	63.1	57.0	65.7	66.3	
Medium Trucks:	59.7	59.0	52.7	51.1	59.6	59.8	
Heavy Trucks:	60.5	59.9	50.9	52.2	60.5	60.6	
Vehicle Noise:	67.8	66.9	63.7	59.0	67.6	68.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	93	200	431
CNEL:	46	100	214	462

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Walnut Avenue  
 Road Segment: Peters Canyon Road to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,675 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.29	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.95	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.91	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.9	63.8	62.0	56.0	64.6	65.2	
Medium Trucks:	58.6	57.9	51.6	50.0	58.5	58.7	
Heavy Trucks:	59.4	58.9	49.8	51.1	59.4	59.6	
Vehicle Noise:	66.7	65.8	62.6	58.0	66.5	67.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	106	228	490
CNEL:	53	113	244	526

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing Project Name: Irvine GP  
 Road Name: Walnut Avenue Job Number: 15937  
 Road Segment: Jamboree Road NB Off-Ramp to Peters Canyon Road

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,675 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
	VehicleType	Day	Evening	Night	Daily																
	Autos:	77.5%	12.9%	9.6%	97.42%																
	Medium Trucks:	84.8%	4.9%	10.3%	1.84%																
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Noise Source Elevations (in feet)</b>																					
Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float:right">Grade Adjustment: 0.0</span>																					
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.29	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.95	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.91	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	63.8	62.0	56.0	64.6	65.2
Medium Trucks:	58.6	57.9	51.6	50.0	58.5	58.7
Heavy Trucks:	59.4	58.9	49.8	51.1	59.4	59.6
Vehicle Noise:	66.7	65.8	62.6	58.0	66.5	67.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	106	228	490
CNEL:	53	113	244	526

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Walnut Avenue  
 Road Segment: Yale Avenue to Kazan Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	11,900 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	982 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		57.786		
Left View:	-90.0 degrees	Medium Trucks:		57.717		
Right View:	90.0 degrees	Heavy Trucks:		57.787		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.03	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.27	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.23	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.1	61.4	55.3	63.9	64.5
Medium Trucks:	57.9	57.3	50.9	49.4	57.8	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.0	65.1	62.0	57.3	65.8	66.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	329
CNEL:	35	76	164	353

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Walnut Avenue  
 Road Segment: Wisteria to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,900 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 982 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.03	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.27	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.23	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.1	61.4	55.3	63.9	64.5
Medium Trucks:	57.9	57.3	50.9	49.4	57.8	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.0	65.1	62.0	57.3	65.8	66.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	329
CNEL:	35	76	164	353

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Project Name: Irvine GP  
 Road Name: Warner Avenue Job Number: 15937  
 Road Segment: Jamboree Road SB Off-ramp to Construction North

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,096 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos:	77.5%	12.9%	9.6%	97.42%
	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
	<b>Noise Source Elevations (in feet)</b>				
	Autos:	2.000			
	Medium Trucks:	4.000			
	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos:	57.786			
	Medium Trucks:	57.717			
	Heavy Trucks:	57.787			

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.93	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.4	64.6	58.6	67.2	67.8
Medium Trucks:	61.2	60.6	54.2	52.7	61.1	61.3
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	69.3	68.4	65.3	60.6	69.1	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	253	546
CNEL:	59	126	272	586

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Warner Avenue  
 Road Segment: Construction North to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,386 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.73	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.6	62.9	56.8	65.4	66.0
Medium Trucks:	59.4	58.8	52.4	50.9	59.3	59.6
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	67.5	66.6	63.5	58.8	67.3	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	89	192	414
CNEL:	44	96	206	445



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Warner Avenue  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	11,400 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	941 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.46	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.41	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.0	62.9	61.2	55.1	63.7	64.3
Medium Trucks:	57.8	57.1	50.7	49.2	57.6	57.9
Heavy Trucks:	58.6	58.0	49.0	50.2	58.6	58.7
Vehicle Noise:	65.8	64.9	61.8	57.1	65.6	66.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	149	320
CNEL:	34	74	159	343

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Warner Avenue  
 Road Segment: Santa Ynez to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 751 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.20	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.39	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.0	62.0	60.2	54.1	62.8	63.4
Medium Trucks:	56.8	56.1	49.7	48.2	56.7	56.9
Heavy Trucks:	57.6	57.0	48.0	49.2	57.6	57.7
Vehicle Noise:	64.9	63.9	60.8	56.1	64.7	65.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	59	128	275
CNEL:	30	64	137	295

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Warner Avenue  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 718 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.39	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.63	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.59	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.8	61.8	60.0	53.9	62.6	63.2
Medium Trucks:	56.6	55.9	49.5	48.0	56.5	56.7
Heavy Trucks:	57.4	56.8	47.8	49.0	57.4	57.5
Vehicle Noise:	64.7	63.8	60.6	55.9	64.5	64.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	124	267
CNEL:	29	62	133	287

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: West Yale Loop  
 Road Segment: Alton Parkway to Blue Lake North

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 660 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.44	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.0	60.0	58.2	52.1	60.8	61.4	
Medium Trucks:	55.0	54.3	48.0	46.4	54.9	55.1	
Heavy Trucks:	56.3	55.7	46.7	47.9	56.3	56.4	
Vehicle Noise:	63.0	62.1	58.9	54.3	62.8	63.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	45	97	208
CNEL:	22	48	104	223

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: West Yale Loop  
 Road Segment: Eagle Run to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,000 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	660 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.44	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.0	60.0	58.2	52.1	60.8	61.4
Medium Trucks:	55.0	54.3	48.0	46.4	54.9	55.1
Heavy Trucks:	56.3	55.7	46.7	47.9	56.3	56.4
Vehicle Noise:	63.0	62.1	58.9	54.3	62.8	63.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	45	97	208
CNEL:	22	48	104	223

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: West Yale Loop  
 Road Segment: Thunder Run to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 578 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.82	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.02	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.4	59.4	57.6	51.6	60.2	60.8	
Medium Trucks:	54.4	53.7	47.4	45.8	54.3	54.5	
Heavy Trucks:	55.7	55.1	46.1	47.4	55.7	55.8	
Vehicle Noise:	62.4	61.6	58.3	53.7	62.3	62.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	41	88	191
CNEL:	20	44	95	204

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: West Yale Loop  
 Road Segment: Main Street to Timber Run

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 578 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.82	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.02	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.4	59.4	57.6	51.6	60.2	60.8	
Medium Trucks:	54.4	53.7	47.4	45.8	54.3	54.5	
Heavy Trucks:	55.7	55.1	46.1	47.4	55.7	55.8	
Vehicle Noise:	62.4	61.6	58.3	53.7	62.3	62.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	41	88	191
CNEL:	20	44	95	204

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: West Yale Loop  
 Road Segment: Yale Avenue to Shorebird

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 470 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
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### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.72	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.91	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.5	58.5	56.7	50.7	59.3	59.9
Medium Trucks:	53.5	52.8	46.5	44.9	53.4	53.6
Heavy Trucks:	54.8	54.3	45.2	46.5	54.8	54.9
Vehicle Noise:	61.6	60.7	57.4	52.8	61.4	61.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	36	77	166
CNEL:	18	38	83	178



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: West Yale Loop  
 Road Segment: Warner Avenue to Stonecreek South

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 470 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.72	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.91	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	59.5	58.5	56.7	50.7	59.3	59.9	
Medium Trucks:	53.5	52.8	46.5	44.9	53.4	53.6	
Heavy Trucks:	54.8	54.3	45.2	46.5	54.8	54.9	
Vehicle Noise:	61.6	60.7	57.4	52.8	61.4	61.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	36	77	166
CNEL:	18	38	83	178

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: West Yale Loop  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	5,500 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	454 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.87	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-22.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-26.07	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.4	58.3	56.6	50.5	59.1	59.7
Medium Trucks:	53.4	52.7	46.3	44.8	53.2	53.5
Heavy Trucks:	54.7	54.1	45.1	46.3	54.7	54.8
Vehicle Noise:	61.4	60.5	57.2	52.7	61.2	61.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	16	35	75	162
CNEL:	17	37	81	174

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: West Yale Loop  
 Road Segment: Stonecreek North to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 470 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
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FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.72	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.91	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	59.5	58.5	56.7	50.7	59.3	59.9	
Medium Trucks:	53.5	52.8	46.5	44.9	53.4	53.6	
Heavy Trucks:	54.8	54.3	45.2	46.5	54.8	54.9	
Vehicle Noise:	61.6	60.7	57.4	52.8	61.4	61.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	36	77	166
CNEL:	18	38	83	178

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: West Yale Loop  
 Road Segment: Birdsong to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 470 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.72	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.91	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	59.5	58.5	56.7	50.7	59.3	59.9	
Medium Trucks:	53.5	52.8	46.5	44.9	53.4	53.6	
Heavy Trucks:	54.8	54.3	45.2	46.5	54.8	54.9	
Vehicle Noise:	61.6	60.7	57.4	52.8	61.4	61.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	36	77	166
CNEL:	18	38	83	178

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Westwood  
 Road Segment: Yorktown to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 462 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-4.21	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-21.45	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-25.41	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.7	59.7	57.9	51.8	60.5	61.1
Medium Trucks:	55.0	54.3	47.9	46.4	54.8	55.1
Heavy Trucks:	56.8	56.2	47.2	48.4	56.8	56.9
Vehicle Noise:	62.9	62.1	58.6	54.2	62.8	63.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	27	57	124
CNEL:	13	28	61	132

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Westwood  
 Road Segment: Bryan Avenue to Leaf

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 297 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-6.13	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-23.37	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-27.33	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	58.8	57.7	56.0	49.9	58.5	59.1	
Medium Trucks:	53.0	52.4	46.0	44.5	52.9	53.1	
Heavy Trucks:	54.9	54.3	45.3	46.5	54.9	55.0	
Vehicle Noise:	61.0	60.1	56.7	52.3	60.9	61.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	20	43	92
CNEL:	10	21	46	98

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Yale Avenue  
 Road Segment: Deerfield Avenue to Winvale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 842 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.70	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-19.94	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-23.89	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.3	63.6	57.5	66.1	66.7
Medium Trucks:	60.2	59.5	53.1	51.6	60.0	60.3
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1
Vehicle Noise:	68.2	67.3	64.2	59.5	68.0	68.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	60	129	278
CNEL:	30	64	138	298

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Yale Avenue  
 Road Segment: Hicks Canyon Drive to Meadowood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,500 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	619 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.04	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-21.27	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-25.23	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.0	62.2	56.2	64.8	65.4
Medium Trucks:	58.8	58.2	51.8	50.2	58.7	58.9
Heavy Trucks:	59.7	59.1	50.0	51.3	59.6	59.8
Vehicle Noise:	66.9	66.0	62.8	58.2	66.7	67.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	49	105	226
CNEL:	24	52	113	243



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Yale Avenue  
 Road Segment: Walnut Avenue to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,122 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 32.140 Medium Trucks: 32.016 Heavy Trucks: 32.141																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.45	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-18.69	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	84.25	-22.65	2.78	-1.20	-5.56	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	68.9
Medium Trucks:	62.4	61.7	55.3	53.8	62.2	62.5
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3
Vehicle Noise:	70.4	69.5	66.4	61.7	70.2	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	89	192	414
CNEL:	44	96	206	445

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Yale Avenue  
 Road Segment: Roosevelt to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,122 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.45	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.69	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.65	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.8	63.7	61.9	55.9	64.5	65.1	
Medium Trucks:	58.5	57.8	51.5	49.9	58.4	58.6	
Heavy Trucks:	59.4	58.8	49.7	51.0	59.3	59.5	
Vehicle Noise:	66.6	65.7	62.5	57.9	66.4	66.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	167	360
CNEL:	39	83	179	386

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Yale Avenue  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,500 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,031 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.82	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.01	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.3	61.6	55.5	64.1	64.7
Medium Trucks:	58.2	57.5	51.1	49.6	58.0	58.3
Heavy Trucks:	59.0	58.4	49.4	50.6	59.0	59.1
Vehicle Noise:	66.2	65.3	62.2	57.5	66.0	66.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	73	158	340
CNEL:	37	79	169	365

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Yale Avenue  
 Road Segment: West Yale Loop to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,900 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	734 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.53	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.49	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.9	61.9	60.1	54.0	62.7	63.3
Medium Trucks:	56.7	56.0	49.6	48.1	56.6	56.8
Heavy Trucks:	57.5	56.9	47.9	49.1	57.5	57.6
Vehicle Noise:	64.8	63.8	60.7	56.0	64.6	65.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	126	271
CNEL:	29	63	135	291

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Yale Avenue  
 Road Segment: Winvale Avenue to Karen Ann Lane

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,200 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 842 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.70	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.94	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.89	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.5	62.5	60.7	54.6	63.3	63.9	
Medium Trucks:	57.3	56.6	50.2	48.7	57.2	57.4	
Heavy Trucks:	58.1	57.5	48.5	49.7	58.1	58.2	
Vehicle Noise:	65.3	64.4	61.3	56.6	65.2	65.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	297
CNEL:	32	69	148	319

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Yale Avenue  
 Road Segment: Karen Ann Lane to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 842 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.70	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.94	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.89	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.5	62.5	60.7	54.6	63.3	63.9	
Medium Trucks:	57.3	56.6	50.2	48.7	57.2	57.4	
Heavy Trucks:	58.1	57.5	48.5	49.7	58.1	58.2	
Vehicle Noise:	65.3	64.4	61.3	56.6	65.2	65.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	297
CNEL:	32	69	148	319

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Yale Avenue  
 Road Segment: Trabuco Road to Southwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 743 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.44	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.0	61.9	60.1	54.1	62.7	63.3	
Medium Trucks:	56.7	56.1	49.7	48.1	56.6	56.8	
Heavy Trucks:	57.6	57.0	47.9	49.2	57.6	57.7	
Vehicle Noise:	64.8	63.9	60.7	56.1	64.6	65.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	59	127	273
CNEL:	29	63	136	293

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Yale Avenue  
 Road Segment: Southwood to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,000 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	743 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.44	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.0	61.9	60.1	54.1	62.7	63.3
Medium Trucks:	56.7	56.1	49.7	48.1	56.6	56.8
Heavy Trucks:	57.6	57.0	47.9	49.2	57.6	57.7
Vehicle Noise:	64.8	63.9	60.7	56.1	64.6	65.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	59	127	273
CNEL:	29	63	136	293



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Yale Avenue  
 Road Segment: Northwood to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,500 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	701 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.73	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.69	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.7	61.7	59.9	53.8	62.5	63.1
Medium Trucks:	56.5	55.8	49.4	47.9	56.4	56.6
Heavy Trucks:	57.3	56.7	47.7	48.9	57.3	57.4
Vehicle Noise:	64.6	63.7	60.5	55.8	64.4	64.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	57	122	263
CNEL:	28	61	131	282

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Yale Avenue  
 Road Segment: Bryan Avenue to Monticello

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,500 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	701 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.73	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.69	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.7	61.7	59.9	53.8	62.5	63.1
Medium Trucks:	56.5	55.8	49.4	47.9	56.4	56.6
Heavy Trucks:	57.3	56.7	47.7	48.9	57.3	57.4
Vehicle Noise:	64.6	63.7	60.5	55.8	64.4	64.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	57	122	263
CNEL:	28	61	131	282

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Yale Avenue  
 Road Segment: Irvine Boulevard to Park Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,200 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	594 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.41	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.0	60.9	59.2	53.1	61.7	62.3	
Medium Trucks:	55.8	55.1	48.7	47.2	55.6	55.9	
Heavy Trucks:	56.6	56.0	47.0	48.2	56.6	56.7	
Vehicle Noise:	63.8	62.9	59.8	55.1	63.6	64.1	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	51	109	236
CNEL:	25	54	117	253

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Yale Avenue  
 Road Segment: University Drive to Royce

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 91 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-12.37	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	79.45	-29.61	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	84.25	-33.57	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.8	54.7	53.0	46.9	55.5	56.1
Medium Trucks:	49.6	48.9	42.5	41.0	49.4	49.7
Heavy Trucks:	50.4	49.8	40.8	42.0	50.4	50.5
Vehicle Noise:	57.6	56.7	53.6	48.9	57.4	57.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	16	34	73
CNEL:	8	17	36	78

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Yale Court  
 Road Segment: Arborwood to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,000 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	495 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-2.45	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-19.69	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-23.65	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.9	55.9	54.1	48.0	56.7	57.3
Medium Trucks:	51.8	51.1	44.7	43.2	51.6	51.9
Heavy Trucks:	55.0	54.4	45.3	46.6	54.9	55.1
Vehicle Noise:	59.8	59.0	55.1	51.1	59.6	60.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	16	35	76
CNEL:	8	17	38	81

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Ada  
 Road Segment: Barranca Parway to Marine Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 0 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-42.27	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-59.51	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-63.47	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	24.9	23.8	22.0	16.0	24.6	25.2
Medium Trucks:	18.9	18.2	11.8	10.3	18.7	19.0
Heavy Trucks:	20.2	19.6	10.5	11.8	20.1	20.3
Vehicle Noise:	26.9	26.0	22.7	18.2	26.7	27.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	0
CNEL:	0	0	0	1

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Ada  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,232 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,587 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.67	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.63	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.8	63.8	62.0	55.9	64.6	65.2
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2
Vehicle Noise:	66.8	65.9	62.7	58.1	66.7	67.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	81	174	374
CNEL:	40	86	186	400

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Enterprise to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 56,884 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,693 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.31	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-12.93	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-16.89	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	69.5	67.8	61.7	70.4	71.0
Medium Trucks:	64.2	63.5	57.1	55.6	64.1	64.3
Heavy Trucks:	64.6	64.0	55.0	56.2	64.6	64.7
Vehicle Noise:	72.3	71.4	68.3	63.6	72.1	72.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	116	250	539	1,161
CNEL:	125	269	579	1,248



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: I-5 NB Off-Ramp to Technology Drive West

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 60,594 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,999 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.58	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-12.66	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-16.61	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.3	70.2	68.5	62.4	71.0	71.6
Medium Trucks:	64.9	64.2	57.8	56.3	64.7	65.0
Heavy Trucks:	65.3	64.7	55.7	56.9	65.3	65.4
Vehicle Noise:	73.0	72.1	69.0	64.2	72.8	73.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	265	570	1,228
CNEL:	132	284	613	1,320

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: East Yale Loop to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,534 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,519 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.63	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.59	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.7	60.7	69.3	69.9
Medium Trucks:	63.1	62.5	56.1	54.5	63.0	63.2
Heavy Trucks:	63.5	63.0	53.9	55.2	63.5	63.7
Vehicle Noise:	71.3	70.3	67.3	62.5	71.1	71.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	158	341	735
CNEL:	79	170	367	790

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Gateway Boulevard to Enterprise

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,234 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,907 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.23	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.01	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.97	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.5	65.7	59.6	68.3	68.9	
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2	
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6	
Vehicle Noise:	70.2	69.3	66.3	61.5	70.0	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	182	392	844
CNEL:	91	195	421	907

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Jeffrey Road to Royal Oak

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,495 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,938 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.47	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.73	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.4	65.6	59.5	68.2	68.8
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	70.1	69.2	66.2	61.4	69.9	70.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	287	617
CNEL:	66	143	308	663

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Daimler Street to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,780 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,962 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.52	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.68	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.6	59.6	68.2	68.8
Medium Trucks:	62.0	61.4	55.0	53.5	61.9	62.2
Heavy Trucks:	62.5	61.9	52.8	54.1	62.4	62.6
Vehicle Noise:	70.2	69.3	66.2	61.4	70.0	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	134	289	622
CNEL:	67	144	310	669

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,362 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,010 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.62	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.62	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.57	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	68.9
Medium Trucks:	62.1	61.5	55.1	53.6	62.0	62.3
Heavy Trucks:	62.6	62.0	52.9	54.2	62.5	62.7
Vehicle Noise:	70.3	69.4	66.3	61.5	70.1	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	294	633
CNEL:	68	146	315	680

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: West Yale Loop to Lake Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,892 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,971 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.70	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.66	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.7	59.6	68.2	68.8
Medium Trucks:	62.1	61.4	55.0	53.5	61.9	62.2
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	70.2	69.3	66.2	61.4	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	135	290	624
CNEL:	67	145	311	671

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Technology Drive West to Ada

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,191 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,233 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.69	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.55	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.51	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.4	68.3	66.6	60.5	69.1	69.7
Medium Trucks:	63.0	62.3	55.9	54.4	62.9	63.1
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	71.1	70.2	67.1	62.4	70.9	71.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	426	919
CNEL:	99	213	458	987



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Creek Road to East Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,067 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,903 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.39	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.85	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.81	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0
Heavy Trucks:	62.3	61.7	52.7	54.0	62.3	62.4
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	283	610
CNEL:	66	141	304	655

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Red Hill Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,216 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,750 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.22	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.17	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	66.9	65.2	59.1	67.7	68.3
Medium Trucks:	61.5	60.9	54.5	53.0	61.4	61.7
Heavy Trucks:	62.0	61.4	52.3	53.6	61.9	62.1
Vehicle Noise:	69.7	68.8	65.7	60.9	69.5	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	124	268	577
CNEL:	62	134	288	620

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Lake Road to Creek Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,890 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,888 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.35	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.89	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.84	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.2	65.5	59.4	68.0	68.7	
Medium Trucks:	61.9	61.2	54.8	53.3	61.8	62.0	
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4	
Vehicle Noise:	70.0	69.1	66.0	61.3	69.8	70.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	282	607
CNEL:	65	140	303	652

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Telemetry to Banting

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,313 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,676 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.40	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.36	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	65.0	58.9	67.5	68.1
Medium Trucks:	61.4	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	61.8	61.2	52.1	53.4	61.8	61.9
Vehicle Noise:	69.5	68.6	65.5	60.7	69.3	69.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	121	260	560
CNEL:	60	130	279	602

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Irvine Boulevard to Commercentre

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,324 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,244 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.70	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.54	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.49	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	67.9	66.2	60.1	68.7	69.4
Medium Trucks:	62.6	61.9	55.5	54.0	62.5	62.7
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	70.7	69.8	66.7	62.0	70.5	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	196	421	908
CNEL:	98	210	453	975

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Jenner to Telemetry

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,130 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,661 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.44	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.40	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	64.9	58.9	67.5	68.1
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4
Heavy Trucks:	61.7	61.1	52.1	53.4	61.7	61.8
Vehicle Noise:	69.4	68.5	65.5	60.7	69.2	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	120	259	557
CNEL:	60	129	278	598

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Irvine Center Drive to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,165 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,489 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.55	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.69	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.64	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.8	65.0	59.0	67.6	68.2
Medium Trucks:	61.4	60.7	54.4	52.8	61.3	61.5
Heavy Trucks:	61.8	61.3	52.2	53.5	61.8	61.9
Vehicle Noise:	69.6	68.6	65.6	60.8	69.4	69.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	164	353	761
CNEL:	82	176	379	817

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Sand Canyon Avenue to Hospital

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 36,781 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,034 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.41	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.83	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.78	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.7	70.6	68.8	62.8	71.4	72.0	
Medium Trucks:	65.2	64.6	58.2	56.7	65.1	65.4	
Heavy Trucks:	65.7	65.1	56.0	57.3	65.6	65.8	
Vehicle Noise:	73.4	72.4	69.4	64.6	73.2	73.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	210	453	976
CNEL:	105	226	487	1,048



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Laguna Canyon Road to Jenner

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,926 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,644 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.49	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.44	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.6	64.9	58.8	67.4	68.1
Medium Trucks:	61.3	60.6	54.2	52.7	61.2	61.4
Heavy Trucks:	61.7	61.1	52.1	53.3	61.7	61.8
Vehicle Noise:	69.4	68.5	65.4	60.7	69.2	69.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	119	257	553
CNEL:	59	128	276	594

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan	Project Name: Irvine GP
Road Name: Alton Parkway	Job Number: 15937
Road Segment: Technology Drive East to Barranca Pkwy/Muirlands Blvd	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS															
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>															
Average Daily Traffic (Adt): 34,162 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,818 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15															
<b>Site Data</b>	<b>Vehicle Mix</b>															
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border: none;"> <tr> <td style="text-align: right;">Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td style="text-align: right;">Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td style="text-align: right;">Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </table>	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Autos:	77.5%	12.9%	9.6%	97.42%												
Medium Trucks:	84.8%	4.9%	10.3%	1.84%												
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%												
	<b>Noise Source Elevations (in feet)</b>															
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0															
	<b>Lane Equivalent Distance (in feet)</b>															
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458															

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.09	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.15	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.10	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.3	65.6	59.5	68.1	68.7	
Medium Trucks:	62.0	61.3	54.9	53.4	61.8	62.1	
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5	
Vehicle Noise:	70.1	69.2	66.1	61.3	69.9	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	178	384	827
CNEL:	89	191	412	888

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Royal Oak to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,001 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,650 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.47	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.43	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.7	66.7	64.9	58.8	67.5	68.1	
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4	
Heavy Trucks:	61.7	61.1	52.1	53.3	61.7	61.8	
Vehicle Noise:	69.4	68.5	65.5	60.7	69.2	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	119	257	555
CNEL:	60	128	277	596

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Banting to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,390 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,517 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.84	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.79	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.3	64.5	58.5	67.1	67.7
Medium Trucks:	60.9	60.3	53.9	52.3	60.8	61.0
Heavy Trucks:	61.3	60.8	51.7	53.0	61.3	61.4
Vehicle Noise:	69.1	68.1	65.1	60.3	68.9	69.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	113	243	524
CNEL:	56	121	262	563

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan	Project Name: Irvine GP
Road Name: Alton Parkway	Job Number: 15937
Road Segment: Barranca Pkwy/Muirlands Blvd to Jeronimo Road	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS															
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>															
Average Daily Traffic (Adt): 33,762 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,785 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15															
<b>Site Data</b>	<b>Vehicle Mix</b>															
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Autos:</td> <td style="text-align: center;">77.5%</td> <td style="text-align: center;">12.9%</td> <td style="text-align: center;">9.6%</td> <td style="text-align: center;">97.42%</td> </tr> <tr> <td style="text-align: center;">Medium Trucks:</td> <td style="text-align: center;">84.8%</td> <td style="text-align: center;">4.9%</td> <td style="text-align: center;">10.3%</td> <td style="text-align: center;">1.84%</td> </tr> <tr> <td style="text-align: center;">Heavy Trucks:</td> <td style="text-align: center;">86.5%</td> <td style="text-align: center;">2.7%</td> <td style="text-align: center;">10.8%</td> <td style="text-align: center;">0.74%</td> </tr> </table>	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Autos:	77.5%	12.9%	9.6%	97.42%												
Medium Trucks:	84.8%	4.9%	10.3%	1.84%												
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%												
	<b>Noise Source Elevations (in feet)</b>															
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0															
	<b>Lane Equivalent Distance (in feet)</b>															
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458															

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.04	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.20	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.15	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.3	65.5	59.5	68.1	68.7	
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0	
Heavy Trucks:	62.3	61.7	52.7	54.0	62.3	62.4	
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	381	820
CNEL:	88	190	409	881

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Ada to Technology Drive East

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,909 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,715 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.93	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.31	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.27	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.2	65.4	59.4	68.0	68.6
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	69.9	69.0	66.0	61.2	69.7	70.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	374	806
CNEL:	87	187	402	866

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,845 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,472 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.73	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.97	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.92	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.2	66.2	64.4	58.3	67.0	67.6	
Medium Trucks:	60.8	60.1	53.8	52.2	60.7	60.9	
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3	
Vehicle Noise:	68.9	68.0	65.0	60.2	68.7	69.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	111	239	514
CNEL:	55	119	256	552

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Jeronimo Road to Hughes

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,838 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,544 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.65	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.59	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.55	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	66.9	65.1	59.1	67.7	68.3
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6
Heavy Trucks:	61.9	61.3	52.3	53.6	61.9	62.0
Vehicle Noise:	69.6	68.7	65.7	60.9	69.5	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	358	772
CNEL:	83	179	385	829



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Hughes to Morgan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,010 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,393 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.38	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.86	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.81	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.6	64.9	58.8	67.4	68.0
Medium Trucks:	61.3	60.6	54.2	52.7	61.1	61.4
Heavy Trucks:	61.7	61.1	52.0	53.3	61.7	61.8
Vehicle Noise:	69.4	68.5	65.4	60.6	69.2	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	344	741
CNEL:	80	172	370	796

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Morgan to Toledo Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,745 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,041 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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Autos:	77.5%	12.9%	9.6%	97.42%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.69	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.55	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.50	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	65.9	64.2	58.1	66.7	67.3
Medium Trucks:	60.6	59.9	53.5	52.0	60.4	60.7
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1
Vehicle Noise:	68.7	67.8	64.7	59.9	68.5	69.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	309	667
CNEL:	72	154	332	716

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: San Marino to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,868 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,052 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.48	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	66.0	64.2	58.1	66.8	67.4
Medium Trucks:	60.6	59.9	53.5	52.0	60.5	60.7
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1
Vehicle Noise:	68.7	67.8	64.8	60.0	68.5	69.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	310	669
CNEL:	72	155	334	719

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Jamboree Road to Murphy Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,978 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,896 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.37	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.87	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.83	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.7	65.6	63.8	57.8	66.4	67.0	
Medium Trucks:	60.2	59.6	53.2	51.7	60.1	60.4	
Heavy Trucks:	60.7	60.1	51.0	52.3	60.6	60.8	
Vehicle Noise:	68.4	67.5	64.4	59.6	68.2	68.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	137	295	635
CNEL:	68	147	316	682

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Hospital to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,303 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,840 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.24	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.00	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.95	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.5	68.4	66.7	60.6	69.2	69.8
Medium Trucks:	63.1	62.4	56.0	54.5	62.9	63.2
Heavy Trucks:	63.5	62.9	53.9	55.1	63.5	63.6
Vehicle Noise:	71.2	70.3	67.2	62.4	71.0	71.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	151	324	699
CNEL:	75	162	349	751

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,026 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,817 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.19	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.05	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.01	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.4	68.4	66.6	60.6	69.2	69.8
Medium Trucks:	63.0	62.3	56.0	54.4	62.9	63.1
Heavy Trucks:	63.4	62.8	53.8	55.1	63.4	63.5
Vehicle Noise:	71.1	70.2	67.2	62.4	70.9	71.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	149	322	693
CNEL:	74	160	346	745

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Murphy Avenue to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,029 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,817 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.19	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.05	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.01	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.4	63.7	57.6	66.2	66.8
Medium Trucks:	60.1	59.4	53.0	51.5	59.9	60.2
Heavy Trucks:	60.5	59.9	50.9	52.1	60.5	60.6
Vehicle Noise:	68.2	67.3	64.2	59.4	68.0	68.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	286	617
CNEL:	66	143	308	663

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Foster to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,872 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,052 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.48	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	66.0	64.2	58.1	66.8	67.4
Medium Trucks:	60.6	59.9	53.5	52.0	60.5	60.7
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1
Vehicle Noise:	68.7	67.8	64.8	60.0	68.5	69.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	310	669
CNEL:	72	155	334	719



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Fairbanks to Foster

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,257 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,919 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.42	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.82	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.77	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.8	66.5	67.1
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4
Heavy Trucks:	60.7	60.1	51.1	52.3	60.7	60.8
Vehicle Noise:	68.4	67.5	64.5	59.7	68.2	68.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	138	297	640
CNEL:	69	148	319	687

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Toledo Way to Berteau

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,840 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,802 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.05	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.5	65.4	63.6	57.6	66.2	66.8	
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1	
Heavy Trucks:	60.4	59.8	50.8	52.1	60.4	60.5	
Vehicle Noise:	68.1	67.2	64.2	59.4	68.0	68.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	285	613
CNEL:	66	142	306	659

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Pacifica to Meridian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,738 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,546 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.52	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.76	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.71	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.3	61.6	55.3	53.7	62.2	62.4
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.4	69.5	66.5	61.7	70.2	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	134	289	622
CNEL:	67	144	310	669

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Bertea to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,315 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,758 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.04	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.20	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.15	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0
Heavy Trucks:	60.3	59.7	50.7	52.0	60.3	60.4
Vehicle Noise:	68.0	67.1	64.1	59.3	67.8	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	280	604
CNEL:	65	140	301	648

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Meridian to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,783 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,467 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.74	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.98	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.94	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.5	62.7	56.7	65.3	65.9
Medium Trucks:	59.1	58.5	52.1	50.5	59.0	59.2
Heavy Trucks:	59.5	59.0	49.9	51.2	59.5	59.7
Vehicle Noise:	67.3	66.3	63.3	58.5	67.1	67.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	115	248	535
CNEL:	57	124	267	575

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Paseo Westpark to San Marino

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,914 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,643 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.25	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.49	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.45	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	65.0	63.2	57.2	65.8	66.4
Medium Trucks:	59.6	58.9	52.6	51.0	59.5	59.7
Heavy Trucks:	60.0	59.4	50.4	51.7	60.0	60.1
Vehicle Noise:	67.7	66.8	63.8	59.0	67.6	68.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	124	268	577
CNEL:	62	134	288	620

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,294 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,344 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-18.36	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-22.32	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.1	62.4	56.3	64.9	65.5
Medium Trucks:	58.7	58.1	51.7	50.2	58.6	58.9
Heavy Trucks:	59.2	58.6	49.5	50.8	59.1	59.3
Vehicle Noise:	66.9	66.0	62.9	58.1	66.7	67.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	109	234	505
CNEL:	54	117	252	542

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Astor  
 Road Segment: Lynx to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,138 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,579 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	1.79	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-15.44	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-19.40	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.1	61.3	55.3	63.9	64.5
Medium Trucks:	58.7	58.0	51.7	50.1	58.6	58.8
Heavy Trucks:	61.2	60.6	51.5	52.8	61.1	61.3
Vehicle Noise:	66.7	65.8	62.2	58.0	66.5	66.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	102	220
CNEL:	23	50	109	234



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Astor  
 Road Segment: Cadence to Lynx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,633 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,290 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 37.138				
Road Grade: 0.0%		Medium Trucks: 37.030				
Left View: -90.0 degrees		Heavy Trucks: 37.139				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	0.91	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-16.32	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-20.28	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.3	62.2	60.5	54.4	63.0	63.6
Medium Trucks:	57.8	57.1	50.8	49.2	57.7	57.9
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	65.8	64.9	61.3	57.1	65.6	66.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	41	89	192
CNEL:	20	44	95	204

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bake Parkway  
 Road Segment: I-5 NB Off-Ramp to Rockfield Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 91,457 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 7,545 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	6.37	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-10.87	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-14.83	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.5	73.4	71.6	65.6	74.2	74.8
Medium Trucks:	68.0	67.4	61.0	59.4	67.9	68.1
Heavy Trucks:	68.4	67.9	58.8	60.1	68.4	68.6
Vehicle Noise:	76.2	75.2	72.2	67.4	76.0	76.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	250	538	1,159	2,496
CNEL:	268	578	1,245	2,682

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Bake Parkway  
 Road Segment: Muirlands Boulevard to Jeronimo Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 60,885 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,023 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.60	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-12.64	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-16.59	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.9	69.8	68.1	62.0	70.6	71.3
Medium Trucks:	64.5	63.8	57.4	55.9	64.4	64.6
Heavy Trucks:	64.9	64.3	55.3	56.5	64.9	65.0
Vehicle Noise:	72.6	71.7	68.6	63.9	72.4	72.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	262	564	1,215
CNEL:	131	281	606	1,305

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bake Parkway  
 Road Segment: Rockfield Boulevard to Muirlands Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 66,745 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,506 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	5.00	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-12.24	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-16.19	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.1	72.0	70.3	64.2	72.8	73.4	
Medium Trucks:	66.7	66.0	59.6	58.1	66.5	66.8	
Heavy Trucks:	67.1	66.5	57.5	58.7	67.1	67.2	
Vehicle Noise:	74.8	73.9	70.8	66.0	74.6	75.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	202	436	939	2,023
CNEL:	217	468	1,009	2,174

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bake Parkway  
 Road Segment: Jeronimo Road to Toledo Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 49,574 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,090 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.49	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.0	69.0	67.2	61.1	69.8	70.4	
Medium Trucks:	63.6	62.9	56.5	55.0	63.5	63.7	
Heavy Trucks:	64.0	63.4	54.4	55.6	64.0	64.1	
Vehicle Noise:	71.7	70.8	67.7	63.0	71.5	72.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	228	492	1,059
CNEL:	114	245	528	1,138

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bake Parkway  
 Road Segment: Toledo Way to Cromwell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,682 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,769 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.35	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.88	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.84	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.8	60.8	69.4	70.0
Medium Trucks:	63.2	62.6	56.2	54.6	63.1	63.3
Heavy Trucks:	63.6	63.1	54.0	55.3	63.6	63.7
Vehicle Noise:	71.4	70.4	67.4	62.6	71.2	71.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	466	1,003
CNEL:	108	232	500	1,078

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bake Parkway  
 Road Segment: Cromwell to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,725 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,772 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.36	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.88	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.84	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.8	60.8	69.4	70.0
Medium Trucks:	63.2	62.6	56.2	54.6	63.1	63.3
Heavy Trucks:	63.6	63.1	54.0	55.3	63.6	63.8
Vehicle Noise:	71.4	70.4	67.4	62.6	71.2	71.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	466	1,004
CNEL:	108	232	501	1,079

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Bake Parkway  
 Road Segment: Research Drive to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,918 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,221 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.06	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.18	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.14	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.3	64.5	58.5	67.1	67.7
Medium Trucks:	60.9	60.3	53.9	52.3	60.8	61.0
Heavy Trucks:	61.3	60.8	51.7	53.0	61.3	61.5
Vehicle Noise:	69.1	68.1	65.1	60.3	68.9	69.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	152	327	705
CNEL:	76	163	352	758



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bake Parkway  
 Road Segment: Irvine Center Drive to Research Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,085 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 750 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.66	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-20.90	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-24.85	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.6	61.6	59.8	53.8	62.4	63.0	
Medium Trucks:	56.2	55.5	49.2	47.6	56.1	56.3	
Heavy Trucks:	56.6	56.0	47.0	48.3	56.6	56.7	
Vehicle Noise:	64.3	63.4	60.4	55.6	64.1	64.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	342
CNEL:	37	79	170	367

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Bake Parkway  
 Road Segment: Lake Forest Drive to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,286 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	519 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	84.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 74.458				
Road Grade:	0.0%	Medium Trucks: 74.404				
Left View:	-90.0 degrees	Heavy Trucks: 74.458				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.26	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-22.50	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-26.45	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.0	60.0	58.2	52.2	60.8	61.4
Medium Trucks:	54.6	53.9	47.6	46.0	54.5	54.7
Heavy Trucks:	55.0	54.4	45.4	46.7	55.0	55.1
Vehicle Noise:	62.7	61.8	58.8	54.0	62.5	63.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	124	267
CNEL:	29	62	133	287

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Banting  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,452 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 367 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-22.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-26.40	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	56.8	55.8	54.0	48.0	56.6	57.2	
Medium Trucks:	51.1	50.4	44.0	42.5	50.9	51.2	
Heavy Trucks:	52.9	52.3	43.3	44.5	52.9	53.0	
Vehicle Noise:	59.1	58.2	54.8	50.4	58.9	59.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	53	114
CNEL:	12	26	56	121

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Pacifica to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,831 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,049 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.90	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.8	67.0	60.9	69.6	70.2
Medium Trucks:	63.2	62.5	56.2	54.6	63.1	63.3
Heavy Trucks:	63.2	62.7	53.6	54.9	63.2	63.4
Vehicle Noise:	71.4	70.5	67.5	62.7	71.2	71.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	349	752
CNEL:	81	174	375	809

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Banting to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,806 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,129 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.46	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.78	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.73	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	68.9	67.2	61.1	69.7	70.3
Medium Trucks:	63.4	62.7	56.4	54.8	63.3	63.5
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	71.6	70.6	67.7	62.8	71.4	71.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	358	771
CNEL:	83	179	385	830

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: I-5 HOV Ramp to Technology Drive West

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,598 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,699 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos: 77.5% 12.9% 9.6% 97.42% Medium Trucks: 84.8% 4.9% 10.3% 1.84% Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
	<b>Noise Source Elevations (in feet)</b>				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0				
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.52	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.76	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.71	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.0	68.0	66.2	60.1	68.8	69.4	
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5	
Heavy Trucks:	62.4	61.9	52.8	54.1	62.4	62.5	
Vehicle Noise:	70.6	69.7	66.7	61.8	70.4	70.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	143	308	664
CNEL:	71	154	331	714

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Technology Drive West to Ada

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,955 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.09	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.15	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.10	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.6	66.8	60.7	69.4	70.0
Medium Trucks:	63.0	62.3	56.0	54.4	62.9	63.1
Heavy Trucks:	63.0	62.5	53.4	54.7	63.0	63.2
Vehicle Noise:	71.2	70.3	67.3	62.4	71.0	71.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	338	729
CNEL:	78	169	364	784

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Irvine Center Drive to I-5 HOV Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,207 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,667 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.84	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.80	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.9	66.1	60.0	68.7	69.3
Medium Trucks:	62.3	61.7	55.3	53.7	62.2	62.4
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5
Vehicle Noise:	70.5	69.6	66.6	61.8	70.3	70.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	141	304	655
CNEL:	70	152	327	705



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,675 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,201 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.64	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.59	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.1	67.3	61.3	69.9	70.5
Medium Trucks:	63.5	62.9	56.5	55.0	63.4	63.6
Heavy Trucks:	63.6	63.0	53.9	55.2	63.5	63.7
Vehicle Noise:	71.7	70.8	67.8	63.0	71.5	72.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	170	366	789
CNEL:	85	183	394	848

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: East Yale Loop to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,229 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,081 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.36	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.88	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.83	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	68.8	67.1	61.0	69.6	70.2
Medium Trucks:	63.3	62.6	56.3	54.7	63.2	63.4
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4
Vehicle Noise:	71.5	70.5	67.6	62.7	71.3	71.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	164	353	760
CNEL:	82	176	379	817

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: West Yale Loop to Lake Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,495 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,103 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.41	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.83	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.79	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.9	68.9	67.1	61.1	69.7	70.3	
Medium Trucks:	63.3	62.7	56.3	54.8	63.2	63.4	
Heavy Trucks:	63.4	62.8	53.7	55.0	63.3	63.5	
Vehicle Noise:	71.5	70.6	67.6	62.8	71.3	71.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	355	765
CNEL:	82	177	382	823

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Ada to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,456 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,348 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.88	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.31	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	69.4	67.6	61.5	70.2	70.8
Medium Trucks:	63.8	63.1	56.8	55.2	63.7	63.9
Heavy Trucks:	63.8	63.3	54.2	55.5	63.8	63.9
Vehicle Noise:	72.0	71.1	68.1	63.2	71.8	72.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	382	823
CNEL:	89	191	411	886

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Lake Road to Creek Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,501 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,939 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.05	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.19	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.14	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.8	60.7	69.3	69.9
Medium Trucks:	63.0	62.3	55.9	54.4	62.9	63.1
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	71.2	70.2	67.3	62.4	71.0	71.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	72	156	336	725
CNEL:	78	168	362	780

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Red Hill Avenue to Armstrong Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,978 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,711 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	56.593			
Road Grade: 0.0%	Medium Trucks:	56.522			
Left View: -90.0 degrees	Heavy Trucks:	56.593			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.87	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-14.37	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-18.32	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.5	71.5	69.7	63.7	72.3	72.9
Medium Trucks:	65.9	65.3	58.9	57.4	65.8	66.0
Heavy Trucks:	66.0	65.4	56.3	57.6	65.9	66.1
Vehicle Noise:	74.1	73.2	70.2	65.4	73.9	74.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	183	393	847	1,825
CNEL:	196	423	911	1,963

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Discovery/Herchel to Banting

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,685 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,789 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.30	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.53	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.49	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.2	66.4	60.4	69.0	69.6
Medium Trucks:	62.6	62.0	55.6	54.1	62.5	62.7
Heavy Trucks:	62.7	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	70.8	69.9	66.9	62.1	70.6	71.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	148	319	687
CNEL:	74	159	343	739

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Lyon to East Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,895 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,806 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.49	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.45	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.2	66.5	60.4	69.0	69.6
Medium Trucks:	62.7	62.0	55.6	54.1	62.6	62.8
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.9	69.9	67.0	62.1	70.7	71.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	149	321	691
CNEL:	74	160	345	744



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Creek Road to Lyon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,564 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,779 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.51	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.2	68.2	66.4	60.3	69.0	69.6	
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7	
Heavy Trucks:	62.6	62.0	53.0	54.3	62.6	62.7	
Vehicle Noise:	70.8	69.9	66.9	62.0	70.6	71.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	147	318	684
CNEL:	74	159	342	736

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 38,982 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,216 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.25	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.99	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.94	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	69.5	67.7	61.7	70.3	70.9
Medium Trucks:	63.9	63.3	56.9	55.4	63.8	64.0
Heavy Trucks:	64.0	63.4	54.3	55.6	63.9	64.1
Vehicle Noise:	72.1	71.2	68.2	63.4	71.9	72.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	107	231	499	1,074
CNEL:	116	249	536	1,156

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Sand Canyon Avenue to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,260 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,589 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.01	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.7	65.9	59.8	68.5	69.1
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2
Heavy Trucks:	62.1	61.6	52.5	53.8	62.1	62.3
Vehicle Noise:	70.3	69.4	66.4	61.5	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	137	295	635
CNEL:	68	147	317	683

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Armstrong Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,440 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,006 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.96	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.28	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.24	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.2	67.4	61.4	70.0	70.6
Medium Trucks:	63.6	63.0	56.6	55.1	63.5	63.8
Heavy Trucks:	63.7	63.1	54.1	55.3	63.7	63.8
Vehicle Noise:	71.8	70.9	67.9	63.1	71.6	72.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	103	221	477	1,027
CNEL:	110	238	513	1,105

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,496 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,526 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.99	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.18	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.5	65.7	59.7	68.3	68.9	
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.1	
Heavy Trucks:	62.0	61.4	52.3	53.6	62.0	62.1	
Vehicle Noise:	70.1	69.2	66.2	61.4	69.9	70.4	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	287	618
CNEL:	66	143	308	665

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Jamboree Road to Construction Circle

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,130 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,403 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.99	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.25	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.21	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	62.3	61.6	55.2	53.7	62.1	62.4
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.4	69.5	66.6	61.7	70.2	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	188	405	872
CNEL:	94	202	436	938

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Santa Rosa to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,283 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,333 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.86	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.38	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.34	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.1	61.5	55.1	53.6	62.0	62.2
Heavy Trucks:	62.2	61.6	52.5	53.8	62.1	62.3
Vehicle Noise:	70.3	69.4	66.4	61.6	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	184	397	855
CNEL:	92	198	427	920

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: FedEx to Discovery/Herchel

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,244 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,258 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.83	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.02	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.6	64.9	58.8	67.4	68.1
Medium Trucks:	61.1	60.4	54.1	52.5	61.0	61.2
Heavy Trucks:	61.1	60.5	51.5	52.8	61.1	61.2
Vehicle Noise:	69.3	68.4	65.4	60.5	69.1	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	117	252	543
CNEL:	58	126	271	584



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Jeffrey Road to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,857 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,308 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.89	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.85	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.9	66.8	65.0	59.0	67.6	68.2	
Medium Trucks:	61.3	60.6	54.2	52.7	61.2	61.4	
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4	
Vehicle Noise:	69.5	68.5	65.6	60.7	69.3	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	120	259	558
CNEL:	60	129	278	600

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Laguna Canyon Road to FedEx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,848 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,225 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.94	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.18	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.14	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.5	64.8	58.7	67.3	67.9
Medium Trucks:	61.0	60.3	54.0	52.4	60.9	61.1
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1
Vehicle Noise:	69.2	68.2	65.3	60.4	69.0	69.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	115	248	534
CNEL:	57	124	266	574

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Pullman Street to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,153 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,983 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 56.593				
Road Grade: 0.0%	Medium Trucks: 56.522				
Left View: -90.0 degrees	Heavy Trucks: 56.593				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.92	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-15.31	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-19.27	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.6	70.5	68.8	62.7	71.3	71.9	
Medium Trucks:	65.0	64.3	58.0	56.4	64.9	65.1	
Heavy Trucks:	65.0	64.4	55.4	56.6	65.0	65.1	
Vehicle Noise:	73.2	72.2	69.3	64.4	73.0	73.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	158	340	732	1,578
CNEL:	170	366	788	1,697

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Construction Circle to Fire Station

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,175 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,077 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.35	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.89	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.84	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	67.2	65.4	59.4	68.0	68.6	
Medium Trucks:	61.6	61.0	54.6	53.0	61.5	61.7	
Heavy Trucks:	61.7	61.1	52.0	53.3	61.6	61.8	
Vehicle Noise:	69.8	68.9	65.9	61.1	69.6	70.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	170	367	791
CNEL:	85	183	395	851

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Fire Station to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,175 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,077 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.35	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.89	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.84	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.2	65.4	59.4	68.0	68.6
Medium Trucks:	61.6	61.0	54.6	53.0	61.5	61.7
Heavy Trucks:	61.7	61.1	52.0	53.3	61.6	61.8
Vehicle Noise:	69.8	68.9	65.9	61.1	69.6	70.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	170	367	791
CNEL:	85	183	395	851

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Paseo Westpark to Santa Rosa

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,294 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,087 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.37	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.87	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.82	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.2	65.4	59.4	68.0	68.6
Medium Trucks:	61.6	61.0	54.6	53.1	61.5	61.8
Heavy Trucks:	61.7	61.1	52.1	53.3	61.7	61.8
Vehicle Noise:	69.8	68.9	66.0	61.1	69.6	70.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	171	368	794
CNEL:	85	184	396	854

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,160 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,911 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.01	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.25	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.20	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.8	65.0	59.0	67.6	68.2
Medium Trucks:	61.3	60.6	54.2	52.7	61.1	61.4
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4
Vehicle Noise:	69.5	68.5	65.6	60.7	69.2	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	347	749
CNEL:	81	173	374	805

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bay Tree  
 Road Segment: Trabuco Road to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,723 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 225 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-7.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-24.58	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-28.54	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	54.7	53.6	51.9	45.8	54.4	55.1	
Medium Trucks:	48.9	48.3	41.9	40.3	48.8	49.0	
Heavy Trucks:	50.8	50.2	41.2	42.4	50.8	50.9	
Vehicle Noise:	56.9	56.1	52.6	48.2	56.8	57.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	18	38	82
CNEL:	9	19	41	87



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Beacon  
 Road Segment: Ridge Valley to Benchmark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,119 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	257 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-6.09	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-23.32	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-27.28	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.3	55.2	53.5	47.4	56.0	56.6
Medium Trucks:	50.8	50.1	43.8	42.2	50.7	50.9
Heavy Trucks:	53.3	52.7	43.7	44.9	53.3	53.4
Vehicle Noise:	58.8	57.9	54.3	50.1	58.6	59.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	14	30	66
CNEL:	7	15	32	70

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Benchmark (LN Street)  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,829 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 151 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-8.40	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-25.64	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-29.60	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	54.0	52.9	51.2	45.1	53.7	54.3	
Medium Trucks:	48.5	47.8	41.5	39.9	48.4	48.6	
Heavy Trucks:	51.0	50.4	41.3	42.6	50.9	51.1	
Vehicle Noise:	56.5	55.6	52.0	47.8	56.3	56.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	10	21	46
CNEL:	5	11	23	49

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bison Avenue  
 Road Segment: SR-73 NB Off-Ramp to California Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,221 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,163 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.40	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.84	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.79	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.6	66.6	64.8	58.7	67.4	68.0	
Medium Trucks:	61.4	60.7	54.3	52.8	61.3	61.5	
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3	
Vehicle Noise:	69.4	68.5	65.4	60.7	69.3	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	120	259	558
CNEL:	60	129	278	598

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bonita Canyon Drive  
 Road Segment: MacArthur Boulevard to SR-73

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,318 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,501 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 75.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	70.413			
Road Grade: 0.0%	Medium Trucks:	70.356			
Left View: -90.0 degrees	Heavy Trucks:	70.413			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.57	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.67	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-19.62	-2.33	-1.20	-5.25	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.2	65.4	59.4	68.0	68.6
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	62.2	61.6	52.6	53.9	62.2	62.3
Vehicle Noise:	69.9	69.0	66.0	61.2	69.7	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	72	155	335	721
CNEL:	77	167	359	774

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Bonita Canyon Drive  
 Road Segment: Turtle Ridge to Shady Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,645 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,703 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.10	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.33	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-21.29	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.5	63.7	57.7	66.3	66.9
Medium Trucks:	60.1	59.5	53.1	51.6	60.0	60.3
Heavy Trucks:	60.6	60.0	50.9	52.2	60.5	60.7
Vehicle Noise:	68.3	67.4	64.3	59.5	68.1	68.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	120	259	558
CNEL:	60	129	278	599

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bonita Canyon Drive  
 Road Segment: Newport Coast Drive to Turtle Ridge

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 18,987 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,566 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 75.0 feet Centerline Dist. to Observer: 75.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 70.413 Medium Trucks: 70.356 Heavy Trucks: 70.413																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.46	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.70	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-21.65	-2.33	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.2	65.1	63.4	57.3	65.9	66.6	
Medium Trucks:	59.8	59.1	52.7	51.2	59.7	59.9	
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3	
Vehicle Noise:	67.9	67.0	63.9	59.2	67.7	68.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	245	528
CNEL:	57	122	263	567

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bonita Canyon Drive  
 Road Segment: SR-73 NB Off-Ramp to Newport Coast Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,778 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,467 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 70.413				
Road Grade: 0.0%	Medium Trucks: 70.356				
Left View: -90.0 degrees	Heavy Trucks: 70.413				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.75	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.98	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-21.94	-2.33	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.9	64.9	63.1	57.0	65.7	66.3	
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6	
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0	
Vehicle Noise:	67.6	66.7	63.7	58.9	67.4	67.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	109	234	505
CNEL:	54	117	252	542

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Bosque  
 Road Segment: Cadence to Great Park Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,850 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 978 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 37.138				
Road Grade: 0.0%		Medium Trucks: 37.030				
Left View: -90.0 degrees		Heavy Trucks: 37.139				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.29	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-17.53	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-21.48	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.1	61.0	59.3	53.2	61.8	62.4
Medium Trucks:	56.6	55.9	49.6	48.0	56.5	56.7
Heavy Trucks:	59.1	58.5	49.5	50.7	59.1	59.2
Vehicle Noise:	64.6	63.7	60.1	55.9	64.4	64.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	16	34	74	160
CNEL:	17	37	79	170



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bosque  
 Road Segment: Irvine Boulevard to Benchmark (LN Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,686 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 634 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-2.17	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-19.41	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-23.36	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.2	59.2	57.4	51.3	60.0	60.6	
Medium Trucks:	54.7	54.1	47.7	46.1	54.6	54.8	
Heavy Trucks:	57.2	56.6	47.6	48.8	57.2	57.3	
Vehicle Noise:	62.7	61.9	58.2	54.0	62.6	63.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	26	55	120
CNEL:	13	27	59	127

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bosque  
 Road Segment: Benchmark to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,750 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 639 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-2.13	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-19.37	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-23.33	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.3	59.2	57.4	51.4	60.0	60.6
Medium Trucks:	54.8	54.1	47.7	46.2	54.6	54.9
Heavy Trucks:	57.2	56.6	47.6	48.9	57.2	57.3
Vehicle Noise:	62.8	61.9	58.3	54.1	62.6	63.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	26	56	120
CNEL:	13	28	59	128

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bosque  
 Road Segment: Great Park Boulevard to Beacon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,880 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 155 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-8.28	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-25.52	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-29.48	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	54.1	53.0	51.3	45.2	53.8	54.4	
Medium Trucks:	48.6	47.9	41.6	40.0	48.5	48.7	
Heavy Trucks:	51.1	50.5	41.5	42.7	51.1	51.2	
Vehicle Noise:	56.6	55.7	52.1	47.9	56.4	56.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	10	22	47
CNEL:	5	11	23	50

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Bosque  
 Road Segment: Beacon to S 5th Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1,524 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	126 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		37.138		
Left View:	-90.0 degrees	Medium Trucks:		37.030		
Right View:	90.0 degrees	Heavy Trucks:		37.139		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-9.20	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-26.43	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-30.39	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.2	52.1	50.4	44.3	52.9	53.5
Medium Trucks:	47.7	47.0	40.7	39.1	47.6	47.8
Heavy Trucks:	50.2	49.6	40.5	41.8	50.1	50.3
Vehicle Noise:	55.7	54.8	51.2	47.0	55.5	55.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	19	41
CNEL:	4	9	20	43

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Bryan Avenue  
 Road Segment: Jamboree Road to Market Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,684 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,789 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.66	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.62	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	64.0	57.9	66.5	67.1
Medium Trucks:	60.5	59.9	53.5	52.0	60.4	60.7
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5
Vehicle Noise:	68.6	67.7	64.6	59.9	68.4	68.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	106	228	491
CNEL:	53	114	245	527

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bryan Avenue  
 Road Segment: Market Place to El Camino Real

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,735 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,793 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.59	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.61	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.8	65.7	64.0	57.9	66.5	67.1	
Medium Trucks:	60.6	59.9	53.5	52.0	60.4	60.7	
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5	
Vehicle Noise:	68.6	67.7	64.6	59.9	68.4	68.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	106	228	492
CNEL:	53	114	245	528

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bryan Avenue  
 Road Segment: Rubicon to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,735 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,793 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
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<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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	<b>Noise Source Elevations (in feet)</b>																				
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FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.59	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.61	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.8	65.7	64.0	57.9	66.5	67.1	
Medium Trucks:	60.6	59.9	53.5	52.0	60.4	60.7	
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5	
Vehicle Noise:	68.6	67.7	64.6	59.9	68.4	68.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	106	228	492
CNEL:	53	114	245	528

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bryan Avenue  
 Road Segment: El Camino Real to Rubicon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,735 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,793 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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	<b>Noise Source Elevations (in feet)</b>																				
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	<b>Lane Equivalent Distance (in feet)</b>																				
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### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.59	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.61	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	64.0	57.9	66.5	67.1
Medium Trucks:	60.6	59.9	53.5	52.0	60.4	60.7
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5
Vehicle Noise:	68.6	67.7	64.6	59.9	68.4	68.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	106	228	492
CNEL:	53	114	245	528



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Bryan Avenue  
 Road Segment: Eastwood to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,981 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 988 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.20	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.1	61.4	55.3	64.0	64.6
Medium Trucks:	58.0	57.3	50.9	49.4	57.9	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.0	65.1	62.0	57.3	65.9	66.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	154	331
CNEL:	35	76	165	355

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bryan Avenue  
 Road Segment: Westwood to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,001 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 990 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.99	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.19	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.2	61.4	55.3	64.0	64.6
Medium Trucks:	58.0	57.3	50.9	49.4	57.9	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.1	65.1	62.0	57.3	65.9	66.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	154	331
CNEL:	36	77	165	355

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bryan Avenue  
 Road Segment: Culver Drive to Westwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,292 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,014 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.89	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.08	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.3	61.5	55.4	64.1	64.7
Medium Trucks:	58.1	57.4	51.0	49.5	58.0	58.2
Heavy Trucks:	58.9	58.3	49.3	50.5	58.9	59.0
Vehicle Noise:	66.2	65.3	62.1	57.4	66.0	66.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	73	156	337
CNEL:	36	78	168	361

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Bryan Avenue  
 Road Segment: Yale Avenue to Eastwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,130 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 918 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.52	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.9	62.8	61.1	55.0	63.6	64.2
Medium Trucks:	57.7	57.0	50.6	49.1	57.5	57.8
Heavy Trucks:	58.5	57.9	48.9	50.1	58.5	58.6
Vehicle Noise:	65.7	64.8	61.7	57.0	65.5	66.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	68	146	315
CNEL:	34	73	157	338

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Cadence  
 Road Segment: Pusan to Chinon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,989 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 412 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.29	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-22.53	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-26.49	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	60.8	59.0	53.0	61.6	62.2
Medium Trucks:	55.8	55.2	48.8	47.3	55.7	55.9
Heavy Trucks:	57.1	56.6	47.5	48.8	57.1	57.2
Vehicle Noise:	63.9	63.0	59.7	55.1	63.7	64.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	31	66	142
CNEL:	15	33	71	152

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Cadence  
 Road Segment: Bosque to Pusan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,049 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 417 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.24	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-22.48	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-26.44	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	60.8	59.1	53.0	61.6	62.2
Medium Trucks:	55.9	55.2	48.9	47.3	55.8	56.0
Heavy Trucks:	57.2	56.6	47.6	48.8	57.2	57.3
Vehicle Noise:	63.9	63.0	59.7	55.2	63.7	64.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	31	66	143
CNEL:	15	33	71	153

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Cadence  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,822 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 398 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
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	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.44	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-22.68	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-26.64	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.7	60.6	58.9	52.8	61.4	62.0	
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8	
Heavy Trucks:	57.0	56.4	47.4	48.6	57.0	57.1	
Vehicle Noise:	63.7	62.8	59.5	55.0	63.5	64.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	30	64	139
CNEL:	15	32	69	149

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Cadence  
 Road Segment: Chinon to Merit

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,575 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 130 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-10.30	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-27.54	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-31.50	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.8	55.8	54.0	48.0	56.6	57.2
Medium Trucks:	50.8	50.2	43.8	42.2	50.7	50.9
Heavy Trucks:	52.1	51.5	42.5	43.8	52.1	52.2
Vehicle Noise:	58.9	58.0	54.7	50.1	58.7	59.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	14	31	66
CNEL:	7	15	33	70



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Cadence  
 Road Segment: Merit to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,397 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 115 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-10.82	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-28.06	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-32.02	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	56.3	55.3	53.5	47.4	56.1	56.7	
Medium Trucks:	50.3	49.6	43.3	41.7	50.2	50.4	
Heavy Trucks:	51.6	51.0	42.0	43.2	51.6	51.7	
Vehicle Noise:	58.3	57.4	54.2	49.6	58.1	58.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	13	28	61
CNEL:	7	14	30	65

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: California Avenue  
 Road Segment: University Drive to Academy Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,529 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,281 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.36	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.60	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.56	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.9	62.8	61.1	55.0	63.6	64.2
Medium Trucks:	57.9	57.2	50.8	49.3	57.8	58.0
Heavy Trucks:	59.2	58.6	49.6	50.8	59.2	59.3
Vehicle Noise:	65.9	65.0	61.7	57.2	65.7	66.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	70	150	324
CNEL:	35	75	161	347

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: California Avenue  
 Road Segment: Campus Drive to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,756 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 805 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.38	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.62	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.58	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.9	60.8	59.1	53.0	61.6	62.2	
Medium Trucks:	55.9	55.2	48.8	47.3	55.7	56.0	
Heavy Trucks:	57.2	56.6	47.5	48.8	57.2	57.3	
Vehicle Noise:	63.9	63.0	59.7	55.2	63.7	64.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	51	110	238
CNEL:	25	55	118	255

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: California Avenue  
 Road Segment: Theory to Bison Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,438 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 779 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.76	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.72	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.7	60.7	58.9	52.9	61.5	62.1	
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8	
Heavy Trucks:	57.0	56.4	47.4	48.7	57.0	57.1	
Vehicle Noise:	63.7	62.9	59.6	55.0	63.6	64.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	233
CNEL:	25	54	116	249

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Campus Drive  
 Road Segment: Carlson Avenue to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,465 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,266 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 42.814				
Road Grade: 0.0%		Medium Trucks: 42.720				
Left View: -90.0 degrees		Heavy Trucks: 42.814				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.14	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-16.09	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-20.05	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	70.0	68.2	62.2	70.8	71.4
Medium Trucks:	64.6	64.0	57.6	56.0	64.5	64.7
Heavy Trucks:	65.0	64.4	55.4	56.7	65.0	65.1
Vehicle Noise:	72.8	71.8	68.8	64.0	72.6	73.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	343	740
CNEL:	79	171	369	795

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Campus Drive  
 Road Segment: University Drive to Bridge Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,499 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,599 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.74	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.46	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.9	60.8	69.4	70.0
Medium Trucks:	63.3	62.6	56.2	54.7	63.1	63.4
Heavy Trucks:	63.7	63.1	54.1	55.3	63.7	63.8
Vehicle Noise:	71.4	70.5	67.4	62.6	71.2	71.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	348	751
CNEL:	81	174	374	807

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Campus Drive  
 Road Segment: Jamboree Road to Carlson Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,851 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,380 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.36	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.88	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.84	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.3	66.5	60.4	69.1	69.7
Medium Trucks:	62.9	62.2	55.8	54.3	62.8	63.0
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4
Vehicle Noise:	71.0	70.1	67.0	62.3	70.8	71.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	153	329	708
CNEL:	76	164	353	761

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Campus Drive  
 Road Segment: Stanford Court to Berkeley Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,338 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,255 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.12	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.07	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.3	60.2	68.8	69.4
Medium Trucks:	62.6	62.0	55.6	54.1	62.5	62.8
Heavy Trucks:	63.1	62.5	53.4	54.7	63.0	63.2
Vehicle Noise:	70.8	69.9	66.8	62.0	70.6	71.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	147	317	683
CNEL:	73	158	341	734



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Campus Drive  
 Road Segment: California Avenue to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,438 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,181 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.98	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.22	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.9	67.9	66.1	60.1	68.7	69.3	
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6	
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0	
Vehicle Noise:	70.6	69.7	66.7	61.9	70.4	70.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	310	668
CNEL:	72	155	333	718

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Campus Drive  
 Road Segment: Berkeley Avenue to Cornell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,044 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,736 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.25	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.21	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.9	65.1	59.1	67.7	68.3
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6
Heavy Trucks:	61.9	61.3	52.3	53.6	61.9	62.0
Vehicle Noise:	69.6	68.7	65.7	60.9	69.4	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	124	266	574
CNEL:	62	133	286	616

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Campus Drive  
 Road Segment: Martin to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,957 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,316 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.41	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.7	65.7	63.9	57.9	66.5	67.1	
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4	
Heavy Trucks:	60.7	60.1	51.1	52.4	60.7	60.8	
Vehicle Noise:	68.4	67.5	64.5	59.7	68.2	68.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	221	477
CNEL:	51	110	238	513

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan	Project Name: Irvine GP
Road Name: Campus Drive	Job Number: 15937
Road Segment: Culver Drive to Paseo Montoya (Turtle Rock Drive)	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,713 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 1,296 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 50 mph																					
Near/Far Lane Distance: 48 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 62.5 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 62.5 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 57.786																				
Left View: -90.0 degrees	Medium Trucks: 57.717																				
Right View: 90.0 degrees	Heavy Trucks: 57.787																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.48	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.6	63.8	57.8	66.4	67.0
Medium Trucks:	60.2	59.6	53.2	51.7	60.1	60.4
Heavy Trucks:	60.7	60.1	51.0	52.3	60.6	60.8
Vehicle Noise:	68.4	67.5	64.4	59.6	68.2	68.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	102	219	472
CNEL:	51	109	235	507

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Campus Drive  
 Road Segment: Von Karman Avenue to Teller Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,785 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,137 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.85	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.09	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.04	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.1	65.0	63.3	57.2	65.8	66.5	
Medium Trucks:	59.7	59.0	52.6	51.1	59.6	59.8	
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2	
Vehicle Noise:	67.8	66.9	63.8	59.1	67.6	68.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	93	201	433
CNEL:	46	100	216	465

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Campus Drive  
 Road Segment: MacArthur Boulevard to Martin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,788 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,137 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.85	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.09	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.04	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	65.0	63.3	57.2	65.8	66.5
Medium Trucks:	59.7	59.0	52.6	51.1	59.6	59.8
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2
Vehicle Noise:	67.8	66.9	63.8	59.1	67.6	68.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	93	201	433
CNEL:	46	100	216	465

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Campus Drive  
 Road Segment: Teller Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,365 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 938 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.69	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.93	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.88	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.3	64.2	62.4	56.4	65.0	65.6	
Medium Trucks:	58.8	58.2	51.8	50.3	58.7	59.0	
Heavy Trucks:	59.2	58.7	49.6	50.9	59.2	59.4	
Vehicle Noise:	67.0	66.0	63.0	58.2	66.8	67.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	177	380
CNEL:	41	88	190	409

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Carlson Avenue  
 Road Segment: Michelson Drive to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,044 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,076 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.09	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.33	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.28	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.9	64.8	63.0	57.0	65.6	66.2	
Medium Trucks:	59.4	58.8	52.4	50.9	59.3	59.5	
Heavy Trucks:	59.8	59.3	50.2	51.5	59.8	60.0	
Vehicle Noise:	67.6	66.6	63.6	58.8	67.4	67.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	90	194	417
CNEL:	45	97	208	448



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Chinon  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,025 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	332 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-4.19	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-21.42	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-25.38	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.2	54.1	52.4	46.3	54.9	55.5
Medium Trucks:	50.0	49.4	43.0	41.4	49.9	50.1
Heavy Trucks:	53.2	52.6	43.6	44.9	53.2	53.3
Vehicle Noise:	58.1	57.2	53.3	49.4	57.9	58.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	13	27	59
CNEL:	6	13	29	62

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Creek Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,622 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 381 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-3.59	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-20.82	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-24.78	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	52.9	51.8	50.1	44.0	52.6	53.2	
Medium Trucks:	47.7	47.1	40.7	39.2	47.6	47.8	
Heavy Trucks:	50.9	50.4	41.3	42.6	50.9	51.1	
Vehicle Noise:	55.8	54.9	51.0	47.1	55.6	56.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	15	32	69
CNEL:	7	16	34	73

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 58,147 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,797 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.99	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.25	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.21	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.9	70.8	69.0	63.0	71.6	72.2
Medium Trucks:	65.3	64.6	58.2	56.7	65.1	65.4
Heavy Trucks:	65.3	64.7	55.7	56.9	65.3	65.4
Vehicle Noise:	73.4	72.5	69.6	64.7	73.2	73.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	138	298	642	1,383
CNEL:	149	320	690	1,488

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 60,031 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,953 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.13	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.11	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.07	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.0	70.9	69.2	63.1	71.7	72.4	
Medium Trucks:	65.4	64.7	58.4	56.8	65.3	65.5	
Heavy Trucks:	65.4	64.8	55.8	57.1	65.4	65.5	
Vehicle Noise:	73.6	72.7	69.7	64.8	73.4	73.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	141	304	656	1,412
CNEL:	152	327	705	1,520

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 60,471 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,989 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.16	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.08	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.04	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.0	71.0	69.2	63.2	71.8	72.4
Medium Trucks:	65.4	64.8	58.4	56.9	65.3	65.5
Heavy Trucks:	65.5	64.9	55.8	57.1	65.4	65.6
Vehicle Noise:	73.6	72.7	69.7	64.9	73.4	73.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	142	306	659	1,419
CNEL:	153	329	709	1,527

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Scottsdale Drive to I-5 SB Off- Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 60,310 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,976 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.05	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.0	71.0	69.2	63.1	71.8	72.4
Medium Trucks:	65.4	64.7	58.4	56.8	65.3	65.5
Heavy Trucks:	65.5	64.9	55.8	57.1	65.4	65.6
Vehicle Noise:	73.6	72.7	69.7	64.9	73.4	73.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	142	305	658	1,417
CNEL:	152	328	707	1,524

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: I-405 NB Off-Ramp to San Leandro

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 57,001 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,703 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.90	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.34	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.29	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.8	70.7	69.0	62.9	71.5	72.1	
Medium Trucks:	65.2	64.5	58.1	56.6	65.1	65.3	
Heavy Trucks:	65.2	64.6	55.6	56.8	65.2	65.3	
Vehicle Noise:	73.4	72.4	69.5	64.6	73.2	73.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	136	294	633	1,364
CNEL:	147	316	681	1,468

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: San Leandro to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 53,202 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,389 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.60	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.64	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.59	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.4	68.7	62.6	71.2	71.8
Medium Trucks:	64.9	64.2	57.8	56.3	64.8	65.0
Heavy Trucks:	64.9	64.3	55.3	56.5	64.9	65.0
Vehicle Noise:	73.1	72.1	69.2	64.3	72.9	73.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	130	281	605	1,303
CNEL:	140	302	651	1,402



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Harvard Avenue to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 52,683 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,346 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.56	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.68	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.64	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.4	70.4	68.6	62.6	71.2	71.8
Medium Trucks:	64.8	64.2	57.8	56.3	64.7	64.9
Heavy Trucks:	64.9	64.3	55.2	56.5	64.8	65.0
Vehicle Noise:	73.0	72.1	69.1	64.3	72.8	73.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	129	279	601	1,295
CNEL:	139	300	646	1,393

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Trabuco Road to Farwell Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 61,294 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,057 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.22	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.02	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-16.98	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.5	71.4	69.7	63.6	72.2	72.9
Medium Trucks:	65.9	65.2	58.9	57.3	65.8	66.0
Heavy Trucks:	65.9	65.3	56.3	57.6	65.9	66.0
Vehicle Noise:	74.1	73.2	70.2	65.3	73.9	74.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	145	313	674	1,453
CNEL:	156	337	725	1,563

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 51,629 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,259 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.47	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.77	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.72	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.4	70.3	68.5	62.5	71.1	71.7
Medium Trucks:	64.7	64.1	57.7	56.2	64.6	64.9
Heavy Trucks:	64.8	64.2	55.2	56.4	64.8	64.9
Vehicle Noise:	72.9	72.0	69.1	64.2	72.7	73.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	128	275	593	1,277
CNEL:	137	296	638	1,374

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Main Street to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 50,144 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,137 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.34	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.89	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.85	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.2	70.2	68.4	62.3	71.0	71.6
Medium Trucks:	64.6	63.9	57.6	56.0	64.5	64.7
Heavy Trucks:	64.6	64.1	55.0	56.3	64.6	64.8
Vehicle Noise:	72.8	71.9	68.9	64.1	72.6	73.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	125	270	581	1,253
CNEL:	135	290	626	1,348

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Warner Avenue to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 48,921 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,036 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.24	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.00	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.96	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	70.1	68.3	62.2	70.9	71.5
Medium Trucks:	64.5	63.8	57.5	55.9	64.4	64.6
Heavy Trucks:	64.5	64.0	54.9	56.2	64.5	64.7
Vehicle Noise:	72.7	71.8	68.8	63.9	72.5	73.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	265	572	1,232
CNEL:	133	286	615	1,326

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Walnut Avenue to Scottsdale Dive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 48,508 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,002 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.20	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.04	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.99	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.1	70.0	68.3	62.2	70.8	71.4	
Medium Trucks:	64.5	63.8	57.4	55.9	64.4	64.6	
Heavy Trucks:	64.5	63.9	54.9	56.1	64.5	64.6	
Vehicle Noise:	72.7	71.7	68.8	63.9	72.5	72.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	264	569	1,225
CNEL:	132	284	612	1,318

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,184 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,893 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.08	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.16	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.11	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.0	69.9	68.1	62.1	70.7	71.3	
Medium Trucks:	64.4	63.7	57.3	55.8	64.2	64.5	
Heavy Trucks:	64.4	63.8	54.8	56.0	64.4	64.5	
Vehicle Noise:	72.5	71.6	68.7	63.8	72.3	72.8	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	120	259	558	1,203
CNEL:	129	279	601	1,294

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Shady Canyon Drive to Palo Verde

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,206 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,245 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.69	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.55	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.51	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.2	69.2	67.4	61.3	70.0	70.6	
Medium Trucks:	63.6	62.9	56.6	55.0	63.5	63.7	
Heavy Trucks:	63.6	63.1	54.0	55.3	63.6	63.8	
Vehicle Noise:	71.8	70.9	67.9	63.0	71.6	72.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	172	371	799
CNEL:	86	185	399	860



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Deerfield Avenue to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,819 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,698 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.86	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.38	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.34	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.7	67.9	61.9	70.5	71.1
Medium Trucks:	64.1	63.5	57.1	55.6	64.0	64.2
Heavy Trucks:	64.2	63.6	54.5	55.8	64.1	64.3
Vehicle Noise:	72.3	71.4	68.4	63.6	72.1	72.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	116	250	540	1,162
CNEL:	125	269	580	1,251

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Sandburg Way to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 43,901 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,622 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.77	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.47	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.43	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.6	67.8	61.8	70.4	71.0
Medium Trucks:	64.0	63.4	57.0	55.5	63.9	64.2
Heavy Trucks:	64.1	63.5	54.4	55.7	64.1	64.2
Vehicle Noise:	72.2	71.3	68.3	63.5	72.0	72.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	247	532	1,146
CNEL:	123	266	572	1,233

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 43,101 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,556 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.69	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.55	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.51	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	69.5	67.7	61.7	70.3	70.9
Medium Trucks:	64.0	63.3	56.9	55.4	63.8	64.1
Heavy Trucks:	64.0	63.4	54.4	55.6	64.0	64.1
Vehicle Noise:	72.1	71.2	68.3	63.4	71.9	72.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	244	526	1,133
CNEL:	122	262	566	1,218

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Palo Verde to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,255 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,001 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.00	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.7	68.7	66.9	60.8	69.5	70.1	
Medium Trucks:	63.1	62.4	56.1	54.5	63.0	63.2	
Heavy Trucks:	63.1	62.6	53.5	54.8	63.1	63.3	
Vehicle Noise:	71.3	70.4	67.4	62.5	71.1	71.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	344	740
CNEL:	80	172	370	796

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: University Drive to Sandburg Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 40,605 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,350 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.43	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.81	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.77	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.2	67.5	61.4	70.0	70.7
Medium Trucks:	63.7	63.0	56.7	55.1	63.6	63.8
Heavy Trucks:	63.7	63.1	54.1	55.4	63.7	63.8
Vehicle Noise:	71.9	71.0	68.0	63.1	71.7	72.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	109	234	505	1,088
CNEL:	117	252	543	1,171

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Farwell Avenue to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,503 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,919 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.11	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.13	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.08	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.4	70.3	68.6	62.5	71.1	71.7	
Medium Trucks:	64.8	64.1	57.8	56.2	64.7	64.9	
Heavy Trucks:	64.8	64.2	55.2	56.5	64.8	64.9	
Vehicle Noise:	73.0	72.1	69.1	64.2	72.8	73.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	264	569	1,226
CNEL:	132	284	612	1,319

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Campus Drive to High School

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,178 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,315 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.38	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.86	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.81	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.2	67.4	61.4	70.0	70.6
Medium Trucks:	63.7	63.0	56.6	55.1	63.5	63.8
Heavy Trucks:	63.7	63.1	54.1	55.3	63.7	63.8
Vehicle Noise:	71.8	70.9	68.0	63.1	71.6	72.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	108	233	502	1,081
CNEL:	116	250	540	1,163

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: High School to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,525 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,261 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.31	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.93	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.88	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.2	69.1	67.4	61.3	69.9	70.5	
Medium Trucks:	63.6	62.9	56.5	55.0	63.5	63.7	
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7	
Vehicle Noise:	71.8	70.8	67.9	63.0	71.6	72.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	107	230	496	1,069
CNEL:	115	248	534	1,150



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Bryan Avenue to Florence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,270 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,075 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">VehicleType</th> <th style="text-align: center;">Day</th> <th style="text-align: center;">Evening</th> <th style="text-align: center;">Night</th> <th style="text-align: center;">Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td style="text-align: center;">77.5%</td> <td style="text-align: center;">12.9%</td> <td style="text-align: center;">9.6%</td> <td style="text-align: center;">97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td style="text-align: center;">84.8%</td> <td style="text-align: center;">4.9%</td> <td style="text-align: center;">10.3%</td> <td style="text-align: center;">1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td style="text-align: center;">86.5%</td> <td style="text-align: center;">2.7%</td> <td style="text-align: center;">10.8%</td> <td style="text-align: center;">0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.06	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.18	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.14	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.9	68.9	67.1	61.1	69.7	70.3	
Medium Trucks:	63.3	62.7	56.3	54.7	63.2	63.4	
Heavy Trucks:	63.4	62.8	53.7	55.0	63.3	63.5	
Vehicle Noise:	71.5	70.6	67.6	62.8	71.3	71.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	103	221	477	1,028
CNEL:	111	238	513	1,106

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Portola Parkway to Settlers

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,591 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,781 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.55	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.51	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.2	66.4	60.3	69.0	69.6
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	62.6	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	70.8	69.9	66.9	62.0	70.6	71.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	148	318	685
CNEL:	74	159	342	737

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Florence to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,440 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,006 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.96	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.28	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.24	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.8	67.0	61.0	69.6	70.2
Medium Trucks:	63.2	62.6	56.2	54.7	63.1	63.3
Heavy Trucks:	63.3	62.7	53.6	54.9	63.2	63.4
Vehicle Noise:	71.4	70.5	67.5	62.7	71.2	71.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	218	470	1,013
CNEL:	109	235	506	1,089

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Irvine Boulevard to Viewpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,912 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,303 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.80	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.44	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.39	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.9	59.8	68.4	69.0
Medium Trucks:	62.1	61.4	55.0	53.5	62.0	62.2
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	70.3	69.3	66.4	61.5	70.1	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	183	393	848
CNEL:	91	196	423	912

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Viewpark to Meadowood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,661 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,282 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.76	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.48	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.43	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.6	67.6	65.8	59.8	68.4	69.0	
Medium Trucks:	62.0	61.4	55.0	53.5	61.9	62.1	
Heavy Trucks:	62.1	61.5	52.4	53.7	62.0	62.2	
Vehicle Noise:	70.2	69.3	66.3	61.5	70.0	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	182	391	843
CNEL:	91	195	421	906

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Settlers to Furrow

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,425 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 943 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-3.08	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-20.32	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-24.27	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.4	63.6	57.6	66.2	66.8
Medium Trucks:	59.8	59.2	52.8	51.3	59.7	60.0
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0
Vehicle Noise:	68.0	67.1	64.2	59.3	67.8	68.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	97	208	448
CNEL:	48	104	224	482

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Meadowood to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,435 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,603 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.77	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-18.01	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.97	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.0	64.3	58.2	66.8	67.5
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	60.5	59.9	50.9	52.2	60.5	60.6
Vehicle Noise:	68.7	67.8	64.8	59.9	68.5	69.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	143	309	666
CNEL:	72	154	333	716

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Discovery Drive  
 Road Segment: Irvine Center Drive to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,932 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	737 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.77	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.00	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.96	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.5	60.4	58.7	52.6	61.2	61.8
Medium Trucks:	55.5	54.8	48.4	46.9	55.4	55.6
Heavy Trucks:	56.8	56.2	47.2	48.4	56.8	56.9
Vehicle Noise:	63.5	62.6	59.3	54.8	63.3	63.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	48	104	224
CNEL:	24	52	111	240



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Discovery Drive  
 Road Segment: Waterworks Way to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,423 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	365 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.82	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-23.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-27.01	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.4	57.4	55.6	49.6	58.2	58.8
Medium Trucks:	52.4	51.7	45.4	43.8	52.3	52.5
Heavy Trucks:	53.7	53.1	44.1	45.4	53.7	53.8
Vehicle Noise:	60.5	59.6	56.3	51.7	60.3	60.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	30	65	140
CNEL:	15	32	70	150

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: East Yale Loop  
 Road Segment: Alton Parkway to Witherspoon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,625 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,042 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.46	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.0	61.9	60.2	54.1	62.7	63.3	
Medium Trucks:	57.0	56.3	49.9	48.4	56.9	57.1	
Heavy Trucks:	58.3	57.7	48.7	49.9	58.3	58.4	
Vehicle Noise:	65.0	64.1	60.8	56.3	64.8	65.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	131	282
CNEL:	30	65	140	302

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: East Yale Loop  
 Road Segment: Osborn Street to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,855 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 978 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.73	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.7	61.7	59.9	53.8	62.5	63.1	
Medium Trucks:	56.7	56.0	49.7	48.1	56.6	56.8	
Heavy Trucks:	58.0	57.4	48.4	49.6	58.0	58.1	
Vehicle Noise:	64.7	63.8	60.6	56.0	64.6	65.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	126	271
CNEL:	29	62	135	290

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: East Yale Loop  
 Road Segment: Yale Avenue to Springbrook South

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,084 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 832 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.43	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.0	61.0	59.2	53.1	61.8	62.4
Medium Trucks:	56.0	55.3	49.0	47.4	55.9	56.1
Heavy Trucks:	57.3	56.7	47.7	48.9	57.3	57.4
Vehicle Noise:	64.0	63.1	59.9	55.3	63.8	64.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	113	243
CNEL:	26	56	121	260

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: East Yale Loop  
 Road Segment: Springbrook North to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 8,140 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 672 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.41	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.36	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.1	60.0	58.3	52.2	60.8	61.4	
Medium Trucks:	55.1	54.4	48.0	46.5	55.0	55.2	
Heavy Trucks:	56.4	55.8	46.8	48.0	56.4	56.5	
Vehicle Noise:	63.1	62.2	58.9	54.4	62.9	63.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	45	98	211
CNEL:	23	49	105	226

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: East Yale Loop  
 Road Segment: Woodspring to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,731 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 555 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.99	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.19	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.3	59.2	57.4	51.4	60.0	60.6	
Medium Trucks:	54.2	53.6	47.2	45.7	54.1	54.4	
Heavy Trucks:	55.6	55.0	45.9	47.2	55.5	55.7	
Vehicle Noise:	62.3	61.4	58.1	53.6	62.1	62.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	40	86	186
CNEL:	20	43	92	199

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: East Yale Loop  
 Road Segment: Barranca Parkway to Eastshore

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,747 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	557 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.98	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.22	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.18	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.3	59.2	57.5	51.4	60.0	60.6
Medium Trucks:	54.3	53.6	47.2	45.7	54.1	54.4
Heavy Trucks:	55.6	55.0	45.9	47.2	55.6	55.7
Vehicle Noise:	62.3	61.4	58.1	53.6	62.1	62.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	40	86	186
CNEL:	20	43	92	199

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Eastwood  
 Road Segment: Bryan Avenue to Monticello

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,973 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	245 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-6.96	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-24.20	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-28.16	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.0	56.9	55.1	49.1	57.7	58.3
Medium Trucks:	52.2	51.5	45.2	43.6	52.1	52.3
Heavy Trucks:	54.0	53.5	44.4	45.7	54.0	54.2
Vehicle Noise:	60.2	59.3	55.9	51.5	60.0	60.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	38	81
CNEL:	9	19	40	87



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Eastwood  
 Road Segment: Columbus to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,023 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	167 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-8.64	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-25.87	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-29.83	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.3	55.2	53.5	47.4	56.0	56.6
Medium Trucks:	50.5	49.9	43.5	41.9	50.4	50.6
Heavy Trucks:	52.4	51.8	42.7	44.0	52.4	52.5
Vehicle Noise:	58.5	57.6	54.2	49.8	58.3	58.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	14	29	63
CNEL:	7	14	31	67

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: El Camino Real  
 Road Segment: Jamboree Road to Alliance (SR-261 Bridge)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,775 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,549 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.46	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.78	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.73	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.7	63.7	61.9	55.8	64.5	65.1
Medium Trucks:	58.7	58.0	51.7	50.1	58.6	58.8
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1
Vehicle Noise:	66.7	65.8	62.6	58.0	66.5	67.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	171	368
CNEL:	39	85	183	394

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: El Camino Real North  
 Road Segment: El Camino Real to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,510 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 537 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.33	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.1	59.1	57.3	51.2	59.9	60.5	
Medium Trucks:	54.1	53.4	47.1	45.5	54.0	54.2	
Heavy Trucks:	55.4	54.8	45.8	47.0	55.4	55.5	
Vehicle Noise:	62.1	61.2	58.0	53.4	61.9	62.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	84	182
CNEL:	19	42	90	194

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Fairbanks  
 Road Segment: Alton Parkway to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,025 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,487 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 37.138				
Road Grade: 0.0%		Medium Trucks: 37.030				
Left View: -90.0 degrees		Heavy Trucks: 37.139				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.28	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-16.95	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-20.91	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.4	64.6	58.5	67.2	67.8
Medium Trucks:	61.4	60.7	54.4	52.8	61.3	61.5
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	69.4	68.5	65.3	60.7	69.3	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	72	155	334
CNEL:	36	77	166	358

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Fairbanks  
 Road Segment: Irvine Boulevard to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,256 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 764 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.61	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-19.85	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-23.80	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.5	63.5	61.7	55.7	64.3	64.9	
Medium Trucks:	58.5	57.8	51.5	49.9	58.4	58.6	
Heavy Trucks:	59.8	59.2	50.2	51.5	59.8	59.9	
Vehicle Noise:	66.5	65.6	62.4	57.8	66.4	66.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	46	100	214
CNEL:	23	49	107	230

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Fairchild Road  
 Road Segment: MacArthur Boulevard to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,074 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 584 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.53	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.48	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	60.9	59.1	53.0	61.7	62.3
Medium Trucks:	55.7	55.0	48.6	47.1	55.6	55.8
Heavy Trucks:	56.5	55.9	46.9	48.1	56.5	56.6
Vehicle Noise:	63.8	62.9	59.7	55.0	63.6	64.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	233
CNEL:	25	54	116	250

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Gateway Boulevard  
 Road Segment: Alton Parkway to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,311 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,181 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	0.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-16.71	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-20.66	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.0	59.0	57.2	51.2	59.8	60.4
Medium Trucks:	54.5	53.9	47.5	46.0	54.4	54.6
Heavy Trucks:	57.0	56.4	47.4	48.6	57.0	57.1
Vehicle Noise:	62.5	61.7	58.0	53.9	62.4	62.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	42	90	194
CNEL:	21	44	96	206

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan Project Name: Irvine GP  
 Road Name: Gateway Boulevard Job Number: 15937  
 Road Segment: Spectrum Center Drive (Fortune Drive) to Alton Parkway

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,892 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 899 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.65	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.89	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.85	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	58.9	57.8	56.0	50.0	58.6	59.2	
Medium Trucks:	53.3	52.7	46.3	44.8	53.2	53.5	
Heavy Trucks:	55.8	55.2	46.2	47.5	55.8	55.9	
Vehicle Noise:	61.4	60.5	56.9	52.7	61.2	61.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	16	35	75	162
CNEL:	17	37	80	172



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Gateway Boulevard  
 Road Segment: Irvine Center Drive to Meridian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,160 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 426 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-3.90	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-21.14	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-25.09	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.6	54.5	52.8	46.7	55.3	55.9
Medium Trucks:	50.1	49.4	43.1	41.5	50.0	50.2
Heavy Trucks:	52.6	52.0	43.0	44.2	52.6	52.7
Vehicle Noise:	58.1	57.2	53.6	49.4	57.9	58.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	10	21	46	98
CNEL:	10	23	49	105

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Great Park Boulevard  
 Road Segment: Sand Canyon to Ridge Valley

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 41,232 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,402 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.91	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.33	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.29	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.2	71.1	69.3	63.3	71.9	72.5
Medium Trucks:	65.7	65.1	58.7	57.2	65.6	65.9
Heavy Trucks:	66.1	65.6	56.5	57.8	66.1	66.3
Vehicle Noise:	73.9	72.9	69.9	65.1	73.7	74.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	105	227	489	1,053
CNEL:	113	244	525	1,131

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Great Park Boulevard  
 Road Segment: Ridge Valley (O Street) to Bosque (LY Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,241 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,670 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.42	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.38	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	64.9	58.9	67.5	68.1
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	61.8	61.2	52.1	53.4	61.7	61.9
Vehicle Noise:	69.5	68.6	65.5	60.7	69.3	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	120	259	559
CNEL:	60	129	279	601

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Great Park Boulevard (EB)  
 Road Segment: Bosque to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,039 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 581 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.77	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-22.01	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-25.96	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.1	65.0	63.2	57.2	65.8	66.4	
Medium Trucks:	59.6	59.0	52.6	51.1	59.5	59.8	
Heavy Trucks:	60.0	59.5	50.4	51.7	60.0	60.2	
Vehicle Noise:	67.8	66.8	63.8	59.0	67.6	68.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	56	120	258
CNEL:	28	60	129	277

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Great Park Boulevard (WB)  
 Road Segment: Bosque to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,351 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 524 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.22	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-22.45	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-26.41	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.6	62.8	56.7	65.4	66.0
Medium Trucks:	59.2	58.5	52.2	50.6	59.1	59.3
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7
Vehicle Noise:	67.3	66.4	63.4	58.6	67.1	67.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	112	241
CNEL:	26	56	120	259

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: University Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,732 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,793 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 37.138				
Road Grade: 0.0%		Medium Trucks: 37.030				
Left View: -90.0 degrees		Heavy Trucks: 37.139				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.58	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-16.65	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-20.61	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.8	60.8	69.4	70.0
Medium Trucks:	63.4	62.8	56.4	54.9	63.3	63.6
Heavy Trucks:	64.3	63.7	54.7	55.9	64.3	64.4
Vehicle Noise:	71.5	70.6	67.5	62.8	71.3	71.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	99	213	459
CNEL:	49	106	229	493

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: Michelson Drive to Coronado

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,191 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,408 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.87	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.37	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.33	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.3	59.2	67.8	68.4
Medium Trucks:	61.8	61.2	54.8	53.3	61.7	62.0
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	69.9	69.0	65.9	61.2	69.7	70.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	278	599
CNEL:	64	138	298	643

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: San Marino to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,906 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,302 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.67	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.57	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.52	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.8	65.1	59.0	67.6	68.2
Medium Trucks:	61.6	61.0	54.6	53.1	61.5	61.8
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	69.7	68.8	65.7	61.0	69.5	70.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	270	581
CNEL:	62	134	289	624



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: Coronado to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,017 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,311 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.69	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.55	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.51	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.9	66.8	65.1	59.0	67.6	68.2	
Medium Trucks:	61.7	61.0	54.6	53.1	61.5	61.8	
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6	
Vehicle Noise:	69.7	68.8	65.7	61.0	69.5	70.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	126	271	583
CNEL:	63	135	290	625

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: San Carlo to San Marino

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,164 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,241 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.55	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.68	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.64	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	64.9	58.9	67.5	68.1
Medium Trucks:	61.5	60.9	54.5	52.9	61.4	61.6
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5
Vehicle Noise:	69.6	68.7	65.5	60.9	69.4	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	123	265	571
CNEL:	61	132	284	612

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: Main Street to San Carlo

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,657 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,199 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.47	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.72	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.6	64.9	58.8	67.4	68.0
Medium Trucks:	61.4	60.8	54.4	52.9	61.3	61.6
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	69.5	68.6	65.5	60.8	69.3	69.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	121	262	564
CNEL:	60	130	281	605

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: Alton Parkway to San Leon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,733 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.44	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.76	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.6	63.8	57.8	66.4	67.0
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5
Heavy Trucks:	61.2	60.7	51.6	52.9	61.2	61.4
Vehicle Noise:	68.5	67.6	64.4	59.8	68.3	68.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	104	223	481
CNEL:	52	111	239	516

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: San Juan to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,509 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,692 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.33	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.91	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.86	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.5	65.5	63.7	57.7	66.3	66.9	
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4	
Heavy Trucks:	61.1	60.6	51.5	52.8	61.1	61.3	
Vehicle Noise:	68.4	67.5	64.3	59.6	68.2	68.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	102	220	473
CNEL:	51	109	236	508

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: San Leon to San Juan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,160 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,663 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.94	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.4	63.6	57.6	66.2	66.8
Medium Trucks:	60.2	59.6	53.2	51.7	60.1	60.3
Heavy Trucks:	61.1	60.5	51.4	52.7	61.1	61.2
Vehicle Noise:	68.3	67.4	64.3	59.6	68.1	68.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	101	217	468
CNEL:	50	108	233	502

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,559 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,284 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.87	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.06	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.3	64.3	62.5	56.5	65.1	65.7
Medium Trucks:	59.1	58.4	52.1	50.5	59.0	59.2
Heavy Trucks:	59.9	59.4	50.3	51.6	59.9	60.1
Vehicle Noise:	67.2	66.3	63.1	58.4	67.0	67.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	85	183	394
CNEL:	42	91	196	422

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: Deerfield Avenue to Poplar Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,473 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,277 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.89	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.08	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.3	64.3	62.5	56.4	65.1	65.7
Medium Trucks:	59.1	58.4	52.0	50.5	59.0	59.2
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0
Vehicle Noise:	67.2	66.3	63.1	58.4	67.0	67.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	85	182	392
CNEL:	42	91	195	421



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,075 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,409 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.46	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.70	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.66	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.8	64.7	62.9	56.9	65.5	66.1
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6
Heavy Trucks:	60.3	59.8	50.7	52.0	60.3	60.5
Vehicle Noise:	67.6	66.7	63.5	58.9	67.4	67.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	90	194	419
CNEL:	45	97	209	449

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: Bridge Road to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,962 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,317 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.76	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.99	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.95	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.5	64.4	62.6	56.6	65.2	65.8
Medium Trucks:	59.2	58.5	52.2	50.6	59.1	59.3
Heavy Trucks:	60.1	59.5	50.4	51.7	60.0	60.2
Vehicle Noise:	67.3	66.4	63.2	58.6	67.1	67.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	86	186	401
CNEL:	43	93	199	430

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: Paseo Westpark to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,630 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,372 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.58	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.82	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.77	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.6	62.8	56.8	65.4	66.0
Medium Trucks:	59.4	58.7	52.4	50.8	59.3	59.5
Heavy Trucks:	60.2	59.6	50.6	51.9	60.2	60.3
Vehicle Noise:	67.5	66.6	63.4	58.7	67.3	67.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	89	191	412
CNEL:	44	95	205	442

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: Poplar Street to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,344 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,101 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.53	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	79.45	-18.77	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	84.25	-22.73	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.6	63.8	57.8	66.4	67.0
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5
Heavy Trucks:	61.2	60.6	51.6	52.9	61.2	61.3
Vehicle Noise:	68.5	67.6	64.4	59.7	68.3	68.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	83	178	384
CNEL:	41	89	191	412

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: California Avenue to Berkeley Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	14,000 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	1,155 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.33	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.52	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.9	63.8	62.1	56.0	64.6	65.2	
Medium Trucks:	58.6	58.0	51.6	50.1	58.5	58.8	
Heavy Trucks:	59.5	58.9	49.9	51.1	59.5	59.6	
Vehicle Noise:	66.7	65.8	62.7	58.0	66.5	67.0	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	170	367
CNEL:	39	85	183	394

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: Culver Drive to California Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,746 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,134 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.40	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.64	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.60	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.8	63.7	62.0	55.9	64.5	65.2
Medium Trucks:	58.6	57.9	51.5	50.0	58.5	58.7
Heavy Trucks:	59.4	58.8	49.8	51.0	59.4	59.5
Vehicle Noise:	66.6	65.7	62.6	57.9	66.5	66.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	168	363
CNEL:	39	84	181	389

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: Berkeley to Bridge Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,010 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,156 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.52	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	63.8	62.1	56.0	64.6	65.2
Medium Trucks:	58.7	58.0	51.6	50.1	58.5	58.8
Heavy Trucks:	59.5	58.9	49.9	51.1	59.5	59.6
Vehicle Noise:	66.7	65.8	62.7	58.0	66.5	67.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	170	367
CNEL:	39	85	183	394

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: Warner Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,408 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,106 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.51	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.75	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.71	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.7	63.6	61.9	55.8	64.4	65.0
Medium Trucks:	58.5	57.8	51.4	49.9	58.3	58.6
Heavy Trucks:	59.3	58.7	49.7	50.9	59.3	59.4
Vehicle Noise:	66.5	65.6	62.5	57.8	66.3	66.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	166	357
CNEL:	38	82	178	383



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Hicks Canyon Drive  
 Road Segment: Delamesa to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,310 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	191 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	50.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 42.814				
Road Grade:	0.0%	Medium Trucks: 42.720				
Left View:	-90.0 degrees	Heavy Trucks: 42.814				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-8.06	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	75.75	-25.30	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	81.57	-29.25	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.0	54.9	53.1	47.1	55.7	56.3
Medium Trucks:	50.2	49.5	43.1	41.6	50.1	50.3
Heavy Trucks:	52.0	51.4	42.4	43.6	52.0	52.1
Vehicle Noise:	58.2	57.3	53.9	49.5	58.0	58.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	79
CNEL:	8	18	39	85

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Hornet (5th St)  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,316 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 274 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-5.03	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-22.27	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-26.22	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	54.3	53.3	51.5	45.5	54.1	54.7	
Medium Trucks:	49.2	48.5	42.1	40.6	49.1	49.3	
Heavy Trucks:	52.4	51.8	42.8	44.0	52.4	52.5	
Vehicle Noise:	57.2	56.4	52.5	48.6	57.1	57.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	11	24	52
CNEL:	5	12	25	55

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Hubble  
 Road Segment: Irvine Center Drive to Bunsen

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,224 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	183 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-6.76	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-24.00	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-27.96	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	52.6	51.5	49.8	43.7	52.3	52.9	
Medium Trucks:	47.4	46.8	40.4	38.9	47.3	47.6	
Heavy Trucks:	50.7	50.1	41.0	42.3	50.6	50.8	
Vehicle Noise:	55.5	54.7	50.7	46.8	55.3	55.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	18	39
CNEL:	4	9	19	42

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: SR-133 NB Off- Ramp to Ridge Valley (O Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 42,105 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,474 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">VehicleType</th> <th style="text-align: center;">Day</th> <th style="text-align: center;">Evening</th> <th style="text-align: center;">Night</th> <th style="text-align: center;">Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td style="text-align: center;">77.5%</td> <td style="text-align: center;">12.9%</td> <td style="text-align: center;">9.6%</td> <td style="text-align: center;">97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td style="text-align: center;">84.8%</td> <td style="text-align: center;">4.9%</td> <td style="text-align: center;">10.3%</td> <td style="text-align: center;">1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td style="text-align: center;">86.5%</td> <td style="text-align: center;">2.7%</td> <td style="text-align: center;">10.8%</td> <td style="text-align: center;">0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.59	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.65	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.61	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	69.4	67.6	61.6	70.2	70.8
Medium Trucks:	63.9	63.2	56.8	55.3	63.7	64.0
Heavy Trucks:	63.9	63.3	54.3	55.5	63.9	64.0
Vehicle Noise:	72.0	71.1	68.2	63.3	71.8	72.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	111	240	518	1,115
CNEL:	120	258	557	1,200

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: SR-133 SB Off-Ramp to SR-133 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 41,055 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,387 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.48	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.76	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.72	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	69.3	67.5	61.5	70.1	70.7
Medium Trucks:	63.7	63.1	56.7	55.2	63.6	63.9
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9
Vehicle Noise:	71.9	71.0	68.1	63.2	71.7	72.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	236	509	1,096
CNEL:	118	254	547	1,179

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Sand Canyon to SR-133 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,675 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,768 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.94	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.30	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.26	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.2	70.2	68.4	62.3	71.0	71.6
Medium Trucks:	64.6	63.9	57.6	56.0	64.5	64.7
Heavy Trucks:	64.7	64.1	55.0	56.3	64.6	64.8
Vehicle Noise:	72.8	71.9	68.9	64.1	72.6	73.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	119	257	554	1,194
CNEL:	128	277	596	1,285

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Merit to Alton

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,805 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,954 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.88	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.36	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.31	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	66.9	60.9	69.5	70.1
Medium Trucks:	63.2	62.5	56.1	54.6	63.0	63.3
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3
Vehicle Noise:	71.3	70.4	67.5	62.6	71.1	71.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	465	1,001
CNEL:	108	232	500	1,077

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Journey to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 35,910 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,963 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.89	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.34	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.30	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	66.9	60.9	69.5	70.1
Medium Trucks:	63.2	62.5	56.1	54.6	63.0	63.3
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3
Vehicle Noise:	71.4	70.4	67.5	62.6	71.2	71.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	465	1,003
CNEL:	108	232	501	1,079



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Ridge Valley (O Street) to Bosque (LY Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,235 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,659 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.43	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.81	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.77	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.3	68.2	66.5	60.4	69.0	69.7	
Medium Trucks:	62.7	62.0	55.7	54.1	62.6	62.8	
Heavy Trucks:	62.7	62.1	53.1	54.4	62.7	62.8	
Vehicle Noise:	70.9	70.0	67.0	62.1	70.7	71.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	201	433	933
CNEL:	100	216	466	1,004

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Pusan Way to Chinon (B Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,080 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,564 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.27	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.97	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.93	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.1	66.3	60.3	68.9	69.5
Medium Trucks:	62.5	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	62.6	62.0	52.9	54.2	62.6	62.7
Vehicle Noise:	70.7	69.8	66.8	62.0	70.5	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	196	423	911
CNEL:	98	211	455	980

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Palo Lado to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,118 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,320 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.83	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.41	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.36	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.7	65.9	59.8	68.5	69.1
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2
Heavy Trucks:	62.1	61.6	52.5	53.8	62.1	62.2
Vehicle Noise:	70.3	69.4	66.4	61.5	70.1	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	184	395	852
CNEL:	92	197	425	916

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Culver Drive to Palo Lado

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,495 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,351 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.89	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.35	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.30	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.2	61.5	55.1	53.6	62.0	62.3
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	70.4	69.4	66.5	61.6	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	399	859
CNEL:	92	199	429	925

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: SR-261 SB Off-Ramp to SR-261 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,294 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,334 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.86	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.38	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.34	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.7	65.9	59.9	68.5	69.1	
Medium Trucks:	62.1	61.5	55.1	53.6	62.0	62.2	
Heavy Trucks:	62.2	61.6	52.5	53.8	62.1	62.3	
Vehicle Noise:	70.3	69.4	66.4	61.6	70.1	70.6	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	184	397	855
CNEL:	92	198	427	920

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Old Myford Road to Market Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,891 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,301 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.80	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.44	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.40	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.9	59.8	68.4	69.0
Medium Trucks:	62.1	61.4	55.0	53.5	62.0	62.2
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	70.3	69.3	66.4	61.5	70.1	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	183	393	847
CNEL:	91	196	423	912

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Bosque (LY Street) to Modjeska

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,773 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,374 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.93	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.31	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.26	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.8	66.0	59.9	68.6	69.2
Medium Trucks:	62.2	61.5	55.2	53.6	62.1	62.3
Heavy Trucks:	62.2	61.7	52.6	53.9	62.2	62.3
Vehicle Noise:	70.4	69.5	66.5	61.6	70.2	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	186	402	865
CNEL:	93	200	432	931

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Jamboree Road to Old Myford Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,513 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,270 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.74	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.50	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.46	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.6	67.6	65.8	59.7	68.4	69.0	
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1	
Heavy Trucks:	62.0	61.5	52.4	53.7	62.0	62.2	
Vehicle Noise:	70.2	69.3	66.3	61.4	70.0	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	390	840
CNEL:	90	195	419	903



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Market Place to SR-261 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,325 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,254 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.49	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	68.9
Medium Trucks:	62.0	61.3	54.9	53.4	61.9	62.1
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	70.2	69.2	66.3	61.4	70.0	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	180	388	836
CNEL:	90	194	417	899

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Jeffrey Road to Groveland

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,715 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,451 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.07	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.17	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.12	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.0	67.9	66.1	60.1	68.7	69.3	
Medium Trucks:	62.3	61.7	55.3	53.8	62.2	62.5	
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5	
Vehicle Noise:	70.5	69.6	66.7	61.8	70.3	70.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	190	410	884
CNEL:	95	205	441	951

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Bake Parkway to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 30,011 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,476 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.11	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.12	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.08	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	67.9	66.2	60.1	68.7	69.3
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	70.6	69.6	66.7	61.8	70.4	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	192	413	890
CNEL:	96	206	444	957

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan Project Name: Irvine GP  
 Road Name: Irvine Boulevard Job Number: 15937  
 Road Segment: Independence Way (The Groves)/The Groves to Jeffrey Road

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,709 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,286 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.77	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.47	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.43	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.0	61.4	55.0	53.5	61.9	62.2
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	70.2	69.3	66.3	61.5	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	182	392	844
CNEL:	91	196	421	908

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Chinon (B Street) to Merit

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,405 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,261 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.72	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.52	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.47	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	68.9
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.0	61.4	52.4	53.7	62.0	62.1
Vehicle Noise:	70.2	69.3	66.3	61.4	70.0	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	180	389	837
CNEL:	90	194	418	901

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: SR-261 NB Off-Ramp to Central Park

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,097 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,153 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.51	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.73	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.69	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	61.8	61.1	54.7	53.2	61.7	61.9
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	70.0	69.0	66.1	61.2	69.8	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	175	376	811
CNEL:	87	188	405	872

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan	Project Name: Irvine GP
Road Name: Irvine Boulevard	Job Number: 15937
Road Segment: Pueblo Norte to Independence Way (The Groves)/ Parkwood	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,190 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 2,078 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 55 mph																					
Near/Far Lane Distance: 78 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 84.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 84.0 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 74.458																				
Left View: -90.0 degrees	Medium Trucks: 74.404																				
Right View: 90.0 degrees	Heavy Trucks: 74.458																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.35	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.88	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.84	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.2	65.4	59.4	68.0	68.6
Medium Trucks:	61.6	61.0	54.6	53.0	61.5	61.7
Heavy Trucks:	61.7	61.1	52.0	53.3	61.6	61.8
Vehicle Noise:	69.8	68.9	65.9	61.1	69.6	70.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	171	367	792
CNEL:	85	183	395	852

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Yale Avenue to Pueblo Norte

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,057 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,067 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.33	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.91	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.86	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	67.2	65.4	59.3	68.0	68.6	
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7	
Heavy Trucks:	61.6	61.0	52.0	53.3	61.6	61.7	
Vehicle Noise:	69.8	68.9	65.9	61.0	69.6	70.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	170	366	789
CNEL:	85	183	394	849



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Modjeska to Pusan Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,040 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,148 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.50	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.74	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.70	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.3	65.6	59.5	68.1	68.7	
Medium Trucks:	61.8	61.1	54.7	53.2	61.7	61.9	
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9	
Vehicle Noise:	70.0	69.0	66.1	61.2	69.8	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	376	809
CNEL:	87	188	404	871

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Central Park Avenue to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,685 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,871 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.10	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.34	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.29	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	66.7	65.0	58.9	67.5	68.1	
Medium Trucks:	61.2	60.5	54.1	52.6	61.1	61.3	
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3	
Vehicle Noise:	69.4	68.4	65.5	60.6	69.2	69.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	343	738
CNEL:	79	171	369	794

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Parker to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,409 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,849 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.39	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.35	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.7	64.9	58.8	67.5	68.1
Medium Trucks:	61.1	60.4	54.1	52.5	61.0	61.2
Heavy Trucks:	61.2	60.6	51.5	52.8	61.1	61.3
Vehicle Noise:	69.3	68.4	65.4	60.6	69.1	69.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	158	340	732
CNEL:	79	170	366	788

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Alton Parkway to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,955 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,481 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-18.35	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-22.31	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.2	59.5	53.1	51.6	60.0	60.3
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3
Vehicle Noise:	68.3	67.4	64.5	59.6	68.1	68.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	293	632
CNEL:	68	146	315	680

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan Project Name: Irvine GP  
 Road Name: Irvine Center Drive Job Number: 15937  
 Road Segment: Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 51,275 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,230 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.86	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.38	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.34	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	69.5	67.7	61.7	70.3	70.9
Medium Trucks:	64.1	63.5	57.1	55.6	64.0	64.2
Heavy Trucks:	64.6	64.0	54.9	56.2	64.5	64.7
Vehicle Noise:	72.3	71.3	68.3	63.5	72.1	72.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	237	510	1,099
CNEL:	118	254	548	1,181

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Orange Tree to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 43,698 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,605 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.16	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.08	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.03	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.5	68.4	66.6	60.6	69.2	69.8
Medium Trucks:	63.0	62.4	56.0	54.5	62.9	63.1
Heavy Trucks:	63.4	62.9	53.8	55.1	63.4	63.6
Vehicle Noise:	71.2	70.2	67.2	62.4	71.0	71.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	210	452	974
CNEL:	105	225	486	1,046

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: I-405 SB Off-Ramp to Research

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 46,454 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,832 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.43	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.81	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.77	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.1	67.3	61.3	69.9	70.5
Medium Trucks:	63.7	63.0	56.7	55.1	63.6	63.8
Heavy Trucks:	64.1	63.5	54.5	55.8	64.1	64.2
Vehicle Noise:	71.8	70.9	67.9	63.1	71.6	72.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	103	222	478	1,029
CNEL:	111	238	513	1,106

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Irvine Valley College to Orange Tree

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 42,382 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,496 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.21	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.17	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.3	66.5	60.5	69.1	69.7
Medium Trucks:	62.9	62.2	55.9	54.3	62.8	63.0
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4
Vehicle Noise:	71.0	70.1	67.1	62.3	70.8	71.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	95	206	443	954
CNEL:	103	221	476	1,025



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Fontaine Avenue to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,987 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,299 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.78	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.46	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.42	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.3	60.2	68.8	69.4
Medium Trucks:	62.6	62.0	55.6	54.1	62.5	62.8
Heavy Trucks:	63.1	62.5	53.4	54.7	63.0	63.2
Vehicle Noise:	70.8	69.9	66.8	62.0	70.6	71.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	426	918
CNEL:	99	212	458	986

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Culver Drive to Deerwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,661 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,272 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.74	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.50	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.45	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	68.0	66.2	60.2	68.8	69.4
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	63.0	62.4	53.4	54.7	63.0	63.1
Vehicle Noise:	70.7	69.8	66.8	62.0	70.5	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	197	424	913
CNEL:	98	211	455	981

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Deerwood to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,150 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,230 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.68	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.56	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.51	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	67.9	66.2	60.1	68.7	69.3
Medium Trucks:	62.6	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	63.0	62.4	53.3	54.6	63.0	63.1
Vehicle Noise:	70.7	69.8	66.7	61.9	70.5	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	195	420	905
CNEL:	97	210	451	972

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Yale Avenue to Fontaine Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 38,813 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,202 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.65	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.59	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.55	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	67.9	66.1	60.1	68.7	69.3
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6
Heavy Trucks:	62.9	62.3	53.3	54.6	62.9	63.0
Vehicle Noise:	70.6	69.7	66.7	61.9	70.4	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	194	418	900
CNEL:	97	208	449	967

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Jeffrey Road to Irvine Valley College

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,074 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,306 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.78	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.45	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.41	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.1	68.0	66.3	60.2	68.8	69.4	
Medium Trucks:	62.7	62.0	55.6	54.1	62.5	62.8	
Heavy Trucks:	63.1	62.5	53.4	54.7	63.1	63.2	
Vehicle Noise:	70.8	69.9	66.8	62.0	70.6	71.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	427	919
CNEL:	99	213	458	988

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Alton Parkway to Spectrum

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,648 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,858 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.04	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.6	59.6	68.2	68.8
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.4	61.9	52.8	54.1	62.4	62.5
Vehicle Noise:	70.2	69.2	66.2	61.4	70.0	70.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	180	387	834
CNEL:	90	193	416	896

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Spectrum to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,982 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,803 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.07	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.17	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.13	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.1
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5
Vehicle Noise:	70.1	69.2	66.1	61.3	69.9	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	382	824
CNEL:	88	191	411	885

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Hearthstone to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,389 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,002 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.37	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.87	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.83	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.2	61.6	55.2	53.7	62.1	62.3
Heavy Trucks:	62.7	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	70.4	69.4	66.4	61.6	70.2	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	186	400	862
CNEL:	93	200	430	926



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Charter to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,888 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,713 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.93	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.31	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.27	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	67.2	65.4	59.3	68.0	68.6	
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9	
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3	
Vehicle Noise:	69.9	69.0	66.0	61.2	69.7	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	374	806
CNEL:	87	187	402	866

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Jamboree Road to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,538 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,767 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.01	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.23	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.18	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.3	65.5	59.4	68.1	68.7
Medium Trucks:	61.9	61.2	54.8	53.3	61.8	62.0
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	176	379	816
CNEL:	88	189	407	877

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Pacifica to Entertainment (Enterprise/Fortune)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,656 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,777 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.21	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.17	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.3	65.5	59.4	68.1	68.7	
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0	
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4	
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	176	380	818
CNEL:	88	189	408	879

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,525 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,601 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.74	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.50	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.45	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	67.0	65.2	59.2	67.8	68.4
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7
Heavy Trucks:	62.0	61.4	52.4	53.7	62.0	62.1
Vehicle Noise:	69.7	68.8	65.8	61.0	69.5	70.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	169	364	783
CNEL:	84	181	391	842

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Harvard Avenue to Hearthstone

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,072 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,563 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.68	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.56	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.51	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.0	66.9	65.2	59.1	67.7	68.3	
Medium Trucks:	61.5	60.9	54.5	53.0	61.4	61.7	
Heavy Trucks:	62.0	61.4	52.3	53.6	61.9	62.1	
Vehicle Noise:	69.7	68.8	65.7	60.9	69.5	70.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	167	360	776
CNEL:	83	180	387	834

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Research to Hubble

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,150 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,487 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.55	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.69	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.65	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.8	65.0	59.0	67.6	68.2
Medium Trucks:	61.4	60.7	54.4	52.8	61.3	61.5
Heavy Trucks:	61.8	61.2	52.2	53.5	61.8	61.9
Vehicle Noise:	69.5	68.6	65.6	60.8	69.4	69.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	164	353	760
CNEL:	82	176	379	817

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Barranca Parkway to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,369 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,258 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.13	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.11	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.07	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.4	66.4	64.6	58.6	67.2	67.8	
Medium Trucks:	61.0	60.3	54.0	52.4	60.9	61.1	
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5	
Vehicle Noise:	69.1	68.2	65.2	60.4	68.9	69.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	154	331	713
CNEL:	77	165	356	766

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Bake Parkway to Muller

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,012 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,559 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.57	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.52	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	66.9	65.1	59.1	67.7	68.3
Medium Trucks:	61.5	60.9	54.5	53.0	61.4	61.7
Heavy Trucks:	62.0	61.4	52.3	53.6	61.9	62.1
Vehicle Noise:	69.7	68.8	65.7	60.9	69.5	69.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	167	360	775
CNEL:	83	179	386	833



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Discovery to Charter

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,747 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,207 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.21	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.17	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.3	64.5	58.5	67.1	67.7
Medium Trucks:	60.9	60.2	53.9	52.3	60.8	61.0
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4
Vehicle Noise:	69.0	68.1	65.1	60.3	68.8	69.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	151	326	702
CNEL:	75	163	350	754

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Hubble to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,424 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,427 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.44	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.80	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.75	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.7	64.9	58.9	67.5	68.1
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4
Heavy Trucks:	61.7	61.1	52.1	53.4	61.7	61.8
Vehicle Noise:	69.4	68.5	65.5	60.7	69.2	69.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	347	748
CNEL:	80	173	373	804

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Muller to Tesla

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,797 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,293 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.20	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.04	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.00	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.4	64.7	58.6	67.2	67.8
Medium Trucks:	61.1	60.4	54.0	52.5	60.9	61.2
Heavy Trucks:	61.5	60.9	51.9	53.1	61.5	61.6
Vehicle Noise:	69.2	68.3	65.2	60.5	69.0	69.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	72	155	334	720
CNEL:	77	167	359	774

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Sand Canyon Avenue to Odyssey

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,007 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,063 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.74	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.50	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.46	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	66.0	64.2	58.2	66.8	67.4
Medium Trucks:	60.6	59.9	53.6	52.0	60.5	60.7
Heavy Trucks:	61.0	60.4	51.4	52.7	61.0	61.1
Vehicle Noise:	68.7	67.8	64.8	60.0	68.5	69.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	145	312	671
CNEL:	72	155	335	721

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Tesla to Scientific Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,203 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,162 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.94	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.30	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.25	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.2	66.2	64.4	58.4	67.0	67.6	
Medium Trucks:	60.8	60.1	53.8	52.2	60.7	60.9	
Heavy Trucks:	61.2	60.6	51.6	52.9	61.2	61.3	
Vehicle Noise:	68.9	68.0	65.0	60.2	68.7	69.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	149	321	693
CNEL:	74	160	345	744

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Scientific Way to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,631 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,032 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.57	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.52	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	65.9	64.1	58.1	66.7	67.3
Medium Trucks:	60.5	59.9	53.5	52.0	60.4	60.7
Heavy Trucks:	61.0	60.4	51.3	52.6	60.9	61.1
Vehicle Noise:	68.7	67.8	64.7	59.9	68.5	68.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	143	308	665
CNEL:	71	154	331	714

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Gateway Boulevard to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,437 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,769 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.07	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.17	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.13	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	59.9	59.3	52.9	51.4	59.8	60.1
Heavy Trucks:	60.4	59.8	50.7	52.0	60.3	60.5
Vehicle Noise:	68.1	67.2	64.1	59.3	67.9	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	281	606
CNEL:	65	140	302	651

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Laguna Canyon Road to Discovery

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,659 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,704 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.09	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.33	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.29	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	65.2	63.4	57.3	66.0	66.6
Medium Trucks:	59.8	59.1	52.7	51.2	59.7	59.9
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3
Vehicle Noise:	67.9	67.0	63.9	59.2	67.7	68.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	274	591
CNEL:	64	137	295	635



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Odyssey to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,273 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,755 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.20	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.16	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	68.0	67.1	64.1	59.3	67.8	68.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	280	603
CNEL:	65	140	301	648

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Center Drive (Edinger)  
 Road Segment: Redhill Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,743 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,114 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.52	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.71	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.67	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.8	67.8	66.0	59.9	68.6	69.2	
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5	
Heavy Trucks:	62.8	62.2	53.2	54.4	62.8	62.9	
Vehicle Noise:	70.5	69.6	66.6	61.8	70.3	70.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	190	410	883
CNEL:	95	204	441	949

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: I-5 SB Off-Ramp to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 69,825 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,761 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.78	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-12.46	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-16.41	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.7	71.6	69.8	63.8	72.4	73.0
Medium Trucks:	66.1	65.4	59.0	57.5	65.9	66.2
Heavy Trucks:	66.1	65.5	56.5	57.7	66.1	66.2
Vehicle Noise:	74.2	73.3	70.4	65.5	74.0	74.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	156	337	725	1,562
CNEL:	168	362	780	1,681

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 77,890 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 6,426 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.26	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-11.98	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-15.94	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.6	72.5	70.7	64.7	73.3	73.9
Medium Trucks:	66.9	66.3	59.9	58.4	66.8	67.1
Heavy Trucks:	67.0	66.4	57.3	58.6	67.0	67.1
Vehicle Noise:	75.1	74.2	71.2	66.4	74.9	75.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	170	367	791	1,704
CNEL:	183	395	851	1,833

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Walnut Avenue to Michelle Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 59,833 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,936 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.11	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.13	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.08	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.0	70.9	69.2	63.1	71.7	72.3
Medium Trucks:	65.4	64.7	58.4	56.8	65.3	65.5
Heavy Trucks:	65.4	64.8	55.8	57.0	65.4	65.5
Vehicle Noise:	73.6	72.6	69.7	64.8	73.4	73.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	141	304	654	1,409
CNEL:	152	327	704	1,516

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: I-405 NB Off-Ramp to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 79,710 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 6,576 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 56.593				
Road Grade: 0.0%	Medium Trucks: 56.522				
Left View: -90.0 degrees	Heavy Trucks: 56.593				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.36	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-11.88	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-15.84	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	75.0	74.0	72.2	66.1	74.8	75.4
Medium Trucks:	68.4	67.7	61.4	59.8	68.3	68.5
Heavy Trucks:	68.4	67.9	58.8	60.1	68.4	68.6
Vehicle Noise:	76.6	75.7	72.7	67.9	76.4	76.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	267	576	1,241	2,673
CNEL:	288	619	1,335	2,875

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Michelle Drive to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 56,450 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,657 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.86	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.38	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.34	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.7	70.7	68.9	62.9	71.5	72.1	
Medium Trucks:	65.1	64.5	58.1	56.6	65.0	65.2	
Heavy Trucks:	65.2	64.6	55.5	56.8	65.1	65.3	
Vehicle Noise:	73.3	72.4	69.4	64.6	73.1	73.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	136	292	629	1,356
CNEL:	146	314	677	1,458

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Main Street to Kelvin Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 67,444 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,564 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.63	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.61	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.56	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.3	73.2	71.5	65.4	74.0	74.6
Medium Trucks:	67.7	67.0	60.7	59.1	67.6	67.8
Heavy Trucks:	67.7	67.1	58.1	59.4	67.7	67.8
Vehicle Noise:	75.9	75.0	72.0	67.1	75.7	76.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	239	515	1,110	2,391
CNEL:	257	554	1,194	2,572



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 84,006 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 6,931 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 130 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 88.792 Medium Trucks: 88.747 Heavy Trucks: 88.792																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.59	-3.84	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-11.65	-3.84	-1.20	-4.96	0.000	0.000
Heavy Trucks:	86.40	-15.61	-3.84	-1.20	-5.14	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.3	71.3	69.5	63.4	72.1	72.7
Medium Trucks:	65.7	65.0	58.7	57.1	65.6	65.8
Heavy Trucks:	65.7	65.2	56.1	57.4	65.7	65.9
Vehicle Noise:	73.9	73.0	70.0	65.1	73.7	74.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	194	418	901	1,940
CNEL:	209	450	969	2,088

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Kelvin Avenue to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 62,646 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,168 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.31	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.93	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.88	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.0	72.9	71.2	65.1	73.7	74.3
Medium Trucks:	67.4	66.7	60.3	58.8	67.3	67.5
Heavy Trucks:	67.4	66.8	57.8	59.0	67.4	67.5
Vehicle Noise:	75.6	74.6	71.7	66.8	75.4	75.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	228	490	1,057	2,276
CNEL:	245	528	1,137	2,449

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 61,804 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,099 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.25	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.99	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.94	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.9	72.9	71.1	65.0	73.7	74.3	
Medium Trucks:	67.3	66.6	60.3	58.7	67.2	67.4	
Heavy Trucks:	67.3	66.8	57.7	59.0	67.3	67.5	
Vehicle Noise:	75.5	74.6	71.6	66.7	75.3	75.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	226	486	1,047	2,256
CNEL:	243	523	1,126	2,427

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Birch Street to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,836 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,699 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.86	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.38	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.34	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.7	69.7	67.9	61.9	70.5	71.1	
Medium Trucks:	64.1	63.5	57.1	55.6	64.0	64.2	
Heavy Trucks:	64.2	63.6	54.5	55.8	64.1	64.3	
Vehicle Noise:	72.3	71.4	68.4	63.6	72.1	72.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	116	250	540	1,163
CNEL:	125	269	581	1,251

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Dupont Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 50,671 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,180 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.39	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.85	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.80	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.7	70.6	68.9	62.8	71.4	72.0
Medium Trucks:	65.1	64.4	58.0	56.5	65.0	65.2
Heavy Trucks:	65.1	64.5	55.5	56.7	65.1	65.2
Vehicle Noise:	73.3	72.3	69.4	64.5	73.1	73.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	128	276	594	1,280
CNEL:	138	297	639	1,377

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Alton Parkway to Beckman

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 56,746 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,682 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.88	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.36	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.31	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.6	72.5	70.7	64.7	73.3	73.9
Medium Trucks:	66.9	66.3	59.9	58.4	66.8	67.1
Heavy Trucks:	67.0	66.4	57.4	58.6	67.0	67.1
Vehicle Noise:	75.1	74.2	71.2	66.4	74.9	75.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	213	459	989	2,131
CNEL:	229	494	1,064	2,293

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Fairchild Road to Birch Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 46,728 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,855 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.04	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.20	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.16	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.3	70.3	68.5	62.4	71.1	71.7
Medium Trucks:	64.7	64.0	57.7	56.1	64.6	64.8
Heavy Trucks:	64.8	64.2	55.1	56.4	64.7	64.9
Vehicle Noise:	72.9	72.0	69.0	64.2	72.7	73.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	261	563	1,212
CNEL:	130	281	605	1,304

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Beckman to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 53,974 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,453 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.66	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.57	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.53	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.3	72.3	70.5	64.5	73.1	73.7
Medium Trucks:	66.7	66.1	59.7	58.1	66.6	66.8
Heavy Trucks:	66.8	66.2	57.1	58.4	66.7	66.9
Vehicle Noise:	74.9	74.0	71.0	66.2	74.7	75.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	206	444	957	2,061
CNEL:	222	478	1,029	2,217



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: I-5 NB Off-Ramp to El Camino Real

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 52,710 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,349 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.56	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.68	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.63	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.2	72.2	70.4	64.3	73.0	73.6
Medium Trucks:	66.6	66.0	59.6	58.0	66.5	66.7
Heavy Trucks:	66.7	66.1	57.0	58.3	66.6	66.8
Vehicle Noise:	74.8	73.9	70.9	66.1	74.6	75.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	203	437	942	2,029
CNEL:	218	470	1,013	2,182

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Campus Drive to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 42,224 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,483 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.60	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.64	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.60	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.9	69.8	68.1	62.0	70.6	71.2	
Medium Trucks:	64.3	63.6	57.2	55.7	64.2	64.4	
Heavy Trucks:	64.3	63.7	54.7	55.9	64.3	64.4	
Vehicle Noise:	72.5	71.5	68.6	63.7	72.3	72.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	244	526	1,133
CNEL:	122	263	566	1,219

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: El Camino Real to West Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 52,735 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,351 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.56	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.68	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.63	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.2	72.2	70.4	64.3	73.0	73.6
Medium Trucks:	66.6	66.0	59.6	58.0	66.5	66.7
Heavy Trucks:	66.7	66.1	57.0	58.3	66.6	66.8
Vehicle Noise:	74.8	73.9	70.9	66.1	74.6	75.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	203	437	942	2,029
CNEL:	218	470	1,013	2,183

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: West Drive to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 52,526 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,333 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.55	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.69	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.65	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.2	72.2	70.4	64.3	73.0	73.6
Medium Trucks:	66.6	65.9	59.6	58.0	66.5	66.7
Heavy Trucks:	66.6	66.1	57.0	58.3	66.6	66.7
Vehicle Noise:	74.8	73.9	70.9	66.0	74.6	75.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	202	436	939	2,024
CNEL:	218	469	1,011	2,177

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Bryan Avenue to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 49,213 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,060 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.26	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.98	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.93	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.9	71.9	70.1	64.0	72.7	73.3	
Medium Trucks:	66.3	65.7	59.3	57.7	66.2	66.4	
Heavy Trucks:	66.4	65.8	56.7	58.0	66.3	66.5	
Vehicle Noise:	74.5	73.6	70.6	65.8	74.3	74.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	194	418	900	1,938
CNEL:	208	449	968	2,085

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Koll Center to Fairchild Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,496 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,258 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.31	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.93	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.89	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	69.5	67.8	61.7	70.3	70.9
Medium Trucks:	64.0	63.3	57.0	55.4	63.9	64.1
Heavy Trucks:	64.0	63.4	54.4	55.6	64.0	64.1
Vehicle Noise:	72.2	71.3	68.3	63.4	72.0	72.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	108	233	503	1,084
CNEL:	117	251	541	1,166

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: MacArthur Boulevard to Koll Center

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,695 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,275 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.33	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.91	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.86	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	69.6	67.8	61.7	70.4	71.0
Medium Trucks:	64.0	63.3	57.0	55.4	63.9	64.1
Heavy Trucks:	64.0	63.5	54.4	55.7	64.0	64.2
Vehicle Noise:	72.2	71.3	68.3	63.4	72.0	72.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	109	234	505	1,087
CNEL:	117	252	543	1,170

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Irvine Boulevard to Portola Pakway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,887 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,466 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.10	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.14	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.10	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	67.9	66.2	60.1	68.7	69.3
Medium Trucks:	62.4	61.7	55.3	53.8	62.3	62.5
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	70.6	69.6	66.7	61.8	70.4	70.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	191	412	887
CNEL:	95	206	443	954



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Warner Avenue to Edinger Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 85,506 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 7,054 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 96 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 64.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 64.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 42.438				
Road Grade: 0.0%		Medium Trucks: 42.344				
Left View: -90.0 degrees		Heavy Trucks: 42.439				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.66	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-11.58	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-15.53	0.96	-1.20	-5.31	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	77.2	76.1	74.4	68.3	76.9	77.6
Medium Trucks:	70.6	69.9	63.6	62.0	70.5	70.7
Heavy Trucks:	70.6	70.0	61.0	62.3	70.6	70.7
Vehicle Noise:	78.8	77.9	74.9	70.0	78.6	79.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	239	515	1,110	2,391
CNEL:	257	554	1,194	2,572

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 70,769 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,838 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 96 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.438 Medium Trucks: 42.344 Heavy Trucks: 42.439																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.84	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-12.40	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-16.35	0.96	-1.20	-5.31	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.4	75.3	73.6	67.5	76.1	76.7
Medium Trucks:	69.8	69.1	62.8	61.2	69.7	69.9
Heavy Trucks:	69.8	69.2	60.2	61.4	69.8	69.9
Vehicle Noise:	78.0	77.0	74.1	69.2	77.8	78.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	211	454	978	2,107
CNEL:	227	488	1,052	2,267

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Edinger Avenue to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 66,189 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,461 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 96 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 64.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 64.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 42.438				
Road Grade: 0.0%		Medium Trucks: 42.344				
Left View: -90.0 degrees		Heavy Trucks: 42.439				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.55	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-12.69	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-16.64	0.96	-1.20	-5.31	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.1	75.0	73.3	67.2	75.8	76.4
Medium Trucks:	69.5	68.8	62.5	60.9	69.4	69.6
Heavy Trucks:	69.5	68.9	59.9	61.1	69.5	69.6
Vehicle Noise:	77.7	76.7	73.8	68.9	77.5	77.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	202	434	936	2,016
CNEL:	217	467	1,006	2,168

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jeffrey Road  
 Road Segment: Walnut Avenue to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 54,962 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,534 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.61	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.62	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.58	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.1	66.3	60.3	68.9	69.5
Medium Trucks:	62.9	62.3	55.9	54.4	62.8	63.0
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9
Vehicle Noise:	71.0	70.1	67.0	62.3	70.8	71.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	95	205	442	953
CNEL:	102	220	474	1,022

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jeffrey Road  
 Road Segment: I-5 NB Off-Ramp to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 62,169 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,129 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	5.15	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.09	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.04	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.1	67.3	61.2	69.9	70.5
Medium Trucks:	63.9	63.2	56.8	55.3	63.8	64.0
Heavy Trucks:	64.7	64.1	55.1	56.3	64.7	64.8
Vehicle Noise:	72.0	71.1	67.9	63.2	71.8	72.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	105	226	487	1,049
CNEL:	113	242	522	1,125

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jeffrey Road  
 Road Segment: Poplar (Meadows) to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 49,562 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,089 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.17	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.07	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.03	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.7	65.9	59.8	68.5	69.1	
Medium Trucks:	62.5	61.8	55.4	53.9	62.4	62.6	
Heavy Trucks:	63.3	62.7	53.7	55.0	63.3	63.4	
Vehicle Noise:	70.6	69.7	66.5	61.8	70.4	70.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	192	413	889
CNEL:	95	205	443	954

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jeffrey Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,090 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,802 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.85	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.39	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.34	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.2	68.8
Medium Trucks:	62.2	61.5	55.1	53.6	62.0	62.3
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	70.2	69.3	66.2	61.5	70.1	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	183	393	847
CNEL:	91	196	422	909

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Center Drive to Poplar (Meadows)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,470 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,916 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.98	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.26	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.22	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.5	65.7	59.7	68.3	68.9	
Medium Trucks:	62.3	61.6	55.3	53.7	62.2	62.4	
Heavy Trucks:	63.1	62.6	53.5	54.8	63.1	63.2	
Vehicle Noise:	70.4	69.5	66.3	61.6	70.2	70.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	186	401	864
CNEL:	93	200	430	927



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jeffrey Road  
 Road Segment: I-405 NB Off-Ramp to Quail Creek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,688 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,769 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.81	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.43	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.38	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	62.1	61.5	55.1	53.6	62.0	62.2
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	70.2	69.3	66.2	61.5	70.0	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	391	842
CNEL:	90	195	419	903

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jeffrey Road  
 Road Segment: Barranca Parkway to Irvine Valley College

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,426 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,748 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.79	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.45	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.41	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.3	65.5	59.5	68.1	68.7	
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2	
Heavy Trucks:	62.9	62.4	53.3	54.6	62.9	63.1	
Vehicle Noise:	70.2	69.3	66.1	61.4	70.0	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	389	839
CNEL:	90	194	418	900

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jeffrey Road  
 Road Segment: Quail Creek to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,819 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,780 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.82	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.41	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.37	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	62.1	61.5	55.1	53.6	62.0	62.3
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	70.2	69.3	66.2	61.5	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	182	392	844
CNEL:	91	195	420	905

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Valley College to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 43,854 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,618 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.63	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.60	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.56	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	67.1	65.4	59.3	67.9	68.5	
Medium Trucks:	62.0	61.3	54.9	53.4	61.8	62.1	
Heavy Trucks:	62.8	62.2	53.2	54.4	62.8	62.9	
Vehicle Noise:	70.0	69.1	66.0	61.3	69.8	70.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	380	819
CNEL:	88	189	408	879

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jeffrey Road  
 Road Segment: Trabuco Road to Hideaway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 38,135 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,146 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.21	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.17	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.5	64.8	58.7	67.3	67.9
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	69.4	68.5	65.4	60.7	69.2	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	347	747
CNEL:	80	173	372	801

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jeffrey Road  
 Road Segment: Hideaway to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 38,018 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,136 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.01	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.22	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.18	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.5	64.7	58.7	67.3	67.9
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.4
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	69.4	68.5	65.4	60.7	69.2	69.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	346	745
CNEL:	80	172	371	799

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jeffrey Road  
 Road Segment: Roosevelt to Grove

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 40,456 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,338 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.28	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.95	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.91	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.2	65.4	59.4	68.0	68.6
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.9	62.3	53.2	54.5	62.8	63.0
Vehicle Noise:	70.1	69.2	66.0	61.4	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	170	366	788
CNEL:	84	182	392	845

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jeffrey Road  
 Road Segment: Grove to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 40,151 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,312 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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Autos:	77.5%	12.9%	9.6%	97.42%																	
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	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.25	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.99	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.94	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.2	65.4	59.3	68.0	68.6
Medium Trucks:	62.0	61.3	54.9	53.4	61.9	62.1
Heavy Trucks:	62.8	62.2	53.2	54.4	62.8	62.9
Vehicle Noise:	70.1	69.2	66.0	61.3	69.9	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	169	364	784
CNEL:	84	181	390	841



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jeffrey Road  
 Road Segment: Bryan Avenue to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,995 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,392 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.84	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.40	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.36	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.3	63.6	57.5	66.1	66.7
Medium Trucks:	60.2	59.5	53.1	51.6	60.0	60.3
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1
Vehicle Noise:	68.2	67.3	64.2	59.5	68.0	68.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	134	289	622
CNEL:	67	144	310	667

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jeffrey Road  
 Road Segment: Encore to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,559 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,366 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.60	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-17.83	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-21.79	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.0	62.9	61.1	55.1	63.7	64.3
Medium Trucks:	57.7	57.0	50.7	49.1	57.6	57.8
Heavy Trucks:	58.6	58.0	48.9	50.2	58.5	58.7
Vehicle Noise:	65.8	64.9	61.7	57.1	65.6	66.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	92	199	428
CNEL:	46	99	213	459

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Boulevard to Encore

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,038 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,241 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.01	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-18.25	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-22.21	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.5	62.5	60.7	54.7	63.3	63.9
Medium Trucks:	57.3	56.6	50.3	48.7	57.2	57.4
Heavy Trucks:	58.1	57.6	48.5	49.8	58.1	58.3
Vehicle Noise:	65.4	64.5	61.3	56.6	65.2	65.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	86	186	401
CNEL:	43	93	200	431

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jeronimo Road  
 Road Segment: Goodyear to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,433 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	696 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.72	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.7	61.6	59.9	53.8	62.4	63.0
Medium Trucks:	56.4	55.8	49.4	47.9	56.3	56.6
Heavy Trucks:	57.3	56.7	47.7	48.9	57.3	57.4
Vehicle Noise:	64.5	63.6	60.5	55.8	64.3	64.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	56	122	262
CNEL:	28	60	130	281

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jeronimo Road  
 Road Segment: Alton Parkway to Goodyear

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,252 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	681 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.62	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.86	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.81	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.6	61.5	59.8	53.7	62.3	62.9
Medium Trucks:	56.4	55.7	49.3	47.8	56.2	56.5
Heavy Trucks:	57.2	56.6	47.6	48.8	57.2	57.3
Vehicle Noise:	64.4	63.5	60.4	55.7	64.2	64.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	56	120	258
CNEL:	28	60	128	277

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Laguna Canyon Road  
 Road Segment: Old Laguna Canyon Road to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 53,167 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,386 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.60	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.64	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.60	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.4	68.7	62.6	71.2	71.8
Medium Trucks:	64.9	64.2	57.8	56.3	64.8	65.0
Heavy Trucks:	64.9	64.3	55.3	56.5	64.9	65.0
Vehicle Noise:	73.1	72.1	69.2	64.3	72.9	73.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	130	281	605	1,303
CNEL:	140	302	650	1,401

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Laguna Canyon Road  
 Road Segment: Laguna Canyon Freeway to Quail Hill Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,794 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,385 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.41	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.64	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.60	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.1	67.1	65.3	59.2	67.9	68.5	
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6	
Heavy Trucks:	61.5	61.0	51.9	53.2	61.5	61.7	
Vehicle Noise:	69.7	68.8	65.8	61.0	69.5	70.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	269	579
CNEL:	62	134	289	623

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Laguna Canyon Road  
 Road Segment: Discovery to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,943 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 903 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-3.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-20.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-24.46	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.3	65.2	63.4	57.4	66.0	66.6	
Medium Trucks:	59.7	59.0	52.6	51.1	59.5	59.8	
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8	
Vehicle Noise:	67.8	66.9	64.0	59.1	67.6	68.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	94	202	435
CNEL:	47	101	217	468



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Laguna Canyon Road  
 Road Segment: I-405 Overcrossing to Pasteur

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,635 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 712 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.88	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-21.12	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.08	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.0	65.0	63.2	57.1	65.8	66.4	
Medium Trucks:	59.6	58.9	52.6	51.0	59.5	59.7	
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1	
Vehicle Noise:	67.7	66.8	63.8	59.0	67.5	68.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	342
CNEL:	37	79	171	368

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Laguna Canyon Road  
 Road Segment: Irvine Center Drive to Discovery

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,104 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 751 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-4.07	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-21.30	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-25.26	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.5	64.4	62.6	56.6	65.2	65.8	
Medium Trucks:	58.9	58.2	51.8	50.3	58.7	59.0	
Heavy Trucks:	58.9	58.3	49.3	50.5	58.9	59.0	
Vehicle Noise:	67.0	66.1	63.2	58.3	66.8	67.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	83	179	385
CNEL:	41	89	192	414

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Laguna Canyon Road  
 Road Segment: Quail Hill Parkway to I-405 Overcrossing

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,635 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 712 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
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	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.88	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-21.12	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.08	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	65.0	63.2	57.1	65.8	66.4
Medium Trucks:	59.6	58.9	52.6	51.0	59.5	59.7
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1
Vehicle Noise:	67.7	66.8	63.8	59.0	67.5	68.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	342
CNEL:	37	79	171	368

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Laguna Canyon Road  
 Road Segment: Pasteur to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,294 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	684 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-4.47	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-21.71	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-25.66	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.0	62.2	56.2	64.8	65.4
Medium Trucks:	58.5	57.8	51.4	49.9	58.3	58.6
Heavy Trucks:	58.5	57.9	48.9	50.1	58.5	58.6
Vehicle Noise:	66.6	65.7	62.8	57.9	66.4	66.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	168	362
CNEL:	39	84	181	389

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Laguna Canyon Road  
 Road Segment: Waterworks to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,050 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	582 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-5.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-22.41	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-26.37	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.3	61.5	55.5	64.1	64.7
Medium Trucks:	57.8	57.1	50.7	49.2	57.6	57.9
Heavy Trucks:	57.8	57.2	48.2	49.4	57.8	57.9
Vehicle Noise:	65.9	65.0	62.1	57.2	65.7	66.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	70	151	325
CNEL:	35	75	162	349

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Laguna Canyon Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,757 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 557 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-5.36	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-22.60	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-26.55	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.2	63.1	61.3	55.3	63.9	64.5	
Medium Trucks:	57.6	56.9	50.5	49.0	57.4	57.7	
Heavy Trucks:	57.6	57.0	48.0	49.2	57.6	57.7	
Vehicle Noise:	65.8	64.8	61.9	57.0	65.6	66.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	68	147	316
CNEL:	34	73	158	340

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Laguna Canyon Road  
 Road Segment: Barranca Parkway to Waterworks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,177 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 510 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-5.75	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-22.99	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-26.94	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.8	62.7	61.0	54.9	63.5	64.1	
Medium Trucks:	57.2	56.5	50.1	48.6	57.1	57.3	
Heavy Trucks:	57.2	56.6	47.6	48.8	57.2	57.3	
Vehicle Noise:	65.4	64.4	61.5	56.6	65.2	65.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	297
CNEL:	32	69	148	320

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Lake Forest Drive  
 Road Segment: Hidden Canyon to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,913 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,478 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.71	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.91	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.2	66.2	64.4	58.4	67.0	67.6	
Medium Trucks:	60.8	60.1	53.8	52.2	60.7	60.9	
Heavy Trucks:	61.2	60.6	51.6	52.9	61.2	61.3	
Vehicle Noise:	68.9	68.0	65.0	60.2	68.7	69.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	111	239	515
CNEL:	55	119	257	554



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Lake Forest Drive  
 Road Segment: Bake Parkway to Hidden Canyon (Romano)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,780 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,467 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.74	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.94	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.1	64.4	58.3	67.0	67.6
Medium Trucks:	60.8	60.1	53.7	52.2	60.7	60.9
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	68.9	68.0	64.9	60.2	68.7	69.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	110	238	513
CNEL:	55	119	256	551

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Lake Forest Drive  
 Road Segment: Tesla to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,227 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,091 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-19.27	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-23.22	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.2	61.4	55.4	64.0	64.6
Medium Trucks:	57.8	57.2	50.8	49.3	57.7	58.0
Heavy Trucks:	58.3	57.7	48.6	49.9	58.2	58.4
Vehicle Noise:	66.0	65.1	62.0	57.2	65.8	66.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	95	204	439
CNEL:	47	102	219	472

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Lake Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,127 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	505 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	50.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 42.814				
Road Grade:	0.0%	Medium Trucks: 42.720				
Left View:	-90.0 degrees	Heavy Trucks: 42.814				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-2.36	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	70.80	-19.60	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	77.97	-23.56	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.1	55.0	53.3	47.2	55.8	56.4
Medium Trucks:	50.9	50.2	43.9	42.3	50.8	51.0
Heavy Trucks:	54.1	53.5	44.5	45.8	54.1	54.2
Vehicle Noise:	59.0	58.1	54.2	50.3	58.8	59.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	42	90
CNEL:	10	21	44	95

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Lynx  
 Road Segment: Irvine Boulevard to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1,330 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	110 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-8.99	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-26.23	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-30.19	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	50.4	49.3	47.5	41.5	50.1	50.7
Medium Trucks:	45.2	44.5	38.2	36.6	45.1	45.3
Heavy Trucks:	48.4	47.8	38.8	40.0	48.4	48.5
Vehicle Noise:	53.3	52.4	48.5	44.6	53.1	53.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	3	6	13	28
CNEL:	3	6	14	30

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: MacArthur Boulevard  
 Road Segment: I-405 SB Off-Ramp to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 57,170 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,717 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 60 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.54	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-13.70	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-17.66	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.6	73.6	71.8	65.8	74.4	75.0
Medium Trucks:	67.9	67.2	60.8	59.3	67.8	68.0
Heavy Trucks:	67.6	67.0	57.9	59.2	67.5	67.7
Vehicle Noise:	76.1	75.2	72.3	67.4	75.9	76.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	248	535	1,152	2,482
CNEL:	267	576	1,241	2,673

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: MacArthur Boulevard  
 Road Segment: Main Street to I-405 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 58,639 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,838 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.65	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-13.59	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-17.55	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	74.8	73.7	71.9	65.9	74.5	75.1	
Medium Trucks:	68.0	67.3	61.0	59.4	67.9	68.1	
Heavy Trucks:	67.7	67.1	58.0	59.3	67.7	67.8	
Vehicle Noise:	76.2	75.3	72.4	67.5	76.0	76.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	252	544	1,171	2,524
CNEL:	272	586	1,262	2,718

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: MacArthur Boulevard  
 Road Segment: I-405 NB Off-Ramp and I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 57,119 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,712 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 60 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.53	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-13.71	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-17.66	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.6	73.6	71.8	65.8	74.4	75.0
Medium Trucks:	67.9	67.2	60.8	59.3	67.8	68.0
Heavy Trucks:	67.6	67.0	57.9	59.2	67.5	67.7
Vehicle Noise:	76.1	75.2	72.3	67.4	75.9	76.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	248	534	1,151	2,480
CNEL:	267	575	1,240	2,671

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: MacArthur Boulevard  
 Road Segment: Jamboree Road to Fairchild Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,795 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,283 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.03	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.98	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	64.9	58.9	67.5	68.1
Medium Trucks:	61.5	60.9	54.5	53.0	61.4	61.6
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	69.6	68.7	65.6	60.9	69.4	69.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	357	768
CNEL:	82	178	382	824



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: MacArthur Boulevard  
 Road Segment: Fairchild Road to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 38,766 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,198 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.10	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.14	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.10	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.6	64.8	58.8	67.4	68.0
Medium Trucks:	61.4	60.7	54.4	52.8	61.3	61.5
Heavy Trucks:	62.3	61.7	52.6	53.9	62.2	62.4
Vehicle Noise:	69.5	68.6	65.4	60.8	69.3	69.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	163	350	755
CNEL:	81	174	376	810

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: MacArthur Boulevard  
 Road Segment: Fitch to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 41,798 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,448 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.43	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.81	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.77	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	62.2	61.5	55.1	53.6	62.0	62.3
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	70.2	69.3	66.2	61.5	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	173	374	805
CNEL:	86	186	401	864

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: MacArthur Boulevard  
 Road Segment: Michelson Drive to Douglas

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 40,849 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,370 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.33	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-13.91	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-17.87	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.8	60.8	69.4	70.0
Medium Trucks:	63.4	62.8	56.4	54.9	63.3	63.5
Heavy Trucks:	64.3	63.7	54.7	55.9	64.3	64.4
Vehicle Noise:	71.5	70.6	67.5	62.8	71.3	71.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	122	264	568	1,224
CNEL:	131	283	610	1,313

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: MacArthur Boulevard  
 Road Segment: Douglas to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 41,587 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,431 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.40	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-13.84	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-17.79	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	66.9	60.9	69.5	70.1
Medium Trucks:	63.5	62.8	56.5	54.9	63.4	63.6
Heavy Trucks:	64.4	63.8	54.7	56.0	64.3	64.5
Vehicle Noise:	71.6	70.7	67.5	62.9	71.4	71.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	124	267	575	1,239
CNEL:	133	286	617	1,329

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: MacArthur Boulevard  
 Road Segment: Skypark to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 33,703 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,781 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.49	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.75	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.70	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.5	66.4	64.6	58.6	67.2	67.8	
Medium Trucks:	61.2	60.5	54.2	52.6	61.1	61.3	
Heavy Trucks:	62.1	61.5	52.4	53.7	62.0	62.2	
Vehicle Noise:	69.3	68.4	65.2	60.6	69.1	69.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	150	324	697
CNEL:	75	161	347	748

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: MacArthur Boulevard  
 Road Segment: Redhill Avenue to Skypark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,805 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,376 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.81	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.43	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.39	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	60.1	59.5	53.1	51.5	60.0	60.2
Heavy Trucks:	61.0	60.4	51.3	52.6	61.0	61.1
Vehicle Noise:	68.2	67.3	64.2	59.5	68.0	68.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	287	619
CNEL:	66	143	308	664

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: MacArthur Boulevard  
 Road Segment: Birch Street to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,634 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,620 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.14	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-17.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-21.05	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.7	63.6	61.9	55.8	64.4	65.1
Medium Trucks:	58.5	57.8	51.4	49.9	58.3	58.6
Heavy Trucks:	59.3	58.7	49.7	50.9	59.3	59.4
Vehicle Noise:	66.5	65.6	62.5	57.8	66.3	66.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	223	480
CNEL:	51	111	239	514

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: MacArthur Boulevard  
 Road Segment: Campus Drive to Birch Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,815 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.64	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-16.60	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-20.56	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	65.9	64.2	58.1	66.7	67.3
Medium Trucks:	60.7	60.1	53.7	52.2	60.6	60.9
Heavy Trucks:	61.6	61.0	52.0	53.2	61.6	61.7
Vehicle Noise:	68.8	67.9	64.8	60.1	68.6	69.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	175	376	810
CNEL:	87	187	404	869



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Main Street  
 Road Segment: Gillette Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 38,628 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,187 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.08	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.16	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.11	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.2	59.2	67.8	68.4
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	62.7	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	69.9	69.0	65.8	61.2	69.7	70.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	165	355	764
CNEL:	82	177	380	819

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Main Street  
 Road Segment: MacArthur Boulevard to Mercantile

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,531 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,014 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.84	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.40	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.35	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.8	65.0	58.9	67.6	68.2
Medium Trucks:	61.6	60.9	54.5	53.0	61.5	61.7
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	69.6	68.7	65.6	60.9	69.5	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	342	736
CNEL:	79	170	366	789

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Main Street  
 Road Segment: Executive Park to MacArthur Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,869 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,217 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.51	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.73	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.69	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	65.0	63.2	57.2	65.8	66.4
Medium Trucks:	59.8	59.2	52.8	51.2	59.7	59.9
Heavy Trucks:	60.7	60.1	51.0	52.3	60.6	60.8
Vehicle Noise:	67.9	67.0	63.8	59.2	67.7	68.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	274	591
CNEL:	63	137	294	634

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Main Street  
 Road Segment: Von Karman Avenue to Cartwright

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,763 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,043 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.04	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.7	62.9	56.8	65.5	66.1
Medium Trucks:	59.5	58.8	52.4	50.9	59.4	59.6
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	67.5	66.6	63.5	58.8	67.4	67.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	121	260	560
CNEL:	60	129	279	601

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Main Street  
 Road Segment: McDermott to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,767 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,126 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.32	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.91	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.87	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.9	64.8	63.1	57.0	65.6	66.2	
Medium Trucks:	59.6	59.0	52.6	51.1	59.5	59.8	
Heavy Trucks:	60.5	59.9	50.9	52.1	60.5	60.6	
Vehicle Noise:	67.7	66.8	63.7	59.0	67.5	68.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	124	267	575
CNEL:	62	133	286	617

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Main Street  
 Road Segment: Red Hill Avenue to Executive Circle

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,362 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,092 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.26	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.98	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.94	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.8	64.8	63.0	56.9	65.6	66.2
Medium Trucks:	59.6	58.9	52.5	51.0	59.5	59.7
Heavy Trucks:	60.4	59.8	50.8	52.0	60.4	60.5
Vehicle Noise:	67.7	66.7	63.6	58.9	67.5	67.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	123	264	569
CNEL:	61	131	283	610

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Main Street  
 Road Segment: Jamboree Road to Union

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,079 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,987 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.21	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.16	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.5	62.8	56.7	65.3	65.9
Medium Trucks:	59.3	58.7	52.3	50.8	59.2	59.5
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3
Vehicle Noise:	67.4	66.5	63.4	58.7	67.2	67.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	255	549
CNEL:	59	127	274	589

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Main Street  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,805 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,221 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.08	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.32	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.28	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.1	64.1	62.3	56.2	64.9	65.5	
Medium Trucks:	58.9	58.2	51.9	50.3	58.8	59.0	
Heavy Trucks:	59.7	59.1	50.1	51.4	59.7	59.8	
Vehicle Noise:	67.0	66.1	62.9	58.2	66.8	67.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	177	381
CNEL:	41	88	190	409



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Main Street  
 Road Segment: Siglo to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,387 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,847 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.52	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.48	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.3	64.2	62.4	56.4	65.0	65.6	
Medium Trucks:	59.0	58.4	52.0	50.5	58.9	59.1	
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0	
Vehicle Noise:	67.1	66.2	63.1	58.4	66.9	67.4	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	113	243	523
CNEL:	56	121	261	562

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Main Street  
 Road Segment: Veneto to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,730 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,958 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.97	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.27	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.23	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.5	64.5	62.7	56.6	65.3	65.9
Medium Trucks:	59.3	58.6	52.3	50.7	59.2	59.4
Heavy Trucks:	60.1	59.5	50.5	51.8	60.1	60.2
Vehicle Noise:	67.4	66.5	63.3	58.6	67.2	67.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	117	253	544
CNEL:	58	126	271	584

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Main Street  
 Road Segment: Paseo Westpark to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,180 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,005 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.93	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.17	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.12	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.2	61.5	55.4	64.0	64.6
Medium Trucks:	58.0	57.4	51.0	49.5	57.9	58.2
Heavy Trucks:	58.9	58.3	49.3	50.5	58.9	59.0
Vehicle Noise:	66.1	65.2	62.1	57.4	65.9	66.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	72	155	334
CNEL:	36	77	167	359

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Main Street  
 Road Segment: Harvard Avenue to San Mateo

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	11,923 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	984 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.22	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.1	61.4	55.3	63.9	64.5
Medium Trucks:	58.0	57.3	50.9	49.4	57.8	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.0	65.1	62.0	57.3	65.8	66.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	330
CNEL:	35	76	164	354

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Marine Way  
 Road Segment: Sand Canyon Avenue to Ridge Valley (O Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 38,752 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,197 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 42.814				
Road Grade: 0.0%		Medium Trucks: 42.720				
Left View: -90.0 degrees		Heavy Trucks: 42.814				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.61	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	77.72	-13.63	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	82.99	-17.59	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.8	67.0	60.9	69.6	70.2
Medium Trucks:	63.8	63.1	56.8	55.2	63.7	63.9
Heavy Trucks:	65.1	64.5	55.5	56.7	65.1	65.2
Vehicle Noise:	71.8	70.9	67.7	63.1	71.6	72.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	139	299	644
CNEL:	69	149	320	690

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Marine Way  
 Road Segment: Alton Parkway to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,934 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,470 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-14.75	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-18.71	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.7	60.1	53.7	52.1	60.6	60.8
Heavy Trucks:	62.0	61.5	52.4	53.7	62.0	62.1
Vehicle Noise:	68.8	67.9	64.6	60.0	68.6	69.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	108	233	502
CNEL:	54	116	250	538

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Marine Way  
 Road Segment: Lynx to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,584 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,688 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.86	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-14.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-18.34	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.1	64.3	58.2	66.9	67.5
Medium Trucks:	61.1	60.4	54.1	52.5	61.0	61.2
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	69.1	68.2	65.0	60.4	68.9	69.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	247	531
CNEL:	57	123	264	569

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Marine Way  
 Road Segment: County Access to Treble

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,788 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,055 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.40	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.1	62.0	60.2	54.2	62.8	63.4	
Medium Trucks:	57.0	56.4	50.0	48.5	56.9	57.1	
Heavy Trucks:	58.3	57.8	48.7	50.0	58.3	58.5	
Vehicle Noise:	65.1	64.2	60.9	56.3	64.9	65.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	132	285
CNEL:	30	66	142	305



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Marine Way  
 Road Segment: Ridge Valley (O Street) to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,357 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,762 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.22	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.17	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.3	64.2	62.5	56.4	65.0	65.6	
Medium Trucks:	59.3	58.6	52.2	50.7	59.1	59.4	
Heavy Trucks:	60.6	60.0	51.0	52.2	60.6	60.7	
Vehicle Noise:	67.3	66.4	63.1	58.6	67.1	67.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	86	186	401
CNEL:	43	92	199	429

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Marine Way  
 Road Segment: Skyhawk to County Access

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,690 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 964 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.83	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.79	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.7	61.6	59.8	53.8	62.4	63.0
Medium Trucks:	56.6	56.0	49.6	48.1	56.5	56.8
Heavy Trucks:	58.0	57.4	48.3	49.6	57.9	58.1
Vehicle Noise:	64.7	63.8	60.5	56.0	64.5	64.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	125	268
CNEL:	29	62	133	287

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Marine Way  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,956 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,316 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.44	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.0	63.0	61.2	55.1	63.8	64.4
Medium Trucks:	58.0	57.3	51.0	49.4	57.9	58.1
Heavy Trucks:	59.3	58.7	49.7	50.9	59.3	59.4
Vehicle Noise:	66.0	65.1	61.9	57.3	65.8	66.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	330
CNEL:	35	76	164	353

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Marine Way  
 Road Segment: Treble to Lynx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,116 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,577 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.70	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.66	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.8	63.7	62.0	55.9	64.5	65.1
Medium Trucks:	58.8	58.1	51.7	50.2	58.7	58.9
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2
Vehicle Noise:	66.8	65.9	62.6	58.1	66.6	67.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	80	173	372
CNEL:	40	86	185	399

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: McGaw Avenue  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	11,998 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	990 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		57.786		
Left View:	-90.0 degrees	Medium Trucks:		57.717		
Right View:	90.0 degrees	Heavy Trucks:		57.787		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-0.90	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-18.14	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-22.10	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.2	60.1	58.3	52.3	60.9	61.5
Medium Trucks:	55.4	54.7	48.3	46.8	55.3	55.5
Heavy Trucks:	57.2	56.6	47.6	48.9	57.2	57.3
Vehicle Noise:	63.4	62.5	59.1	54.7	63.2	63.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	102	220
CNEL:	24	51	109	235

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: McGaw Avenue  
 Road Segment: Red Hill Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,035 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 993 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-0.89	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-18.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-22.08	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.2	60.1	58.3	52.3	60.9	61.5	
Medium Trucks:	55.4	54.7	48.3	46.8	55.3	55.5	
Heavy Trucks:	57.2	56.7	47.6	48.9	57.2	57.3	
Vehicle Noise:	63.4	62.5	59.1	54.7	63.2	63.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	102	220
CNEL:	24	51	109	235

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: McGaw Avenue  
 Road Segment: Daimler to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,107 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 751 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-2.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-19.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-23.30	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.0	58.9	57.1	51.1	59.7	60.3
Medium Trucks:	54.2	53.5	47.1	45.6	54.1	54.3
Heavy Trucks:	56.0	55.4	46.4	47.7	56.0	56.1
Vehicle Noise:	62.2	61.3	57.9	53.5	62.0	62.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	85	183
CNEL:	20	42	91	196

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: McGaw Avenue  
 Road Segment: Jamboree Road to Murphy Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,320 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	356 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-22.58	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-26.53	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.7	55.7	53.9	47.8	56.5	57.1
Medium Trucks:	50.9	50.3	43.9	42.4	50.8	51.0
Heavy Trucks:	52.8	52.2	43.2	44.4	52.8	52.9
Vehicle Noise:	58.9	58.1	54.6	50.2	58.8	59.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	111
CNEL:	12	26	55	119



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Meadowood  
 Road Segment: Culver Drive to Canyonwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,920 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 901 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 25 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	0.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-17.09	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-21.05	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.6	55.6	53.8	47.8	56.4	57.0
Medium Trucks:	51.5	50.8	44.4	42.9	51.3	51.6
Heavy Trucks:	54.7	54.1	45.1	46.3	54.7	54.8
Vehicle Noise:	59.5	58.7	54.8	50.9	59.4	59.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	26	57	122
CNEL:	13	28	60	130

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Meridian  
 Road Segment: Spectrum to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,338 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 193 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-7.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-24.58	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-28.53	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	52.2	51.1	49.3	43.3	51.9	52.5	
Medium Trucks:	46.7	46.0	39.6	38.1	46.5	46.8	
Heavy Trucks:	49.1	48.6	39.5	40.8	49.1	49.3	
Vehicle Noise:	54.7	53.8	50.2	46.0	54.5	54.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	12	27	58
CNEL:	6	13	29	62

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Meridian  
 Road Segment: Alton Parkway to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1,950 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	161 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		57.786		
Left View:	-90.0 degrees	Medium Trucks:		57.717		
Right View:	90.0 degrees	Heavy Trucks:		57.787		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-8.13	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-25.36	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-29.32	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	51.4	50.3	48.6	42.5	51.1	51.7
Medium Trucks:	45.9	45.2	38.8	37.3	45.8	46.0
Heavy Trucks:	48.4	47.8	38.7	40.0	48.3	48.5
Vehicle Noise:	53.9	53.0	49.4	45.2	53.7	54.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	11	24	51
CNEL:	5	12	25	55

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Merit  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,204 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 264 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-5.18	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-22.41	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-26.37	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.2	53.1	51.4	45.3	53.9	54.5
Medium Trucks:	49.0	48.4	42.0	40.5	48.9	49.1
Heavy Trucks:	52.2	51.6	42.6	43.9	52.2	52.3
Vehicle Noise:	57.1	56.2	52.3	48.4	56.9	57.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	11	23	50
CNEL:	5	12	25	53

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Michelson Drive  
 Road Segment: Riparian to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,861 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,886 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.92	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.88	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.6	64.5	62.8	56.7	65.3	65.9	
Medium Trucks:	59.6	58.9	52.5	51.0	59.4	59.7	
Heavy Trucks:	60.9	60.3	51.2	52.5	60.9	61.0	
Vehicle Noise:	67.6	66.7	63.4	58.9	67.4	67.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	90	195	419
CNEL:	45	97	208	449

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Michelson Drive  
 Road Segment: Almond Tree Lane to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,055 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 747 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.71	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-19.94	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-23.90	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.4	61.6	55.6	64.2	64.8
Medium Trucks:	58.4	57.8	51.4	49.8	58.3	58.5
Heavy Trucks:	59.7	59.1	50.1	51.4	59.7	59.8
Vehicle Noise:	66.4	65.6	62.3	57.7	66.3	66.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	46	98	211
CNEL:	23	49	105	226

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Michelson Drive  
 Road Segment: Von Karman Avenue to Obsidian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,381 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,846 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.01	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.97	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.5	64.4	62.7	56.6	65.2	65.8
Medium Trucks:	59.5	58.8	52.4	50.9	59.3	59.6
Heavy Trucks:	60.8	60.2	51.2	52.4	60.8	60.9
Vehicle Noise:	67.5	66.6	63.3	58.8	67.3	67.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	89	192	414
CNEL:	44	95	206	443

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Michelson Drive  
 Road Segment: Parkside to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,030 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,487 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.91	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.5	61.7	55.7	64.3	64.9
Medium Trucks:	58.5	57.9	51.5	49.9	58.4	58.6
Heavy Trucks:	59.8	59.3	50.2	51.5	59.8	59.9
Vehicle Noise:	66.6	65.7	62.4	57.8	66.4	66.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	166	358
CNEL:	38	83	178	383



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Michelson Drive  
 Road Segment: Gillman to Seton/Sandburg Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,623 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 711 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.92	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-20.16	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-24.11	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.2	63.2	61.4	55.3	64.0	64.6	
Medium Trucks:	58.2	57.5	51.2	49.6	58.1	58.3	
Heavy Trucks:	59.5	58.9	49.9	51.1	59.5	59.6	
Vehicle Noise:	66.2	65.3	62.1	57.5	66.1	66.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	44	95	205
CNEL:	22	47	102	219

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Michelson Drive  
 Road Segment: Carlson to Prince

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,099 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,071 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.72	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	77.72	-15.52	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	82.99	-19.47	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.7	63.6	61.9	55.8	64.4	65.0
Medium Trucks:	58.7	58.0	51.6	50.1	58.6	58.8
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1
Vehicle Noise:	66.7	65.8	62.5	58.0	66.5	67.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	95	204	440
CNEL:	47	101	218	471

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Michelson Drive  
 Road Segment: MacArthur Boulevard to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,637 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,538 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.43	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.81	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.77	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.7	63.6	61.9	55.8	64.4	65.0
Medium Trucks:	58.7	58.0	51.6	50.1	58.5	58.8
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1
Vehicle Noise:	66.7	65.8	62.5	58.0	66.5	67.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	170	366
CNEL:	39	84	182	392

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Michelson Drive  
 Road Segment: Harvard Avenue to Parkside

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 18,101 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,493 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.30	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.94	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.89	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.5	61.7	55.7	64.3	64.9
Medium Trucks:	58.5	57.9	51.5	50.0	58.4	58.7
Heavy Trucks:	59.9	59.3	50.2	51.5	59.8	60.0
Vehicle Noise:	66.6	65.7	62.4	57.9	66.4	66.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	167	359
CNEL:	38	83	178	384

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Michelson Drive  
 Road Segment: Bixby to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,064 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,325 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.41	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.0	63.0	61.2	55.2	63.8	64.4
Medium Trucks:	58.0	57.3	51.0	49.4	57.9	58.1
Heavy Trucks:	59.3	58.8	49.7	51.0	59.3	59.4
Vehicle Noise:	66.1	65.2	61.9	57.3	65.9	66.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	154	332
CNEL:	36	76	165	355

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Michelson Drive  
 Road Segment: Jamboree Road to Carlson

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,519 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,023 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.62	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.62	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.57	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.1	64.4	58.3	66.9	67.5
Medium Trucks:	61.2	60.5	54.1	52.6	61.0	61.3
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	69.2	68.3	65.0	60.5	69.0	69.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	111	239	515
CNEL:	55	119	256	552

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Michelson Drive  
 Road Segment: Teller to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,548 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,025 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.63	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.61	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.57	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.1	64.4	58.3	66.9	67.5
Medium Trucks:	61.2	60.5	54.1	52.6	61.1	61.3
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	69.2	68.3	65.0	60.5	69.0	69.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	111	239	516
CNEL:	55	119	256	552

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Michelson Drive  
 Road Segment: Jordan East to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,510 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 537 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 29.547 Medium Trucks: 29.411 Heavy Trucks: 29.547																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.14	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	77.72	-21.38	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	82.99	-25.33	3.32	-1.20	-5.77	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.5	63.4	61.7	55.6	64.2	64.8
Medium Trucks:	58.5	57.8	51.5	49.9	58.4	58.6
Heavy Trucks:	59.8	59.2	50.2	51.4	59.8	59.9
Vehicle Noise:	66.5	65.6	62.3	57.8	66.3	66.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	79	171
CNEL:	18	39	85	183



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Michelson Drive  
 Road Segment: Culver Drive to Angell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 709 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 16 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 39.306 Medium Trucks: 39.205 Heavy Trucks: 39.307																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.93	1.46	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-20.17	1.48	-1.20	-5.08	0.000	0.000
Heavy Trucks:	82.99	-24.12	1.46	-1.20	-5.56	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.8	62.8	61.0	55.0	63.6	64.2
Medium Trucks:	57.8	57.2	50.8	49.2	57.7	57.9
Heavy Trucks:	59.1	58.5	49.5	50.8	59.1	59.2
Vehicle Noise:	65.9	65.0	61.7	57.1	65.7	66.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	44	95	206
CNEL:	22	47	102	220

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Modjeska (A Street)  
 Road Segment: Portola Springs to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,585 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,121 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 24 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 27.659 Medium Trucks: 27.514 Heavy Trucks: 27.659																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.46	3.75	-1.20	-4.81	0.000	0.000
Medium Trucks:	79.45	-18.69	3.79	-1.20	-5.14	0.000	0.000
Heavy Trucks:	84.25	-22.65	3.75	-1.20	-5.77	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.6	68.5	66.7	60.7	69.3	69.9	
Medium Trucks:	63.3	62.7	56.3	54.8	63.2	63.5	
Heavy Trucks:	64.2	63.6	54.5	55.8	64.1	64.3	
Vehicle Noise:	71.4	70.5	67.3	62.7	71.2	71.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	168	361
CNEL:	39	83	180	387

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Modjeska (A Street)  
 Road Segment: South of Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,669 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 138 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-10.56	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-27.80	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-31.76	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.5	57.5	55.7	49.6	58.3	58.9
Medium Trucks:	52.3	51.6	45.3	43.7	52.2	52.4
Heavy Trucks:	53.1	52.5	43.5	44.8	53.1	53.2
Vehicle Noise:	60.4	59.5	56.3	51.6	60.2	60.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	18	39	83
CNEL:	9	19	41	89

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Muirlands Boulevard  
 Road Segment: Bake Parkway to City Limits

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,592 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,204 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.34	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.0	62.2	56.2	64.8	65.4
Medium Trucks:	58.8	58.2	51.8	50.2	58.7	58.9
Heavy Trucks:	59.7	59.1	50.0	51.3	59.6	59.8
Vehicle Noise:	66.9	66.0	62.8	58.2	66.7	67.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	175	377
CNEL:	40	87	188	405

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Muirlands Boulevard  
 Road Segment: Alton Parkway to Sterling

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,970 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 988 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.20	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.1	61.4	55.3	63.9	64.6
Medium Trucks:	58.0	57.3	50.9	49.4	57.8	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.0	65.1	62.0	57.3	65.9	66.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	331
CNEL:	35	76	165	355

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Muirlands Boulevard  
 Road Segment: Wrigley to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,711 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 966 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.29	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.1	63.1	61.3	55.2	63.9	64.5
Medium Trucks:	57.9	57.2	50.8	49.3	57.8	58.0
Heavy Trucks:	58.7	58.1	49.1	50.3	58.7	58.8
Vehicle Noise:	65.9	65.0	61.9	57.2	65.8	66.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	70	151	326
CNEL:	35	75	162	350

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Newport Coast Drive  
 Road Segment: SR-73 NB Off-Ramp to Turtle Ridge

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,431 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,438 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.06	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.3	61.6	55.5	64.1	64.7
Medium Trucks:	58.4	57.7	51.3	49.8	58.3	58.5
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8
Vehicle Noise:	66.4	65.5	62.2	57.7	66.2	66.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	75	163	350
CNEL:	37	81	174	375

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Newport Coast Drive  
 Road Segment: Turtle Crest to Bonita Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,390 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,022 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.58	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.54	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.9	61.9	60.1	54.0	62.7	63.3
Medium Trucks:	56.9	56.2	49.9	48.3	56.8	57.0
Heavy Trucks:	58.2	57.6	48.6	49.8	58.2	58.3
Vehicle Noise:	64.9	64.0	60.8	56.2	64.7	65.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	60	129	279
CNEL:	30	64	139	299



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Nightmist  
 Road Segment: Sand Canyon Avenue to Tulip (Road C)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	12,094 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	998 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		57.786		
Left View:	-90.0 degrees	Medium Trucks:		57.717		
Right View:	90.0 degrees	Heavy Trucks:		57.787		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.20	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.44	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.39	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.3	58.2	56.5	50.4	59.0	59.6
Medium Trucks:	53.8	53.1	46.8	45.2	53.7	53.9
Heavy Trucks:	56.3	55.7	46.7	47.9	56.3	56.4
Vehicle Noise:	61.8	60.9	57.3	53.1	61.6	62.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	80	173
CNEL:	18	40	86	185

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Northwood  
 Road Segment: Yale Avenue to Savannah

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,646 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	383 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.02	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-22.26	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-26.22	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.9	58.8	57.1	51.0	59.6	60.3
Medium Trucks:	54.1	53.5	47.1	45.6	54.0	54.3
Heavy Trucks:	56.0	55.4	46.4	47.6	56.0	56.1
Vehicle Noise:	62.1	61.3	57.8	53.4	62.0	62.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	51	109
CNEL:	12	25	54	117

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Northwood  
 Road Segment: Goldrush to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,628 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 299 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-6.10	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-23.34	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-27.29	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.8	57.8	56.0	50.0	58.6	59.2
Medium Trucks:	53.1	52.4	46.0	44.5	52.9	53.2
Heavy Trucks:	54.9	54.3	45.3	46.5	54.9	55.0
Vehicle Noise:	61.1	60.2	56.7	52.4	60.9	61.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	20	43	93
CNEL:	10	21	46	99

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Oak Canyon Drive  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,939 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 655 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.79	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-21.03	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-24.98	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.3	64.2	62.5	56.4	65.0	65.6	
Medium Trucks:	59.1	58.4	52.0	50.5	59.0	59.2	
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0	
Vehicle Noise:	67.1	66.2	63.1	58.4	67.0	67.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	51	109	235
CNEL:	25	54	117	252

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Pacifica  
 Road Segment: Gateway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,905 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 900 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.90	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.14	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.09	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.4	61.3	59.5	53.5	62.1	62.7	
Medium Trucks:	56.3	55.7	49.3	47.8	56.2	56.5	
Heavy Trucks:	57.7	57.1	48.0	49.3	57.6	57.8	
Vehicle Noise:	64.4	63.5	60.2	55.7	64.2	64.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	55	119	256
CNEL:	27	59	127	274

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Pacifica  
 Road Segment: Alton Parkway to Gateway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,790 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 643 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.36	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.60	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.55	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.9	59.8	58.1	52.0	60.6	61.2	
Medium Trucks:	54.9	54.2	47.8	46.3	54.8	55.0	
Heavy Trucks:	56.2	55.6	46.6	47.8	56.2	56.3	
Vehicle Noise:	62.9	62.0	58.7	54.2	62.7	63.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	44	95	205
CNEL:	22	47	102	219

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan	Project Name: Irvine GP
Road Name: Pacifica	Job Number: 15937
Road Segment: Irvine Center Drive to Fortune Drive (Spectrum Center Drive)	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,857 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 648 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border: none;"> <thead> <tr> <th style="text-align: left;">VehicleType</th> <th style="text-align: center;">Day</th> <th style="text-align: center;">Evening</th> <th style="text-align: center;">Night</th> <th style="text-align: center;">Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td style="text-align: center;">77.5%</td> <td style="text-align: center;">12.9%</td> <td style="text-align: center;">9.6%</td> <td style="text-align: center;">97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td style="text-align: center;">84.8%</td> <td style="text-align: center;">4.9%</td> <td style="text-align: center;">10.3%</td> <td style="text-align: center;">1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td style="text-align: center;">86.5%</td> <td style="text-align: center;">2.7%</td> <td style="text-align: center;">10.8%</td> <td style="text-align: center;">0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.52	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.9	59.9	58.1	52.1	60.7	61.3
Medium Trucks:	54.9	54.2	47.9	46.3	54.8	55.0
Heavy Trucks:	56.2	55.6	46.6	47.9	56.2	56.3
Vehicle Noise:	63.0	62.1	58.8	54.2	62.8	63.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	44	96	206
CNEL:	22	47	102	220

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Pacifica  
 Road Segment: Meridian to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,742 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 309 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-6.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-23.78	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-27.74	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	57.7	56.7	54.9	48.8	57.5	58.1	
Medium Trucks:	51.7	51.0	44.7	43.1	51.6	51.8	
Heavy Trucks:	53.0	52.4	43.4	44.6	53.0	53.1	
Vehicle Noise:	59.7	58.8	55.6	51.0	59.5	60.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	13	27	58	126
CNEL:	13	29	62	134



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Park Place  
 Road Segment: Christamon South to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,784 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	312 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-5.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-22.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-26.44	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.3	53.2	51.4	45.4	54.0	54.6
Medium Trucks:	48.8	48.1	41.7	40.2	48.6	48.9
Heavy Trucks:	51.2	50.6	41.6	42.9	51.2	51.3
Vehicle Noise:	56.8	55.9	52.3	48.1	56.6	57.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	80
CNEL:	9	18	39	85

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan Project Name: Irvine GP  
 Road Name: Portola Parkway Job Number: 15937  
 Road Segment: Bee Canyon Access Road to Sand Canyon Avenue

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,658 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,869 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">VehicleType</th> <th style="text-align: center;">Day</th> <th style="text-align: center;">Evening</th> <th style="text-align: center;">Night</th> <th style="text-align: center;">Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td style="text-align: center;">77.5%</td> <td style="text-align: center;">12.9%</td> <td style="text-align: center;">9.6%</td> <td style="text-align: center;">97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td style="text-align: center;">84.8%</td> <td style="text-align: center;">4.9%</td> <td style="text-align: center;">10.3%</td> <td style="text-align: center;">1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td style="text-align: center;">86.5%</td> <td style="text-align: center;">2.7%</td> <td style="text-align: center;">10.8%</td> <td style="text-align: center;">0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.30	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.4	68.4	66.6	60.5	69.2	69.8	
Medium Trucks:	62.8	62.1	55.8	54.2	62.7	62.9	
Heavy Trucks:	62.9	62.3	53.2	54.5	62.8	63.0	
Vehicle Noise:	71.0	70.1	67.1	62.3	70.8	71.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	152	328	707
CNEL:	76	164	353	761

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Portola Parkway  
 Road Segment: Jeffrey Road to Bee Canyon Access Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,635 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,867 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.30	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.4	68.4	66.6	60.5	69.2	69.8
Medium Trucks:	62.8	62.1	55.8	54.2	62.7	62.9
Heavy Trucks:	62.8	62.3	53.2	54.5	62.8	63.0
Vehicle Noise:	71.0	70.1	67.1	62.2	70.8	71.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	152	328	707
CNEL:	76	164	353	760

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Portola Parkway  
 Road Segment: Arrowhead to Ridge Valley Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,644 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,868 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.30	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.4	68.4	66.6	60.5	69.2	69.8	
Medium Trucks:	62.8	62.1	55.8	54.2	62.7	62.9	
Heavy Trucks:	62.8	62.3	53.2	54.5	62.8	63.0	
Vehicle Noise:	71.0	70.1	67.1	62.2	70.8	71.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	152	328	707
CNEL:	76	164	353	761

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Portola Parkway  
 Road Segment: Sand Canyon Avenue to Arrowhead

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,880 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,723 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.46	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.70	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.65	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.1	68.0	66.2	60.2	68.8	69.4	
Medium Trucks:	62.5	61.8	55.4	53.9	62.3	62.6	
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6	
Vehicle Noise:	70.7	69.7	66.8	61.9	70.5	70.9	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	311	670
CNEL:	72	155	334	721

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Portola Parkway  
 Road Segment: Portola Springs to SR-241 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 16,931 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,397 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.61	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.57	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	67.1	65.3	59.3	67.9	68.5	
Medium Trucks:	61.6	60.9	54.5	53.0	61.4	61.7	
Heavy Trucks:	61.6	61.0	52.0	53.2	61.6	61.7	
Vehicle Noise:	69.7	68.8	65.9	61.0	69.5	70.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	270	582
CNEL:	63	135	291	627

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Portola Parkway  
 Road Segment: Gatepark to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,146 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,157 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.52	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.72	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.68	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	70.0	69.1	66.1	61.2	69.8	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	175	377	812
CNEL:	87	188	405	873

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Portola Parkway  
 Road Segment: ETC-6 (SR-261) NB Off-Ramp to Gatepark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,024 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,147 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.50	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.74	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.70	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.3	65.5	59.5	68.1	68.7	
Medium Trucks:	61.8	61.1	54.7	53.2	61.7	61.9	
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9	
Vehicle Noise:	70.0	69.0	66.1	61.2	69.8	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	376	809
CNEL:	87	188	404	870



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Portola Parkway  
 Road Segment: SR-261 SB Off-Ramp to SR-261 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,264 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,084 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.37	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.87	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.83	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.2	65.4	59.4	68.0	68.6
Medium Trucks:	61.6	61.0	54.6	53.1	61.5	61.8
Heavy Trucks:	61.7	61.1	52.0	53.3	61.7	61.8
Vehicle Noise:	69.8	68.9	65.9	61.1	69.6	70.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	171	368	793
CNEL:	85	184	396	853

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Portola Parkway  
 Road Segment: Jamboree Road to Bellevue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,960 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,059 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.31	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.92	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.88	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.1	65.4	59.3	67.9	68.5
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7
Heavy Trucks:	61.6	61.0	52.0	53.2	61.6	61.7
Vehicle Noise:	69.8	68.8	65.9	61.0	69.6	70.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	170	365	787
CNEL:	85	182	393	846

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Portola Parkway  
 Road Segment: Bellevue to ETC-6 (SR-261) SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,770 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,044 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.28	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.96	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.91	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.1	65.3	59.3	67.9	68.5
Medium Trucks:	61.6	60.9	54.5	53.0	61.4	61.7
Heavy Trucks:	61.6	61.0	52.0	53.2	61.6	61.7
Vehicle Noise:	69.7	68.8	65.9	61.0	69.5	70.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	169	363	783
CNEL:	84	181	391	842

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Portola Parkway  
 Road Segment: Yale Avenue to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,831 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,966 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.11	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.12	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.08	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	66.9	65.2	59.1	67.7	68.3
Medium Trucks:	61.4	60.7	54.4	52.8	61.3	61.5
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5
Vehicle Noise:	69.6	68.6	65.7	60.8	69.4	69.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	164	354	763
CNEL:	82	177	381	821

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Portola Parkway  
 Road Segment: Culver Drive to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,489 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,773 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.34	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.57	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.53	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.5	64.7	58.7	67.3	67.9
Medium Trucks:	60.9	60.3	53.9	52.4	60.8	61.1
Heavy Trucks:	61.0	60.4	51.3	52.6	61.0	61.1
Vehicle Noise:	69.1	68.2	65.2	60.4	68.9	69.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	153	331	712
CNEL:	77	165	356	766

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Portola Parkway  
 Road Segment: Silverado to Portola Springs

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,969 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 987 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">VehicleType</th> <th style="text-align: center;">Day</th> <th style="text-align: center;">Evening</th> <th style="text-align: center;">Night</th> <th style="text-align: center;">Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td style="text-align: center;">77.5%</td> <td style="text-align: center;">12.9%</td> <td style="text-align: center;">9.6%</td> <td style="text-align: center;">97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td style="text-align: center;">84.8%</td> <td style="text-align: center;">4.9%</td> <td style="text-align: center;">10.3%</td> <td style="text-align: center;">1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td style="text-align: center;">86.5%</td> <td style="text-align: center;">2.7%</td> <td style="text-align: center;">10.8%</td> <td style="text-align: center;">0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.88	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-20.12	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-24.07	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.6	63.8	57.8	66.4	67.0
Medium Trucks:	60.0	59.4	53.0	51.5	59.9	60.2
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2
Vehicle Noise:	68.2	67.3	64.4	59.5	68.0	68.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	100	215	462
CNEL:	50	107	231	497

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Pusan  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,434 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 201 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-6.37	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-23.61	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-27.57	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	53.0	51.9	50.2	44.1	52.7	53.3	
Medium Trucks:	47.8	47.2	40.8	39.3	47.7	48.0	
Heavy Trucks:	51.0	50.5	41.4	42.7	51.0	51.2	
Vehicle Noise:	55.9	55.0	51.1	47.2	55.7	56.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	19	42
CNEL:	4	10	21	44

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Quail Hill Parkway  
 Road Segment: Shady Canyon Drive to Passage

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,960 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,317 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.76	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.99	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.95	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.5	64.4	62.6	56.6	65.2	65.8
Medium Trucks:	59.2	58.5	52.2	50.6	59.1	59.3
Heavy Trucks:	60.1	59.5	50.4	51.7	60.0	60.2
Vehicle Noise:	67.3	66.4	63.2	58.6	67.1	67.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	86	186	401
CNEL:	43	93	199	430



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Quail Hill Parkway  
 Road Segment: East Knollcrest to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,254 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 846 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.68	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.92	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.87	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.5	62.5	60.7	54.7	63.3	63.9	
Medium Trucks:	57.3	56.6	50.3	48.7	57.2	57.4	
Heavy Trucks:	58.1	57.5	48.5	49.8	58.1	58.2	
Vehicle Noise:	65.4	64.5	61.3	56.6	65.2	65.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	298
CNEL:	32	69	148	320

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan Project Name: Irvine GP  
 Road Name: Quassar Drive (Spectrum) Job Number: 15937  
 Road Segment: Irvine Center Drive to Spectrum Center Drive (Fortune)

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,991 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 164 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 16 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 39.306 Medium Trucks: 39.205 Heavy Trucks: 39.307																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-7.24	1.46	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-24.48	1.48	-1.20	-5.08	0.000	0.000
Heavy Trucks:	77.97	-28.44	1.46	-1.20	-5.56	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	51.8	50.7	48.9	42.9	51.5	52.1
Medium Trucks:	46.6	45.9	39.6	38.0	46.5	46.7
Heavy Trucks:	49.8	49.2	40.2	41.4	49.8	49.9
Vehicle Noise:	54.6	53.8	49.9	46.0	54.5	54.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	8	17	37
CNEL:	4	8	18	39

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Red Hill Avenue  
 Road Segment: MacArthur Boulevard to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 41,924 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,459 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.98	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.26	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.21	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.3	68.2	66.5	60.4	69.0	69.6	
Medium Trucks:	62.8	62.2	55.8	54.3	62.7	63.0	
Heavy Trucks:	63.3	62.7	53.6	54.9	63.2	63.4	
Vehicle Noise:	71.0	70.1	67.0	62.2	70.8	71.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	95	204	440	947
CNEL:	102	219	472	1,018

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Red Hill Avenue  
 Road Segment: I-405 Over Crossing to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,812 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,717 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.06	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.30	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.25	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.9	66.8	65.1	59.0	67.6	68.2	
Medium Trucks:	61.5	60.8	54.4	52.9	61.3	61.6	
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0	
Vehicle Noise:	69.6	68.7	65.6	60.8	69.4	69.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	123	264	570
CNEL:	61	132	284	612

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Red Hill Avenue  
 Road Segment: Alton Parkway to Deere Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,843 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,545 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.65	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.59	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.55	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	66.9	65.1	59.1	67.7	68.3
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6
Heavy Trucks:	61.9	61.3	52.3	53.6	61.9	62.0
Vehicle Noise:	69.6	68.7	65.7	60.9	69.5	69.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	358	772
CNEL:	83	179	385	830

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Red Hill Avenue  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,669 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,448 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.48	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.76	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.72	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	65.0	58.9	67.5	68.1
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	61.8	61.2	52.1	53.4	61.7	61.9
Vehicle Noise:	69.5	68.6	65.5	60.7	69.3	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	349	752
CNEL:	81	174	375	808

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Red Hill Avenue  
 Road Segment: Deere Avenue to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,582 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,440 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.47	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.77	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.73	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	64.9	58.9	67.5	68.1
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	61.8	61.2	52.1	53.4	61.7	61.9
Vehicle Noise:	69.5	68.5	65.5	60.7	69.3	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	349	751
CNEL:	81	174	374	807

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Red Hill Avenue  
 Road Segment: Skypark East to MacArthur Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,882 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,640 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.26	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.50	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.45	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.0	67.9	66.2	60.1	68.7	69.3	
Medium Trucks:	62.6	61.9	55.5	54.0	62.5	62.7	
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1	
Vehicle Noise:	70.7	69.8	66.7	61.9	70.5	71.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	140	301	648
CNEL:	70	150	323	696



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Red Hill Avenue  
 Road Segment: Main Street to Skypark East

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,274 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,425 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.87	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.11	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.06	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.3	65.6	59.5	68.1	68.7	
Medium Trucks:	62.0	61.3	54.9	53.4	61.8	62.1	
Heavy Trucks:	62.4	61.8	52.7	54.0	62.4	62.5	
Vehicle Noise:	70.1	69.2	66.1	61.3	69.9	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	274	590
CNEL:	63	136	294	633

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Research Drive  
 Road Segment: Hubble to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,761 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,043 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.09	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.04	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.4	66.3	64.5	58.5	67.1	67.7	
Medium Trucks:	61.1	60.5	54.1	52.5	61.0	61.2	
Heavy Trucks:	62.0	61.4	52.3	53.6	61.9	62.1	
Vehicle Noise:	69.2	68.3	65.1	60.5	69.0	69.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	249	537
CNEL:	58	124	267	576

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Research Drive  
 Road Segment: Scientific to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,994 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,320 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.75	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.99	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.94	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.5	64.4	62.6	56.6	65.2	65.8
Medium Trucks:	59.2	58.6	52.2	50.6	59.1	59.3
Heavy Trucks:	60.1	59.5	50.4	51.7	60.0	60.2
Vehicle Noise:	67.3	66.4	63.2	58.6	67.1	67.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	86	186	401
CNEL:	43	93	200	430

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Research Drive  
 Road Segment: Bake Parkway to Muller

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,604 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,040 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.78	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.02	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.98	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.4	63.4	61.6	55.5	64.2	64.8	
Medium Trucks:	58.2	57.5	51.2	49.6	58.1	58.3	
Heavy Trucks:	59.0	58.4	49.4	50.7	59.0	59.1	
Vehicle Noise:	66.3	65.4	62.2	57.5	66.1	66.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	342
CNEL:	37	79	170	367

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Research Drive  
 Road Segment: Irvine Center Drive to Bunsen

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,824 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 810 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.86	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.06	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.4	62.3	60.5	54.5	63.1	63.7
Medium Trucks:	57.1	56.4	50.1	48.5	57.0	57.2
Heavy Trucks:	57.9	57.4	48.3	49.6	57.9	58.1
Vehicle Noise:	65.2	64.3	61.1	56.5	65.0	65.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	62	135	290
CNEL:	31	67	144	311

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan	Project Name: Irvine GP
Road Name: Ridge Valley (O Street)	Job Number: 15937
Road Segment: Irvine Boulevard to Trabuco Road (Great Park Boulevard)	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,535 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,282 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border: none;"> <thead> <tr> <th style="text-align: left;">VehicleType</th> <th style="text-align: center;">Day</th> <th style="text-align: center;">Evening</th> <th style="text-align: center;">Night</th> <th style="text-align: center;">Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td style="text-align: center;">77.5%</td> <td style="text-align: center;">12.9%</td> <td style="text-align: center;">9.6%</td> <td style="text-align: center;">97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td style="text-align: center;">84.8%</td> <td style="text-align: center;">4.9%</td> <td style="text-align: center;">10.3%</td> <td style="text-align: center;">1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td style="text-align: center;">86.5%</td> <td style="text-align: center;">2.7%</td> <td style="text-align: center;">10.8%</td> <td style="text-align: center;">0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.87	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.07	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.3	64.3	62.5	56.5	65.1	65.7
Medium Trucks:	59.1	58.4	52.1	50.5	59.0	59.2
Heavy Trucks:	59.9	59.4	50.3	51.6	59.9	60.0
Vehicle Noise:	67.2	66.3	63.1	58.4	67.0	67.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	85	183	393
CNEL:	42	91	196	422

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Ridge Valley (O Street)  
 Road Segment: Portola Parkway to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,575 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,037 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.79	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.03	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.99	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.4	61.6	55.5	64.2	64.8
Medium Trucks:	58.2	57.5	51.1	49.6	58.1	58.3
Heavy Trucks:	59.0	58.4	49.4	50.6	59.0	59.1
Vehicle Noise:	66.3	65.4	62.2	57.5	66.1	66.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	342
CNEL:	37	79	170	367

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan Project Name: Irvine GP  
 Road Name: Ridge Valley (O Street) Job Number: 15937  
 Road Segment: Trabuco Road (Great Park Boulevard) to Marine Way

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,130 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 918 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 45 mph																					
Near/Far Lane Distance: 48 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 62.5 feet	Heavy Trucks: 8.006 <span style="float:right">Grade Adjustment: 0.0</span>																				
Centerline Dist. to Observer: 62.5 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet																					
Road Grade: 0.0%																					
Left View: -90.0 degrees																					
Right View: 90.0 degrees																					
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786																				
	Medium Trucks: 57.717																				
	Heavy Trucks: 57.787																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.52	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.9	62.8	61.1	55.0	63.6	64.2
Medium Trucks:	57.7	57.0	50.6	49.1	57.5	57.8
Heavy Trucks:	58.5	57.9	48.9	50.1	58.5	58.6
Vehicle Noise:	65.7	64.8	61.7	57.0	65.5	66.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	68	146	315
CNEL:	34	73	157	338



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Ridge Valley (O Street)  
 Road Segment: Ranchland to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	935 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	77 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-13.08	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-30.31	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-34.27	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.0	55.0	53.2	47.1	55.8	56.4
Medium Trucks:	49.8	49.1	42.8	41.2	49.7	49.9
Heavy Trucks:	50.6	50.0	41.0	42.2	50.6	50.7
Vehicle Noise:	57.9	56.9	53.8	49.1	57.7	58.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	12	26	56
CNEL:	6	13	28	61

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Ridgeline Drive  
 Road Segment: Concordia East to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,575 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,285 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 35 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 40.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 40.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 32.140				
Road Grade: 0.0%		Medium Trucks: 32.016				
Left View: -90.0 degrees		Heavy Trucks: 32.141				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	0.23	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-17.01	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	81.57	-20.96	2.78	-1.20	-5.56	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	65.0	63.3	57.2	65.8	66.5
Medium Trucks:	60.3	59.7	53.3	51.8	60.2	60.5
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	68.3	67.5	64.0	59.6	68.2	68.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	140	301
CNEL:	32	69	149	322

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Ridgeline Drive  
 Road Segment: Turtle Rock Drive to San Simeon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,257 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,176 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 32.140 Medium Trucks: 32.016 Heavy Trucks: 32.141																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-0.15	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-17.39	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	81.57	-21.35	2.78	-1.20	-5.56	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.7	64.7	62.9	56.8	65.5	66.1	
Medium Trucks:	60.0	59.3	52.9	51.4	59.8	60.1	
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9	
Vehicle Noise:	67.9	67.1	63.6	59.2	67.8	68.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	132	284
CNEL:	30	65	141	303

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Rockfield Avenue  
 Road Segment: Whatney to McLaren

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,880 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,310 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.78	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.02	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.97	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.4	64.4	62.6	56.6	65.2	65.8
Medium Trucks:	59.2	58.5	52.2	50.6	59.1	59.3
Heavy Trucks:	60.0	59.4	50.4	51.7	60.0	60.1
Vehicle Noise:	67.3	66.4	63.2	58.5	67.1	67.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	86	185	399
CNEL:	43	92	199	428

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Rockfield Avenue  
 Road Segment: Bake Parkway to Whatney

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,694 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 552 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.72	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.7	60.6	58.9	52.8	61.4	62.0	
Medium Trucks:	55.4	54.8	48.4	46.9	55.3	55.6	
Heavy Trucks:	56.3	55.7	46.7	47.9	56.3	56.4	
Vehicle Noise:	63.5	62.6	59.5	54.8	63.3	63.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	48	104	224
CNEL:	24	52	112	241

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Rockfield Avenue  
 Road Segment: Thomas to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	5,145 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	424 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-5.67	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-22.91	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-26.87	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.5	59.5	57.7	51.7	60.3	60.9
Medium Trucks:	54.3	53.6	47.3	45.7	54.2	54.4
Heavy Trucks:	55.1	54.6	45.5	46.8	55.1	55.2
Vehicle Noise:	62.4	61.5	58.3	53.6	62.2	62.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	41	87	188
CNEL:	20	44	94	202

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Roosevelt  
 Road Segment: Jeffrey Road to Vision

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,443 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,274 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.39	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.63	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.58	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.9	62.8	61.0	55.0	63.6	64.2
Medium Trucks:	57.9	57.2	50.8	49.3	57.7	58.0
Heavy Trucks:	59.2	58.6	49.5	50.8	59.1	59.3
Vehicle Noise:	65.9	65.0	61.7	57.2	65.7	66.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	70	150	323
CNEL:	35	75	161	346

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Roosevelt  
 Road Segment: Yale Avenue to Van Buren

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,812 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 727 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 29.547 Medium Trucks: 29.411 Heavy Trucks: 29.547																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.82	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	77.72	-20.06	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	82.99	-24.02	3.32	-1.20	-5.77	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.8	64.7	63.0	56.9	65.5	66.2	
Medium Trucks:	59.8	59.1	52.8	51.2	59.7	59.9	
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2	
Vehicle Noise:	67.8	66.9	63.6	59.1	67.6	68.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	45	97	209
CNEL:	22	48	104	223



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Roosevelt  
 Road Segment: Vision to Bay Tree

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,654 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,209 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.62	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.85	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.81	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.7	62.6	60.8	54.8	63.4	64.0	
Medium Trucks:	57.6	57.0	50.6	49.0	57.5	57.7	
Heavy Trucks:	58.9	58.4	49.3	50.6	58.9	59.0	
Vehicle Noise:	65.7	64.8	61.5	56.9	65.5	65.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	145	312
CNEL:	33	72	155	334

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Roosevelt  
 Road Segment: Nimitz to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,187 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,170 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.76	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.99	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.95	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.5	62.4	60.7	54.6	63.2	63.9
Medium Trucks:	57.5	56.8	50.4	48.9	57.4	57.6
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	65.5	64.6	61.3	56.8	65.3	65.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	66	142	305
CNEL:	33	70	152	327

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Roosevelt  
 Road Segment: Tulip (Road C) to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,745 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,134 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.89	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.09	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.4	62.3	60.5	54.5	63.1	63.7
Medium Trucks:	57.3	56.7	50.3	48.8	57.2	57.5
Heavy Trucks:	58.7	58.1	49.0	50.3	58.6	58.8
Vehicle Noise:	65.4	64.5	61.2	56.7	65.2	65.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	139	299
CNEL:	32	69	149	320

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Royal Oak  
 Road Segment: Alton Parkway to Eaglecreek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,830 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	398 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	30.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	30.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 29.547				
Road Grade:	0.0%	Medium Trucks: 29.411				
Left View:	-90.0 degrees	Heavy Trucks: 29.547				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-4.86	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	75.75	-22.09	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	81.57	-26.05	3.32	-1.20	-5.77	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.6	60.5	58.7	52.7	61.3	61.9
Medium Trucks:	55.8	55.1	48.8	47.2	55.7	55.9
Heavy Trucks:	57.6	57.1	48.0	49.3	57.6	57.8
Vehicle Noise:	63.8	62.9	59.5	55.1	63.6	64.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	113
CNEL:	12	26	56	120

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: Oak Canyon Drive to Burt Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 48,414 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,994 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.61	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.63	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.59	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	68.8	67.1	61.0	69.7	70.3
Medium Trucks:	63.5	62.8	56.4	54.9	63.4	63.6
Heavy Trucks:	63.9	63.3	54.3	55.5	63.9	64.0
Vehicle Noise:	71.6	70.7	67.6	62.9	71.4	71.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	104	225	484	1,043
CNEL:	112	241	520	1,120

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: Irvine Center Drive to Oak Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,483 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,752 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.33	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.90	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.86	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.6	68.6	66.8	60.8	69.4	70.0	
Medium Trucks:	63.2	62.5	56.2	54.6	63.1	63.3	
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7	
Vehicle Noise:	71.3	70.4	67.4	62.6	71.1	71.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	464	1,000
CNEL:	107	232	499	1,075

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-405 NB Off-Ramp to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,364 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,660 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 47.329				
Road Grade: 0.0%	Medium Trucks: 47.244				
Left View: -90.0 degrees	Heavy Trucks: 47.329				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.23	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.01	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.97	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.5	71.4	69.7	63.6	72.2	72.8
Medium Trucks:	66.1	65.4	59.0	57.5	65.9	66.2
Heavy Trucks:	66.5	65.9	56.8	58.1	66.4	66.6
Vehicle Noise:	74.2	73.3	70.2	65.4	74.0	74.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	111	238	513	1,106
CNEL:	119	256	551	1,188

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: Burt Road to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 51,493 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,248 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.87	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.36	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.32	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	69.5	67.8	61.7	70.3	70.9
Medium Trucks:	64.2	63.5	57.1	55.6	64.0	64.3
Heavy Trucks:	64.6	64.0	54.9	56.2	64.6	64.7
Vehicle Noise:	72.3	71.4	68.3	63.5	72.1	72.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	237	512	1,102
CNEL:	118	255	550	1,184



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: Marine to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 59,568 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,914 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.51	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-12.73	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-16.69	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.6	71.5	69.8	63.7	72.3	72.9
Medium Trucks:	66.2	65.5	59.1	57.6	66.0	66.3
Heavy Trucks:	66.6	66.0	57.0	58.2	66.6	66.7
Vehicle Noise:	74.3	73.4	70.3	65.5	74.1	74.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	188	404	871	1,876
CNEL:	202	434	935	2,015

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: Trabuco Road to Towngate

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 42,099 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,473 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.00	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.24	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.20	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.2	66.5	60.4	69.0	69.6
Medium Trucks:	62.9	62.2	55.8	54.3	62.8	63.0
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4
Vehicle Noise:	71.0	70.1	67.0	62.3	70.8	71.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	95	205	441	950
CNEL:	102	220	474	1,021

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: Barranca Parkway to Waterworks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 36,308 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,995 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.36	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.88	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.84	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.8	59.8	68.4	69.0	
Medium Trucks:	62.2	61.6	55.2	53.6	62.1	62.3	
Heavy Trucks:	62.6	62.1	53.0	54.3	62.6	62.8	
Vehicle Noise:	70.4	69.4	66.4	61.6	70.2	70.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	400	861
CNEL:	92	199	429	925

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-5 SB Off-Ramp to Marine

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 49,577 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,090 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.71	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-13.53	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-17.49	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.8	70.7	69.0	62.9	71.5	72.1
Medium Trucks:	65.4	64.7	58.3	56.8	65.3	65.5
Heavy Trucks:	65.8	65.2	56.2	57.4	65.8	65.9
Vehicle Noise:	73.5	72.6	69.5	64.8	73.3	73.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	166	358	770	1,660
CNEL:	178	384	828	1,783

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: Hospital to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,191 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,821 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.10	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.14	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.10	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.3	65.6	59.5	68.1	68.7	
Medium Trucks:	62.0	61.3	54.9	53.4	61.8	62.1	
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5	
Vehicle Noise:	70.1	69.2	66.1	61.3	69.9	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	178	384	827
CNEL:	89	191	412	889

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: Nightmist to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,045 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,799 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.39	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-13.85	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-17.81	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.4	68.7	62.6	71.2	71.8
Medium Trucks:	65.0	64.4	58.0	56.5	64.9	65.2
Heavy Trucks:	65.5	64.9	55.8	57.1	65.4	65.6
Vehicle Noise:	73.2	72.3	69.2	64.4	73.0	73.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	158	340	733	1,580
CNEL:	170	366	788	1,697

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,745 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,866 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.16	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.07	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.03	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.4	70.4	68.6	62.5	71.2	71.8
Medium Trucks:	65.0	64.3	58.0	56.4	64.9	65.1
Heavy Trucks:	65.4	64.8	55.8	57.0	65.4	65.5
Vehicle Noise:	73.1	72.2	69.2	64.4	72.9	73.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	94	202	436	939
CNEL:	101	217	469	1,009

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-5 NB Off-Ramp to Nightmist

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,445 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,832 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.43	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-13.81	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-17.77	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.5	68.7	62.6	71.3	71.9
Medium Trucks:	65.1	64.4	58.1	56.5	65.0	65.2
Heavy Trucks:	65.5	64.9	55.9	57.1	65.5	65.6
Vehicle Noise:	73.2	72.3	69.3	64.5	73.0	73.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	159	342	738	1,589
CNEL:	171	368	792	1,707



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: Towngate to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 35,972 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,968 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.32	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.92	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.88	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.6	65.8	59.7	68.4	69.0
Medium Trucks:	62.2	61.5	55.2	53.6	62.1	62.3
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	70.3	69.4	66.4	61.6	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	184	397	855
CNEL:	92	198	427	919

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: Waterworks to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,409 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,591 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.73	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.51	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.47	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	67.0	65.2	59.1	67.8	68.4
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	69.7	68.8	65.8	61.0	69.5	70.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	168	363	782
CNEL:	84	181	390	840

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: Irvine Boulevard to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,121 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,495 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.86	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.2	64.5	58.4	67.0	67.6
Medium Trucks:	60.9	60.2	53.8	52.3	60.7	61.0
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4
Vehicle Noise:	69.0	68.1	65.0	60.2	68.8	69.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	112	241	519
CNEL:	56	120	259	558

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: Roosevelt to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,585 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,266 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.73	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-14.51	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-18.46	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.8	68.0	61.9	70.6	71.2
Medium Trucks:	64.4	63.7	57.4	55.8	64.3	64.5
Heavy Trucks:	64.8	64.2	55.2	56.4	64.8	64.9
Vehicle Noise:	72.5	71.6	68.6	63.8	72.3	72.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	308	663	1,428
CNEL:	153	331	712	1,535

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: Alton Parkway to Hospital

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,835 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,626 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.78	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.45	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.41	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.7	59.6	68.2	68.8
Medium Trucks:	62.1	61.4	55.0	53.5	61.9	62.2
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	70.2	69.3	66.2	61.5	70.0	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	172	371	800
CNEL:	86	185	399	859

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Sand Canyon/Shady Canyon  
 Road Segment: Quail Hill Parkway to I-405 SB Ramps

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,794 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,881 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.33	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.90	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.86	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.8	60.7	69.3	69.9
Medium Trucks:	63.2	62.5	56.1	54.6	63.0	63.3
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7
Vehicle Noise:	71.3	70.4	67.3	62.5	71.1	71.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	153	329	709
CNEL:	76	164	354	762

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Scientific Way  
 Road Segment: Irvine Center Drive to Wald

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,616 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 133 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-9.61	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-26.85	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-30.81	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.4	51.4	49.6	43.6	52.2	52.8
Medium Trucks:	46.7	46.0	39.6	38.1	46.5	46.8
Heavy Trucks:	48.5	47.9	38.9	40.1	48.5	48.6
Vehicle Noise:	54.7	53.8	50.4	46.0	54.5	54.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	12	27	58
CNEL:	6	13	29	62

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Shady Canyon Drive  
 Road Segment: Culver Drive/Bonita Canyon Drive to Cloverfield

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,410 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	694 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.00	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-21.23	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-25.19	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.8	64.0	58.0	66.6	67.2
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5
Heavy Trucks:	60.8	60.2	51.2	52.4	60.8	60.9
Vehicle Noise:	68.5	67.6	64.6	59.8	68.3	68.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	135	291
CNEL:	31	67	145	312



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Shady Canyon Drive  
 Road Segment: Bommer Canyon Road to Sunnyhill

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,350 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 606 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.58	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-21.82	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.78	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.3	64.3	62.5	56.4	65.1	65.7	
Medium Trucks:	58.9	58.2	51.9	50.3	58.8	59.0	
Heavy Trucks:	59.3	58.7	49.7	50.9	59.3	59.4	
Vehicle Noise:	67.0	66.1	63.1	58.3	66.8	67.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	66	143	307
CNEL:	33	71	153	330

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Skyhawk  
 Road Segment: Great Park Boulevard to Marine Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,035 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 993 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 25 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	0.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-16.67	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-20.62	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.1	56.0	54.2	48.2	56.8	57.4
Medium Trucks:	51.9	51.2	44.9	43.3	51.8	52.0
Heavy Trucks:	55.1	54.5	45.5	46.7	55.1	55.2
Vehicle Noise:	59.9	59.1	55.2	51.3	59.8	60.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	13	28	60	130
CNEL:	14	30	64	138

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Southwood  
 Road Segment: Yale Avenue to Colt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,003 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	248 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-6.92	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-24.16	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-28.11	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.0	57.0	55.2	49.1	57.8	58.4
Medium Trucks:	52.2	51.6	45.2	43.7	52.1	52.4
Heavy Trucks:	54.1	53.5	44.5	45.7	54.1	54.2
Vehicle Noise:	60.2	59.4	55.9	51.5	60.1	60.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	18	38	82
CNEL:	9	19	40	87

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Southwood  
 Road Segment: Challenger to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,867 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 237 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-7.12	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-24.36	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-28.31	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.8	56.8	55.0	48.9	57.6	58.2
Medium Trucks:	52.0	51.4	45.0	43.5	51.9	52.2
Heavy Trucks:	53.9	53.3	44.3	45.5	53.9	54.0
Vehicle Noise:	60.0	59.2	55.7	51.3	59.9	60.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	79
CNEL:	8	18	39	85

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Spectrum Center Drive (Fortune)  
 Road Segment: Pacifica to Quassar Drive (Spectrum )

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	11,702 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	965 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		57.786		
Left View:	-90.0 degrees	Medium Trucks:		57.717		
Right View:	90.0 degrees	Heavy Trucks:		57.787		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.58	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.54	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.2	58.1	56.3	50.3	58.9	59.5
Medium Trucks:	53.7	53.0	46.6	45.1	53.5	53.8
Heavy Trucks:	56.1	55.6	46.5	47.8	56.1	56.2
Vehicle Noise:	61.7	60.8	57.2	53.0	61.5	61.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	79	169
CNEL:	18	39	84	181

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Spectrum Center Drive (Fortune)  
 Road Segment: Quassar Drive (Spectrum ) to Gatewayb

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,210 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,090 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	0.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.01	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.7	58.6	56.9	50.8	59.4	60.0
Medium Trucks:	54.2	53.5	47.2	45.6	54.1	54.3
Heavy Trucks:	56.7	56.1	47.0	48.3	56.6	56.8
Vehicle Noise:	62.2	61.3	57.7	53.5	62.0	62.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	40	85	184
CNEL:	20	42	91	196

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Sunnyhill  
 Road Segment: Shady Canyon Drive to Turtle Rock Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,827 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 481 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-2.58	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-19.82	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-23.77	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	53.9	52.8	51.1	45.0	53.6	54.3	
Medium Trucks:	48.7	48.1	41.7	40.2	48.6	48.9	
Heavy Trucks:	52.0	51.4	42.3	43.6	51.9	52.1	
Vehicle Noise:	56.8	56.0	52.0	48.1	56.6	57.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	80
CNEL:	9	18	40	85

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Technology Drive  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,461 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,265 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.64	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.59	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.8	65.0	58.9	67.6	68.2
Medium Trucks:	61.6	60.9	54.5	53.0	61.5	61.7
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	69.7	68.7	65.6	60.9	69.5	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	124	267	575
CNEL:	62	133	286	617



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan	Project Name: Irvine GP
Road Name: Technology Drive	Job Number: 15937
Road Segment: Old Laguna Canyon Road to I-5/SR-133 Undercrossing	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,421 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,190 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.20	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.39	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.0	64.0	62.2	56.1	64.8	65.4	
Medium Trucks:	58.8	58.1	51.7	50.2	58.7	58.9	
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7	
Vehicle Noise:	66.9	65.9	62.8	58.1	66.7	67.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	81	174	374
CNEL:	40	87	186	402

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Technology Drive  
 Road Segment: I-5/SR-133 to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,458 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 945 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.20	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.39	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.0	63.0	61.2	55.1	63.8	64.4
Medium Trucks:	57.8	57.1	50.7	49.2	57.7	57.9
Heavy Trucks:	58.6	58.0	49.0	50.2	58.6	58.7
Vehicle Noise:	65.9	64.9	61.8	57.1	65.7	66.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	149	321
CNEL:	34	74	160	344

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Technology Drive  
 Road Segment: Ada to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,747 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	227 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-8.40	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-25.64	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-29.59	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.8	56.8	55.0	48.9	57.6	58.2
Medium Trucks:	51.6	50.9	44.5	43.0	51.5	51.7
Heavy Trucks:	52.4	51.8	42.8	44.0	52.4	52.5
Vehicle Noise:	59.7	58.7	55.6	50.9	59.5	59.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	27	58	124
CNEL:	13	29	62	133

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Toledo Way  
 Road Segment: Bake Parkway to City Limits

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,101 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 668 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 50 mph																					
Near/Far Lane Distance: 48 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 62.5 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 62.5 feet																					
Barrier Distance to Observer: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Observer Height (Above Pad): 5.0 feet	Autos: 57.786																				
Pad Elevation: 0.0 feet	Medium Trucks: 57.717																				
Road Elevation: 0.0 feet	Heavy Trucks: 57.787																				
Road Grade: 0.0%																					
Left View: -90.0 degrees																					
Right View: 90.0 degrees																					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.16	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-21.40	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-25.35	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.8	62.7	61.0	54.9	63.5	64.1
Medium Trucks:	57.4	56.7	50.3	48.8	57.2	57.5
Heavy Trucks:	57.8	57.2	48.2	49.4	57.8	57.9
Vehicle Noise:	65.5	64.6	61.5	56.7	65.3	65.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	141	304
CNEL:	33	70	151	326

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Toledo Way  
 Road Segment: Goodyear to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,577 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	543 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.06	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.30	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.26	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.9	61.8	60.1	54.0	62.6	63.2
Medium Trucks:	56.5	55.8	49.4	47.9	56.3	56.6
Heavy Trucks:	56.9	56.3	47.3	48.5	56.9	57.0
Vehicle Noise:	64.6	63.7	60.6	55.8	64.4	64.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	57	123	264
CNEL:	28	61	132	284

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Toledo Way  
 Road Segment: Alton Parkway to Parker

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,118 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	505 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.38	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.62	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.57	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.6	61.5	59.7	53.7	62.3	62.9
Medium Trucks:	56.1	55.5	49.1	47.6	56.0	56.3
Heavy Trucks:	56.6	56.0	46.9	48.2	56.5	56.7
Vehicle Noise:	64.3	63.4	60.3	55.5	64.1	64.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	117	252
CNEL:	27	58	126	271

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Trabuco Road  
 Road Segment: Keystone to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,020 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,157 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.51	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.9	63.8	62.1	56.0	64.6	65.2	
Medium Trucks:	58.7	58.0	51.6	50.1	58.5	58.8	
Heavy Trucks:	59.5	58.9	49.9	51.1	59.5	59.6	
Vehicle Noise:	66.7	65.8	62.7	58.0	66.5	67.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	171	367
CNEL:	39	85	183	394

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Trabuco Road  
 Road Segment: Jeffrey Road to Keystone

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,755 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,135 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.40	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.64	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.60	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.8	63.7	62.0	55.9	64.6	65.2
Medium Trucks:	58.6	57.9	51.5	50.0	58.5	58.7
Heavy Trucks:	59.4	58.8	49.8	51.0	59.4	59.5
Vehicle Noise:	66.6	65.7	62.6	57.9	66.5	66.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	168	363
CNEL:	39	84	181	389



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Trabuco Road  
 Road Segment: Culver Drive to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,898 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,064 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.68	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.92	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.88	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.5	63.5	61.7	55.6	64.3	64.9
Medium Trucks:	58.3	57.6	51.3	49.7	58.2	58.4
Heavy Trucks:	59.1	58.5	49.5	50.8	59.1	59.2
Vehicle Noise:	66.4	65.5	62.3	57.6	66.2	66.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	75	161	347
CNEL:	37	80	173	373

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Trabuco Road  
 Road Segment: Monroe to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,600 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,040 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.78	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.02	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.98	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.4	61.6	55.5	64.2	64.8
Medium Trucks:	58.2	57.5	51.2	49.6	58.1	58.3
Heavy Trucks:	59.0	58.4	49.4	50.7	59.0	59.1
Vehicle Noise:	66.3	65.4	62.2	57.5	66.1	66.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	342
CNEL:	37	79	170	367

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Trabuco Road  
 Road Segment: I-5 NB Off-Ramp to Monroe

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,040 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.78	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.02	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.98	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.4	61.6	55.5	64.2	64.8
Medium Trucks:	58.2	57.5	51.2	49.6	58.1	58.3
Heavy Trucks:	59.0	58.4	49.4	50.7	59.0	59.1
Vehicle Noise:	66.3	65.4	62.2	57.5	66.1	66.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	342
CNEL:	37	79	170	367

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Trabuco Road  
 Road Segment: Yale Avenue to Remington

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,025 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 910 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.36	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.60	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.56	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.9	62.8	61.0	55.0	63.6	64.2
Medium Trucks:	57.6	56.9	50.6	49.0	57.5	57.7
Heavy Trucks:	58.4	57.9	48.8	50.1	58.4	58.6
Vehicle Noise:	65.7	64.8	61.6	57.0	65.5	66.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	145	313
CNEL:	34	72	156	336

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Trabuco Road  
 Road Segment: Remington to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,025 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 910 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.36	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.60	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.56	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.9	62.8	61.0	55.0	63.6	64.2
Medium Trucks:	57.6	56.9	50.6	49.0	57.5	57.7
Heavy Trucks:	58.4	57.9	48.8	50.1	58.4	58.6
Vehicle Noise:	65.7	64.8	61.6	57.0	65.5	66.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	145	313
CNEL:	34	72	156	336

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Turtle Ridge Drive  
 Road Segment: Federation Way to Bonita Canyon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,210 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,750 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.48	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.76	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.72	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.7	65.6	63.9	57.8	66.4	67.0	
Medium Trucks:	60.5	59.8	53.4	51.9	60.3	60.6	
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4	
Vehicle Noise:	68.5	67.6	64.5	59.8	68.3	68.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	104	225	484
CNEL:	52	112	241	519

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Turtle Rock Drive  
 Road Segment: Ridgeline to Willowleaf

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 8,148 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 672 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 37.138				
Road Grade: 0.0%	Medium Trucks: 37.030				
Left View: -90.0 degrees	Heavy Trucks: 37.139				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.68	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-20.91	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-24.87	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.4	64.4	62.6	56.5	65.2	65.8	
Medium Trucks:	59.2	58.5	52.2	50.6	59.1	59.3	
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1	
Vehicle Noise:	67.3	66.3	63.2	58.5	67.1	67.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	51	111	239
CNEL:	26	55	119	256

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Turtle Rock Drive  
 Road Segment: Silkwood to Sunnyhill

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,856 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 648 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.83	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-21.07	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-25.03	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.3	64.2	62.4	56.4	65.0	65.6
Medium Trucks:	59.0	58.4	52.0	50.5	58.9	59.1
Heavy Trucks:	59.9	59.3	50.2	51.5	59.8	60.0
Vehicle Noise:	67.1	66.2	63.0	58.4	66.9	67.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	233
CNEL:	25	54	116	250



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Turtle Rock Drive  
 Road Segment: Canyon Park to Ridgeline

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,963 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 574 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.36	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-21.60	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-25.55	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.7	63.7	61.9	55.9	64.5	65.1
Medium Trucks:	58.5	57.8	51.5	49.9	58.4	58.6
Heavy Trucks:	59.3	58.7	49.7	51.0	59.3	59.4
Vehicle Noise:	66.6	65.7	62.5	57.8	66.4	66.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	46	100	215
CNEL:	23	50	107	231

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Turtle Rock Drive  
 Road Segment: Sunnyhill to Southernwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 3,609 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 298 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 37.138				
Road Grade: 0.0%	Medium Trucks: 37.030				
Left View: -90.0 degrees	Heavy Trucks: 37.139				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-7.21	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-24.45	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-28.41	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	60.8	59.1	53.0	61.6	62.2
Medium Trucks:	55.7	55.0	48.6	47.1	55.5	55.8
Heavy Trucks:	56.5	55.9	46.9	48.1	56.5	56.6
Vehicle Noise:	63.7	62.8	59.7	55.0	63.5	64.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	30	64	139
CNEL:	15	32	69	149

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Turtle Rock Drive  
 Road Segment: Campus Drive to Hillgate

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,089 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	585 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.47	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	60.9	59.1	53.0	61.7	62.3
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8
Heavy Trucks:	56.5	55.9	46.9	48.2	56.5	56.6
Vehicle Noise:	63.8	62.9	59.7	55.0	63.6	64.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	233
CNEL:	25	54	116	250

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Turtle Rock Drive  
 Road Segment: Paseo Segovia to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,044 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	334 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	40.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	40.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 32.140				
Road Grade:	0.0%	Medium Trucks: 32.016				
Left View:	-90.0 degrees	Heavy Trucks: 32.141				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-6.72	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-23.96	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	84.25	-27.91	2.78	-1.20	-5.56	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.3	62.3	60.5	54.4	63.1	63.7
Medium Trucks:	57.1	56.4	50.1	48.5	57.0	57.2
Heavy Trucks:	57.9	57.3	48.3	49.5	57.9	58.0
Vehicle Noise:	65.2	64.2	61.1	56.4	65.0	65.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	40	86	185
CNEL:	20	43	92	198

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: University Drive  
 Road Segment: Golden Glow to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,438 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,254 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.72	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.48	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.6	67.8	61.8	70.4	71.0
Medium Trucks:	64.2	63.6	57.2	55.7	64.1	64.4
Heavy Trucks:	64.7	64.1	55.0	56.3	64.6	64.8
Vehicle Noise:	72.4	71.5	68.4	63.6	72.2	72.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	188	405	872
CNEL:	94	202	435	937

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: University Drive  
 Road Segment: Ridgeline to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 49,362 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,072 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.69	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.55	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-17.50	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	69.3	67.5	61.5	70.1	70.7
Medium Trucks:	63.9	63.3	56.9	55.3	63.8	64.0
Heavy Trucks:	64.3	63.8	54.7	56.0	64.3	64.4
Vehicle Noise:	72.1	71.1	68.1	63.3	71.9	72.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	215	463	997
CNEL:	107	231	497	1,072

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: University Drive  
 Road Segment: Culver Drive to Golden Glow

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 38,353 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,164 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.59	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.64	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.60	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	69.5	67.7	61.7	70.3	70.9
Medium Trucks:	64.1	63.4	57.1	55.5	64.0	64.2
Heavy Trucks:	64.5	63.9	54.9	56.2	64.5	64.6
Vehicle Noise:	72.2	71.3	68.3	63.5	72.0	72.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	184	397	856
CNEL:	92	198	427	920

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: University Drive  
 Road Segment: Yale Avenue to Ridgeline

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 35,343 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,916 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.00	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.96	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.2	69.1	67.4	61.3	69.9	70.5	
Medium Trucks:	63.8	63.1	56.7	55.2	63.6	63.9	
Heavy Trucks:	64.2	63.6	54.6	55.8	64.2	64.3	
Vehicle Noise:	71.9	71.0	67.9	63.1	71.7	72.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	175	376	811
CNEL:	87	188	404	871



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: University Drive  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 54,745 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,516 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.14	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.10	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.05	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	69.4	67.6	61.6	70.2	70.8
Medium Trucks:	64.0	63.3	57.0	55.4	63.9	64.1
Heavy Trucks:	64.4	63.8	54.8	56.1	64.4	64.5
Vehicle Noise:	72.1	71.2	68.2	63.4	71.9	72.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	244	525	1,132
CNEL:	122	262	564	1,216

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: University Drive  
 Road Segment: Mesa to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 42,065 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,470 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.00	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.24	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.20	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.3	71.2	69.4	63.4	72.0	72.6	
Medium Trucks:	65.8	65.2	58.8	57.2	65.7	65.9	
Heavy Trucks:	66.2	65.6	56.6	57.9	66.2	66.3	
Vehicle Noise:	73.9	73.0	70.0	65.2	73.8	74.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	107	230	495	1,067
CNEL:	115	247	532	1,147

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan	Project Name: Irvine GP
Road Name: University Drive	Job Number: 15937
Road Segment: MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 42,129 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,476 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">VehicleType</td> <td style="text-align: center;">Day</td> <td style="text-align: center;">Evening</td> <td style="text-align: center;">Night</td> <td style="text-align: center;">Daily</td> </tr> <tr> <td style="text-align: right;">Autos:</td> <td style="text-align: center;">77.5%</td> <td style="text-align: center;">12.9%</td> <td style="text-align: center;">9.6%</td> <td style="text-align: center;">97.42%</td> </tr> <tr> <td style="text-align: right;">Medium Trucks:</td> <td style="text-align: center;">84.8%</td> <td style="text-align: center;">4.9%</td> <td style="text-align: center;">10.3%</td> <td style="text-align: center;">1.84%</td> </tr> <tr> <td style="text-align: right;">Heavy Trucks:</td> <td style="text-align: center;">86.5%</td> <td style="text-align: center;">2.7%</td> <td style="text-align: center;">10.8%</td> <td style="text-align: center;">0.74%</td> </tr> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.00	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.24	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.19	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.3	71.2	69.4	63.4	72.0	72.6	
Medium Trucks:	65.8	65.2	58.8	57.3	65.7	65.9	
Heavy Trucks:	66.2	65.7	56.6	57.9	66.2	66.3	
Vehicle Noise:	74.0	73.0	70.0	65.2	73.8	74.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	107	230	496	1,068
CNEL:	115	247	533	1,148

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: University Drive  
 Road Segment: California Avenue to Mesa

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 40,950 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,378 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.88	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.36	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.32	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.1	71.1	69.3	63.3	71.9	72.5	
Medium Trucks:	65.7	65.0	58.7	57.1	65.6	65.8	
Heavy Trucks:	66.1	65.5	56.5	57.7	66.1	66.2	
Vehicle Noise:	73.8	72.9	69.9	65.1	73.6	74.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	105	226	487	1,048
CNEL:	113	243	523	1,126

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: University Drive  
 Road Segment: Campus Drive to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,789 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,788 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.04	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.19	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.15	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0
Heavy Trucks:	62.3	61.7	52.7	54.0	62.3	62.4
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	381	821
CNEL:	88	190	409	882

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan	Project Name: Irvine GP
Road Name: University Drive	Job Number: 15937
Road Segment: SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 18,527 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 1,528 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 50 mph																					
Near/Far Lane Distance: 52 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 50.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 50.0 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 42.814																				
Left View: -90.0 degrees	Medium Trucks: 42.720																				
Right View: 90.0 degrees	Heavy Trucks: 42.814																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.57	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-17.80	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-21.76	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.3	66.5	60.5	69.1	69.7
Medium Trucks:	62.9	62.2	55.9	54.3	62.8	63.0
Heavy Trucks:	63.3	62.7	53.7	55.0	63.3	63.4
Vehicle Noise:	71.0	70.1	67.1	62.3	70.8	71.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	123	264	569
CNEL:	61	132	284	611

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan Project Name: Irvine GP  
 Road Name: University Drive Job Number: 15937  
 Road Segment: SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,273 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,580 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos: 77.5% 12.9% 9.6% 97.42% Medium Trucks: 84.8% 4.9% 10.3% 1.84% Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
	<b>Noise Source Elevations (in feet)</b>				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>				
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.49	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.0	67.0	65.2	59.1	67.8	68.4	
Medium Trucks:	61.6	60.9	54.5	53.0	61.5	61.7	
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1	
Vehicle Noise:	69.7	68.8	65.7	61.0	69.5	70.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	168	362	779
CNEL:	84	180	389	837

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: University Drive  
 Road Segment: San Joaquin to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,239 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,247 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.11	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.13	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.09	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.4	64.6	58.5	67.2	67.8
Medium Trucks:	61.0	60.3	53.9	52.4	60.9	61.1
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5
Vehicle Noise:	69.1	68.2	65.1	60.4	68.9	69.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	153	330	711
CNEL:	76	165	354	764



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: University Drive  
 Road Segment: Harvard Avenue to San Joaquin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,126 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,238 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.09	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.15	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.10	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.3	64.6	58.5	67.1	67.7
Medium Trucks:	61.0	60.3	53.9	52.4	60.8	61.1
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5
Vehicle Noise:	69.1	68.2	65.1	60.3	68.9	69.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	153	329	709
CNEL:	76	164	353	761

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Valley Oak Drive  
 Road Segment: Hawkcreek to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,681 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,129 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height:	0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.88	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.12	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.08	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	65.0	63.2	57.2	65.8	66.4
Medium Trucks:	59.6	59.0	52.6	51.1	59.5	59.8
Heavy Trucks:	60.1	59.5	50.4	51.7	60.0	60.2
Vehicle Noise:	67.8	66.9	63.8	59.0	67.6	68.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	93	200	431
CNEL:	46	100	215	463

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Valley Oak Drive  
 Road Segment: Irvine Center Drive to Oak Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,844 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 647 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.30	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-21.54	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.49	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.6	64.5	62.8	56.7	65.4	66.0	
Medium Trucks:	59.2	58.5	52.2	50.6	59.1	59.3	
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7	
Vehicle Noise:	67.3	66.4	63.3	58.6	67.1	67.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	149	321
CNEL:	34	74	160	345

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Valley Oak Drive  
 Road Segment: Barranca Parkway to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 8,042 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 663 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-21.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-25.38	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.8	62.7	60.9	54.9	63.5	64.1	
Medium Trucks:	57.3	56.7	50.3	48.8	57.2	57.4	
Heavy Trucks:	57.7	57.2	48.1	49.4	57.7	57.9	
Vehicle Noise:	65.5	64.5	61.5	56.7	65.3	65.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	140	302
CNEL:	32	70	151	325

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Valley Oak Drive  
 Road Segment: Alton Parkway to Hawkcreek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,753 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	557 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.95	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.19	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.14	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.0	61.9	60.2	54.1	62.7	63.4
Medium Trucks:	56.6	55.9	49.5	48.0	56.5	56.7
Heavy Trucks:	57.0	56.4	47.4	48.6	57.0	57.1
Vehicle Noise:	64.7	63.8	60.7	56.0	64.5	65.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	125	269
CNEL:	29	62	134	289

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Von Karman Avenue  
 Road Segment: Marriott to Morse Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,180 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,655 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.90	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.7	59.6	68.2	68.8
Medium Trucks:	62.3	61.6	55.2	53.7	62.1	62.4
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	70.3	69.4	66.3	61.6	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	138	297	639
CNEL:	69	148	318	686

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Von Karman Avenue  
 Road Segment: Michelson Drive to Quartz

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,568 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,522 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.07	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.17	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.13	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.2	65.5	59.4	68.0	68.6
Medium Trucks:	62.0	61.4	55.0	53.5	61.9	62.2
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0
Vehicle Noise:	70.1	69.2	66.1	61.4	69.9	70.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	287	618
CNEL:	66	143	308	663

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Von Karman Avenue  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,817 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,377 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.38	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	67.0	65.2	59.1	67.8	68.4
Medium Trucks:	61.8	61.1	54.7	53.2	61.7	61.9
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	69.9	69.0	65.8	61.1	69.7	70.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	128	276	594
CNEL:	64	137	296	637



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Von Karman Avenue  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 35,462 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,926 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.71	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.53	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	84.25	-18.48	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.6	64.8	58.8	67.4	68.0
Medium Trucks:	61.4	60.7	54.4	52.8	61.3	61.5
Heavy Trucks:	62.2	61.6	52.6	53.9	62.2	62.3
Vehicle Noise:	69.5	68.6	65.4	60.7	69.3	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	145	312	672
CNEL:	72	155	334	720

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Von Karman Avenue  
 Road Segment: Main Street to Anchor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,652 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,281 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.63	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.61	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.56	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	66.8	65.0	59.0	67.6	68.2	
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7	
Heavy Trucks:	62.4	61.9	52.8	54.1	62.4	62.6	
Vehicle Noise:	69.7	68.8	65.6	60.9	69.5	69.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	124	268	578
CNEL:	62	134	288	620

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Von Karman Avenue  
 Road Segment: Anchor to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,101 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,236 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.69	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.65	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	64.9	58.9	67.5	68.1
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5
Vehicle Noise:	69.6	68.7	65.5	60.9	69.4	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	123	265	570
CNEL:	61	132	284	612

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Von Karman Avenue  
 Road Segment: Morse to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,235 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,247 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.67	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.63	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	64.9	58.9	67.5	68.1
Medium Trucks:	61.5	60.9	54.5	53.0	61.4	61.7
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	69.6	68.7	65.6	60.9	69.4	69.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	123	265	572
CNEL:	61	132	285	614

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Von Karman Avenue  
 Road Segment: Martin to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,409 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,931 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.91	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.33	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.29	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.1	66.1	64.3	58.2	66.9	67.5	
Medium Trucks:	60.9	60.2	53.8	52.3	60.8	61.0	
Heavy Trucks:	61.7	61.1	52.1	53.3	61.7	61.8	
Vehicle Noise:	69.0	68.0	64.9	60.2	68.8	69.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	111	240	517
CNEL:	55	119	257	555

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Von Karman Avenue  
 Road Segment: Campus Drive to Martin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,065 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,903 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.84	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.40	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.35	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.0	64.2	58.2	66.8	67.4
Medium Trucks:	60.8	60.1	53.8	52.2	60.7	60.9
Heavy Trucks:	61.7	61.1	52.0	53.3	61.6	61.8
Vehicle Noise:	68.9	68.0	64.8	60.2	68.7	69.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	110	238	512
CNEL:	55	118	255	549

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Von Karman Avenue  
 Road Segment: Dupont Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,141 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,909 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.86	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.34	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.0	64.2	58.2	66.8	67.4
Medium Trucks:	60.8	60.2	53.8	52.3	60.7	60.9
Heavy Trucks:	61.7	61.1	52.0	53.3	61.7	61.8
Vehicle Noise:	68.9	68.0	64.9	60.2	68.7	69.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	111	238	513
CNEL:	55	119	255	550

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Walnut Avenue  
 Road Segment: Jeffrey Road to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,658 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,612 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.02	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.98	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.4	65.6	59.5	68.2	68.8
Medium Trucks:	62.2	61.5	55.2	53.6	62.1	62.3
Heavy Trucks:	63.0	62.4	53.4	54.7	63.0	63.1
Vehicle Noise:	70.3	69.4	66.2	61.5	70.1	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	293	632
CNEL:	68	146	315	678



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Walnut Avenue  
 Road Segment: Myford Road to Jamboree Road SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,679 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,789 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.66	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.62	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	64.0	57.9	66.5	67.1
Medium Trucks:	60.5	59.9	53.5	52.0	60.4	60.7
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5
Vehicle Noise:	68.6	67.7	64.6	59.9	68.4	68.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	106	228	491
CNEL:	53	114	245	527

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Walnut Avenue  
 Road Segment: The Mall Street to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,607 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,618 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.06	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	60.1	59.4	53.1	51.5	60.0	60.2
Heavy Trucks:	60.9	60.4	51.3	52.6	60.9	61.1
Vehicle Noise:	68.2	67.3	64.1	59.5	68.0	68.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	99	213	459
CNEL:	49	106	229	493

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Walnut Avenue  
 Road Segment: Harvard Avenue to The Mall Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,566 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,614 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.13	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.07	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	60.1	59.4	53.1	51.5	60.0	60.2
Heavy Trucks:	60.9	60.4	51.3	52.6	60.9	61.0
Vehicle Noise:	68.2	67.3	64.1	59.4	68.0	68.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	99	213	459
CNEL:	49	106	228	492

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Walnut Avenue  
 Road Segment: Franciscan Street to Ravenwood Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 18,104 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,494 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.40	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.2	57.1	65.7	66.3
Medium Trucks:	59.8	59.1	52.7	51.2	59.6	59.9
Heavy Trucks:	60.6	60.0	51.0	52.2	60.6	60.7
Vehicle Noise:	67.8	66.9	63.8	59.1	67.6	68.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	94	202	436
CNEL:	47	101	217	467

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Walnut Avenue  
 Road Segment: Ravenwood Street to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,267 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,507 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.41	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.36	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.0	65.0	63.2	57.2	65.8	66.4	
Medium Trucks:	59.8	59.1	52.8	51.2	59.7	59.9	
Heavy Trucks:	60.6	60.1	51.0	52.3	60.6	60.8	
Vehicle Noise:	67.9	67.0	63.8	59.1	67.7	68.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	94	203	438
CNEL:	47	101	218	470

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Walnut Avenue  
 Road Segment: Culver Drive to Franciscan Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,122 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,495 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.20	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.44	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.40	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.0	64.9	63.2	57.1	65.7	66.4	
Medium Trucks:	59.8	59.1	52.7	51.2	59.7	59.9	
Heavy Trucks:	60.6	60.0	51.0	52.2	60.6	60.7	
Vehicle Noise:	67.8	66.9	63.8	59.1	67.7	68.1	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	94	202	436
CNEL:	47	101	217	468

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Walnut Avenue  
 Road Segment: Peters Canyon Road to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,611 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,948 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.94	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.29	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.25	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.5	64.4	62.7	56.6	65.2	65.9
Medium Trucks:	59.3	58.6	52.2	50.7	59.1	59.4
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2
Vehicle Noise:	67.3	66.4	63.3	58.6	67.2	67.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	117	252	542
CNEL:	58	125	270	582

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan Project Name: Irvine GP  
 Road Name: Walnut Avenue Job Number: 15937  
 Road Segment: Jamboree Road NB Off-Ramp to Peters Canyon Road

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,091 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,905 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.85	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.39	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.35	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.4	64.3	62.6	56.5	65.1	65.8
Medium Trucks:	59.2	58.5	52.1	50.6	59.0	59.3
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1
Vehicle Noise:	67.2	66.3	63.2	58.5	67.1	67.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	115	248	534
CNEL:	57	123	266	573



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Walnut Avenue  
 Road Segment: Yale Avenue to Kazan Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,893 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,146 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.36	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.60	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.55	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	63.8	62.0	56.0	64.6	65.2
Medium Trucks:	58.6	57.9	51.6	50.0	58.5	58.7
Heavy Trucks:	59.5	58.9	49.8	51.1	59.4	59.6
Vehicle Noise:	66.7	65.8	62.6	58.0	66.5	67.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	169	365
CNEL:	39	84	182	392

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Walnut Avenue  
 Road Segment: Wisteria to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,036 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,158 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.31	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.55	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.51	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	63.8	62.1	56.0	64.6	65.2
Medium Trucks:	58.7	58.0	51.6	50.1	58.5	58.8
Heavy Trucks:	59.5	58.9	49.9	51.1	59.5	59.6
Vehicle Noise:	66.7	65.8	62.7	58.0	66.5	67.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	171	368
CNEL:	39	85	183	394

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan	Project Name: Irvine GP
Road Name: Warner Avenue	Job Number: 15937
Road Segment: Jamboree Road SB Off-ramp to Construction North	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,474 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 2,349 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 45 mph																					
Near/Far Lane Distance: 48 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 62.5 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 62.5 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 57.786																				
Left View: -90.0 degrees	Medium Trucks: 57.717																				
Right View: 90.0 degrees	Heavy Trucks: 57.787																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.76	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.44	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	66.9	65.1	59.1	67.7	68.3
Medium Trucks:	61.7	61.1	54.7	53.2	61.6	61.8
Heavy Trucks:	62.6	62.0	52.9	54.2	62.6	62.7
Vehicle Noise:	69.8	68.9	65.8	61.1	69.6	70.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	273	589
CNEL:	63	136	293	632

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Warner Avenue  
 Road Segment: Construction North to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,399 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,600 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.09	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.15	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.10	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.3	65.2	63.5	57.4	66.0	66.6	
Medium Trucks:	60.1	59.4	53.0	51.5	59.9	60.2	
Heavy Trucks:	60.9	60.3	51.3	52.5	60.9	61.0	
Vehicle Noise:	68.1	67.2	64.1	59.4	67.9	68.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	98	212	456
CNEL:	49	105	227	489

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Warner Avenue  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,312 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,098 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.78	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.74	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.7	63.6	61.8	55.8	64.4	65.0
Medium Trucks:	58.4	57.8	51.4	49.9	58.3	58.5
Heavy Trucks:	59.3	58.7	49.6	50.9	59.3	59.4
Vehicle Noise:	66.5	65.6	62.4	57.8	66.3	66.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	165	355
CNEL:	38	82	177	381

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Warner Avenue  
 Road Segment: Santa Ynez to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	10,265 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	847 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.67	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.91	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.87	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.5	62.5	60.7	54.7	63.3	63.9
Medium Trucks:	57.3	56.6	50.3	48.7	57.2	57.4
Heavy Trucks:	58.1	57.6	48.5	49.8	58.1	58.2
Vehicle Noise:	65.4	64.5	61.3	56.6	65.2	65.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	139	298
CNEL:	32	69	149	320

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Warner Avenue  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,123 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	753 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.42	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.38	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.0	62.0	60.2	54.1	62.8	63.4
Medium Trucks:	56.8	56.1	49.8	48.2	56.7	56.9
Heavy Trucks:	57.6	57.0	48.0	49.3	57.6	57.7
Vehicle Noise:	64.9	64.0	60.8	56.1	64.7	65.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	59	128	276
CNEL:	30	64	137	296

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: West Yale Loop  
 Road Segment: Alton Parkway to Blue Lake North

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,388 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 775 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.55	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.79	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.74	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.7	60.7	58.9	52.8	61.5	62.1	
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8	
Heavy Trucks:	57.0	56.4	47.4	48.6	57.0	57.1	
Vehicle Noise:	63.7	62.8	59.6	55.0	63.5	64.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	232
CNEL:	25	53	115	248



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: West Yale Loop  
 Road Segment: Eagle Run to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,045 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 746 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.71	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.91	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.6	60.5	58.7	52.7	61.3	61.9
Medium Trucks:	55.5	54.9	48.5	46.9	55.4	55.6
Heavy Trucks:	56.8	56.3	47.2	48.5	56.8	57.0
Vehicle Noise:	63.6	62.7	59.4	54.8	63.4	63.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	49	105	226
CNEL:	24	52	112	242

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: West Yale Loop  
 Road Segment: Thunder Run to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,605 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 710 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.93	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.17	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.12	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.3	60.3	58.5	52.5	61.1	61.7
Medium Trucks:	55.3	54.6	48.3	46.7	55.2	55.4
Heavy Trucks:	56.6	56.0	47.0	48.3	56.6	56.7
Vehicle Noise:	63.3	62.5	59.2	54.6	63.2	63.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	102	219
CNEL:	23	50	109	234

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: West Yale Loop  
 Road Segment: Main Street to Timber Run

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,350 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	606 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.61	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.85	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.81	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.7	59.6	57.8	51.8	60.4	61.0
Medium Trucks:	54.6	54.0	47.6	46.0	54.5	54.7
Heavy Trucks:	55.9	55.4	46.3	47.6	55.9	56.1
Vehicle Noise:	62.7	61.8	58.5	53.9	62.5	62.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	42	91	197
CNEL:	21	45	98	211

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: West Yale Loop  
 Road Segment: Yale Avenue to Shorebird

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,121 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 505 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.41	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.60	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.9	58.8	57.0	51.0	59.6	60.2
Medium Trucks:	53.8	53.2	46.8	45.3	53.7	53.9
Heavy Trucks:	55.1	54.6	45.5	46.8	55.1	55.3
Vehicle Noise:	61.9	61.0	57.7	53.1	61.7	62.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	38	81	174
CNEL:	19	40	87	187

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: West Yale Loop  
 Road Segment: Warner Avenue to Stonecreek South

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 6,494 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 536 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.34	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.1	59.1	57.3	51.2	59.9	60.5
Medium Trucks:	54.1	53.4	47.1	45.5	54.0	54.2
Heavy Trucks:	55.4	54.8	45.8	47.0	55.4	55.5
Vehicle Noise:	62.1	61.2	58.0	53.4	61.9	62.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	84	181
CNEL:	19	42	90	194

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: West Yale Loop  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 6,497 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 536 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.34	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.1	59.1	57.3	51.2	59.9	60.5	
Medium Trucks:	54.1	53.4	47.1	45.5	54.0	54.2	
Heavy Trucks:	55.4	54.8	45.8	47.0	55.4	55.5	
Vehicle Noise:	62.1	61.2	58.0	53.4	61.9	62.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	84	181
CNEL:	19	42	90	194

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: West Yale Loop  
 Road Segment: Stonecreek North to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,909 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 488 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.75	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	59.7	58.6	56.9	50.8	59.4	60.0	
Medium Trucks:	53.7	53.0	46.6	45.1	53.6	53.8	
Heavy Trucks:	55.0	54.4	45.4	46.6	55.0	55.1	
Vehicle Noise:	61.7	60.8	57.5	53.0	61.5	62.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	79	170
CNEL:	18	39	85	182

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: West Yale Loop  
 Road Segment: Birdsong to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,221 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 513 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.58	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.53	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.9	58.9	57.1	51.0	59.7	60.3
Medium Trucks:	53.9	53.2	46.9	45.3	53.8	54.0
Heavy Trucks:	55.2	54.6	45.6	46.8	55.2	55.3
Vehicle Noise:	61.9	61.0	57.8	53.2	61.7	62.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	38	82	176
CNEL:	19	41	88	189



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Westwood  
 Road Segment: Yorktown to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,136 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	506 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-3.82	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-21.05	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-25.01	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.1	60.1	58.3	52.2	60.9	61.5
Medium Trucks:	55.3	54.7	48.3	46.8	55.2	55.5
Heavy Trucks:	57.2	56.6	47.6	48.8	57.2	57.3
Vehicle Noise:	63.3	62.5	59.0	54.6	63.2	63.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	13	28	61	131
CNEL:	14	30	65	140

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Westwood  
 Road Segment: Bryan Avenue to Leaf

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,830 vehicles	Autos:				15
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):				15
Peak Hour Volume:	316 vehicles	Heavy Trucks (3+ Axles):				15
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.86	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-23.10	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-27.06	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.1	58.0	56.2	50.2	58.8	59.4
Medium Trucks:	53.3	52.6	46.3	44.7	53.2	53.4
Heavy Trucks:	55.1	54.6	45.5	46.8	55.1	55.3
Vehicle Noise:	61.3	60.4	57.0	52.6	61.1	61.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	10	21	45	96
CNEL:	10	22	48	103

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Yale Avenue  
 Road Segment: Deerfield Avenue to Winvale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,521 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 868 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 37.138				
Road Grade: 0.0%		Medium Trucks: 37.030				
Left View: -90.0 degrees		Heavy Trucks: 37.139				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.57	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-19.80	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-23.76	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.5	63.7	57.6	66.3	66.9
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4
Heavy Trucks:	61.1	60.5	51.5	52.8	61.1	61.2
Vehicle Noise:	68.4	67.5	64.3	59.6	68.2	68.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	131	283
CNEL:	30	65	141	304

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Yale Avenue  
 Road Segment: Hicks Canyon Drive to Meadowood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,885 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 650 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.82	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-21.06	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-25.01	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.3	64.2	62.4	56.4	65.0	65.6	
Medium Trucks:	59.0	58.4	52.0	50.5	58.9	59.2	
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0	
Vehicle Noise:	67.1	66.2	63.1	58.4	66.9	67.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	234
CNEL:	25	54	116	251

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Yale Avenue  
 Road Segment: Walnut Avenue to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,427 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,190 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 40.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 40.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 32.140				
Road Grade: 0.0%		Medium Trucks: 32.016				
Left View: -90.0 degrees		Heavy Trucks: 32.141				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.19	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-18.43	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	84.25	-22.39	2.78	-1.20	-5.56	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	63.4	62.9	53.8	55.1	63.4	63.5
Vehicle Noise:	70.7	69.8	66.6	61.9	70.5	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	93	200	431
CNEL:	46	100	215	462

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Yale Avenue  
 Road Segment: Roosevelt to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,270 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,177 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.44	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.0	63.9	62.1	56.1	64.7	65.3
Medium Trucks:	58.7	58.1	51.7	50.2	58.6	58.8
Heavy Trucks:	59.6	59.0	49.9	51.2	59.6	59.7
Vehicle Noise:	66.8	65.9	62.8	58.1	66.6	67.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	80	173	372
CNEL:	40	86	185	399

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Yale Avenue  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,084 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,162 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.30	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.54	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.49	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.9	63.9	62.1	56.0	64.7	65.3	
Medium Trucks:	58.7	58.0	51.6	50.1	58.6	58.8	
Heavy Trucks:	59.5	58.9	49.9	51.1	59.5	59.6	
Vehicle Noise:	66.8	65.8	62.7	58.0	66.6	67.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	171	368
CNEL:	40	85	183	395

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Yale Avenue  
 Road Segment: West Yale Loop to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,606 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 875 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.72	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.7	62.6	60.9	54.8	63.4	64.0
Medium Trucks:	57.4	56.8	50.4	48.9	57.3	57.6
Heavy Trucks:	58.3	57.7	48.7	49.9	58.3	58.4
Vehicle Noise:	65.5	64.6	61.5	56.8	65.3	65.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	66	142	305
CNEL:	33	70	152	327



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Yale Avenue  
 Road Segment: Winvale Avenue to Karen Ann Lane

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,512 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 867 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.81	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.76	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.6	62.6	60.8	54.8	63.4	64.0	
Medium Trucks:	57.4	56.7	50.4	48.8	57.3	57.5	
Heavy Trucks:	58.2	57.7	48.6	49.9	58.2	58.4	
Vehicle Noise:	65.5	64.6	61.4	56.7	65.3	65.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	141	303
CNEL:	33	70	151	325

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Yale Avenue  
 Road Segment: Karen Ann Lane to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	10,512 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	867 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		57.786		
Left View:	-90.0 degrees	Medium Trucks:		57.717		
Right View:	90.0 degrees	Heavy Trucks:		57.787		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.81	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.76	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.6	62.6	60.8	54.8	63.4	64.0
Medium Trucks:	57.4	56.7	50.4	48.8	57.3	57.5
Heavy Trucks:	58.2	57.7	48.6	49.9	58.2	58.4
Vehicle Noise:	65.5	64.6	61.4	56.7	65.3	65.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	141	303
CNEL:	33	70	151	325

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Yale Avenue  
 Road Segment: Trabuco Road to Southwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,224 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 844 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.69	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.93	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.88	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.5	62.5	60.7	54.6	63.3	63.9
Medium Trucks:	57.3	56.6	50.2	48.7	57.2	57.4
Heavy Trucks:	58.1	57.5	48.5	49.7	58.1	58.2
Vehicle Noise:	65.4	64.5	61.3	56.6	65.2	65.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	298
CNEL:	32	69	148	319

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Yale Avenue  
 Road Segment: Southwood to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,061 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 830 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.76	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.00	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.95	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.5	62.4	60.6	54.6	63.2	63.8	
Medium Trucks:	57.2	56.5	50.2	48.6	57.1	57.3	
Heavy Trucks:	58.1	57.5	48.4	49.7	58.0	58.2	
Vehicle Noise:	65.3	64.4	61.2	56.6	65.1	65.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	137	294
CNEL:	32	68	147	316

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Yale Avenue  
 Road Segment: Northwood to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,496 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 783 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.25	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.21	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.2	62.1	60.4	54.3	62.9	63.5
Medium Trucks:	57.0	56.3	49.9	48.4	56.8	57.1
Heavy Trucks:	57.8	57.2	48.2	49.4	57.8	57.9
Vehicle Noise:	65.0	64.1	61.0	56.3	64.8	65.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	132	283
CNEL:	30	65	141	304

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Yale Avenue  
 Road Segment: Bryan Avenue to Monticello

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,368 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 773 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.07	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.31	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.26	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.1	62.1	60.3	54.3	62.9	63.5	
Medium Trucks:	56.9	56.2	49.9	48.3	56.8	57.0	
Heavy Trucks:	57.7	57.2	48.1	49.4	57.7	57.9	
Vehicle Noise:	65.0	64.1	60.9	56.2	64.8	65.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	60	130	281
CNEL:	30	65	140	301

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Yale Avenue  
 Road Segment: Irvine Boulevard to Park Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,567 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 624 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.19	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.2	61.2	59.4	53.3	62.0	62.6
Medium Trucks:	56.0	55.3	48.9	47.4	55.9	56.1
Heavy Trucks:	56.8	56.2	47.2	48.4	56.8	56.9
Vehicle Noise:	64.1	63.1	60.0	55.3	63.9	64.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	113	244
CNEL:	26	56	121	261

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Yale Avenue  
 Road Segment: University Drive to Royce

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,588 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	296 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	50.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 42.814				
Road Grade:	0.0%	Medium Trucks: 42.720				
Left View:	-90.0 degrees	Heavy Trucks: 42.814				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-7.24	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	79.45	-24.48	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	84.25	-28.43	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.9	59.9	58.1	52.0	60.7	61.3
Medium Trucks:	54.7	54.0	47.7	46.1	54.6	54.8
Heavy Trucks:	55.5	54.9	45.9	47.2	55.5	55.6
Vehicle Noise:	62.8	61.9	58.7	54.0	62.6	63.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	16	34	74	160
CNEL:	17	37	80	172



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Yale Court  
 Road Segment: Arborwood to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,351 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	524 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-2.21	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-19.44	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-23.40	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.2	56.1	54.3	48.3	56.9	57.5
Medium Trucks:	52.0	51.3	45.0	43.4	51.9	52.1
Heavy Trucks:	55.2	54.6	45.6	46.8	55.2	55.3
Vehicle Noise:	60.0	59.2	55.3	51.4	59.9	60.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	79
CNEL:	8	18	39	84

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Ada  
 Road Segment: Barranca Parway to Marine Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,114 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,907 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.36	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-15.87	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-19.83	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.4	65.7	59.6	68.2	68.9	
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6	
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9	
Vehicle Noise:	70.5	69.6	66.3	61.8	70.3	70.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	85	183	395
CNEL:	42	91	196	423

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Ada  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,726 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,617 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.74	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-14.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-18.46	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.0	65.9	64.2	58.1	66.7	67.3	
Medium Trucks:	61.0	60.3	53.9	52.4	60.9	61.1	
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4	
Vehicle Noise:	69.0	68.1	64.8	60.3	68.8	69.3	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	112	242	522
CNEL:	56	120	259	559

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Enterprise to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 81,472 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 6,721 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	5.87	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-11.37	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-15.33	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.2	71.1	69.3	63.3	71.9	72.5
Medium Trucks:	65.7	65.1	58.7	57.2	65.6	65.8
Heavy Trucks:	66.2	65.6	56.5	57.8	66.1	66.3
Vehicle Noise:	73.9	72.9	69.9	65.1	73.7	74.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	148	318	685	1,475
CNEL:	159	342	736	1,585

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: I-5 NB Off-Ramp to Technology Drive West

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 86,184 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 7,110 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	6.11	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-11.13	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-15.08	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.8	71.8	70.0	63.9	72.6	73.2	
Medium Trucks:	66.4	65.7	59.4	57.8	66.3	66.5	
Heavy Trucks:	66.8	66.2	57.2	58.4	66.8	66.9	
Vehicle Noise:	74.5	73.6	70.6	65.8	74.3	74.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	155	335	721	1,554
CNEL:	167	360	775	1,669

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: East Yale Loop to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,626 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,692 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.89	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.30	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.8	67.0	61.0	69.6	70.2
Medium Trucks:	63.4	62.7	56.4	54.8	63.3	63.5
Heavy Trucks:	63.8	63.2	54.2	55.5	63.8	63.9
Vehicle Noise:	71.5	70.6	67.6	62.8	71.3	71.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	357	769
CNEL:	83	178	383	826

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Gateway Boulevard to Enterprise

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 49,611 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,093 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.48	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.0	69.0	67.2	61.1	69.8	70.4	
Medium Trucks:	63.6	62.9	56.5	55.0	63.5	63.7	
Heavy Trucks:	64.0	63.4	54.4	55.6	64.0	64.1	
Vehicle Noise:	71.7	70.8	67.8	63.0	71.5	72.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	228	492	1,060
CNEL:	114	245	529	1,139

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Jeffrey Road to Royal Oak

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,386 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,177 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.97	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.27	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.22	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.9	67.9	66.1	60.0	68.7	69.3	
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6	
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0	
Vehicle Noise:	70.6	69.7	66.7	61.9	70.4	70.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	310	667
CNEL:	72	154	333	717



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Daimler Street to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,087 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,070 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.75	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.49	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.44	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.9	59.8	68.4	69.1
Medium Trucks:	62.3	61.6	55.2	53.7	62.2	62.4
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.4	69.5	66.4	61.7	70.2	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	139	299	645
CNEL:	69	149	322	693

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,096 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,070 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.75	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.49	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.44	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.9	59.8	68.4	69.1
Medium Trucks:	62.3	61.6	55.2	53.7	62.2	62.4
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.4	69.5	66.4	61.7	70.2	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	139	299	645
CNEL:	69	149	322	693

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: West Yale Loop to Lake Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,022 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,064 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.74	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.46	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.9	59.8	68.4	69.0	
Medium Trucks:	62.3	61.6	55.2	53.7	62.1	62.4	
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8	
Vehicle Noise:	70.4	69.5	66.4	61.6	70.2	70.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	139	299	644
CNEL:	69	149	321	692

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Technology Drive West to Ada

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 52,329 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,317 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.94	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.29	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.25	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.6	67.8	61.8	70.4	71.0
Medium Trucks:	64.2	63.6	57.2	55.6	64.1	64.3
Heavy Trucks:	64.6	64.1	55.0	56.3	64.6	64.7
Vehicle Noise:	72.4	71.4	68.4	63.6	72.2	72.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	111	240	517	1,114
CNEL:	120	258	556	1,197

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Creek Road to East Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,792 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,045 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.70	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.54	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.50	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.2	61.6	55.2	53.6	62.1	62.3
Heavy Trucks:	62.6	62.1	53.0	54.3	62.6	62.7
Vehicle Noise:	70.4	69.4	66.4	61.6	70.2	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	138	297	640
CNEL:	69	148	319	688

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Red Hill Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,224 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,998 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.64	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.60	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.7	59.7	68.3	68.9
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2
Heavy Trucks:	62.5	62.0	52.9	54.2	62.5	62.6
Vehicle Noise:	70.3	69.3	66.3	61.5	70.1	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	292	630
CNEL:	68	146	314	677

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Lake Road to Creek Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,527 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,941 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.47	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.72	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.4	65.6	59.5	68.2	68.8	
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1	
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5	
Vehicle Noise:	70.1	69.2	66.2	61.4	69.9	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	287	618
CNEL:	66	143	308	664

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Telemetry to Banting

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,656 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,952 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.50	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.74	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.70	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.4	65.6	59.6	68.2	68.8	
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1	
Heavy Trucks:	62.4	61.8	52.8	54.1	62.4	62.5	
Vehicle Noise:	70.1	69.2	66.2	61.4	70.0	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	134	288	620
CNEL:	67	144	309	666



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Irvine Boulevard to Commercentre

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 37,812 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,120 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.53	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.71	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.66	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5
Heavy Trucks:	62.8	62.2	53.2	54.4	62.8	62.9
Vehicle Noise:	70.5	69.6	66.6	61.8	70.3	70.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	191	411	884
CNEL:	95	205	441	950

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Jenner to Telemetry

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,298 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,922 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.43	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.81	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.77	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.3	65.6	59.5	68.1	68.7	
Medium Trucks:	62.0	61.3	54.9	53.4	61.8	62.1	
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5	
Vehicle Noise:	70.1	69.2	66.1	61.3	69.9	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	285	614
CNEL:	66	142	306	660

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Irvine Center Drive to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 41,786 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,447 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.97	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.27	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.23	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.3	68.2	66.4	60.4	69.0	69.6	
Medium Trucks:	62.8	62.2	55.8	54.3	62.7	63.0	
Heavy Trucks:	63.3	62.7	53.6	54.9	63.2	63.4	
Vehicle Noise:	71.0	70.0	67.0	62.2	70.8	71.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	95	204	439	945
CNEL:	102	219	471	1,016

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Sand Canyon Avenue to Hospital

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,925 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,046 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.43	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.81	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.77	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.7	70.6	68.9	62.8	71.4	72.0
Medium Trucks:	65.3	64.6	58.2	56.7	65.1	65.4
Heavy Trucks:	65.7	65.1	56.0	57.3	65.6	65.8
Vehicle Noise:	73.4	72.5	69.4	64.6	73.2	73.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	211	454	978
CNEL:	105	226	488	1,051

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Laguna Canyon Road to Jenner

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,824 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,883 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.85	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.2	65.5	59.4	68.0	68.6
Medium Trucks:	61.9	61.2	54.8	53.3	61.7	62.0
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.0	69.1	66.0	61.2	69.8	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	130	281	606
CNEL:	65	140	302	651

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative	Project Name: Irvine GP
Road Name: Alton Parkway	Job Number: 15937
Road Segment: Technology Drive East to Barranca Pkwy/Muirlands Blvd	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 41,377 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,414 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">VehicleType</td> <td style="text-align: center;">Day</td> <td style="text-align: center;">Evening</td> <td style="text-align: center;">Night</td> <td style="text-align: center;">Daily</td> </tr> <tr> <td style="text-align: center;">Autos:</td> <td style="text-align: center;">77.5%</td> <td style="text-align: center;">12.9%</td> <td style="text-align: center;">9.6%</td> <td style="text-align: center;">97.42%</td> </tr> <tr> <td style="text-align: center;">Medium Trucks:</td> <td style="text-align: center;">84.8%</td> <td style="text-align: center;">4.9%</td> <td style="text-align: center;">10.3%</td> <td style="text-align: center;">1.84%</td> </tr> <tr> <td style="text-align: center;">Heavy Trucks:</td> <td style="text-align: center;">86.5%</td> <td style="text-align: center;">2.7%</td> <td style="text-align: center;">10.8%</td> <td style="text-align: center;">0.74%</td> </tr> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.92	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.31	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.27	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.2	68.2	66.4	60.3	69.0	69.6	
Medium Trucks:	62.8	62.1	55.8	54.2	62.7	62.9	
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3	
Vehicle Noise:	70.9	70.0	67.0	62.2	70.7	71.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	94	202	436	939
CNEL:	101	217	468	1,009

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Royal Oak to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,871 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,804 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.08	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.04	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.1	67.0	65.3	59.2	67.9	68.5	
Medium Trucks:	61.7	61.0	54.6	53.1	61.6	61.8	
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2	
Vehicle Noise:	69.8	68.9	65.8	61.1	69.6	70.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	273	589
CNEL:	63	136	294	632

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Banting to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,569 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,779 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
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Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
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### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.09	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.14	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.10	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.2	59.2	67.8	68.4
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7
Heavy Trucks:	62.0	61.4	52.4	53.7	62.0	62.1
Vehicle Noise:	69.7	68.8	65.8	61.0	69.5	70.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	126	271	583
CNEL:	63	135	291	627



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative Project Name: Irvine GP  
 Road Name: Alton Parkway Job Number: 15937  
 Road Segment: Barranca Pkwy/Muirlands Blvd to Jeronimo Road

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,021 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,219 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.57	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.53	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	67.9	66.1	60.1	68.7	69.3
Medium Trucks:	62.5	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	63.0	62.4	53.3	54.6	62.9	63.1
Vehicle Noise:	70.7	69.8	66.7	61.9	70.5	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	195	419	903
CNEL:	97	209	450	970

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Ada to Technology Drive East

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 36,707 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,028 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.40	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.83	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.79	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.9	59.8	68.4	69.1	
Medium Trucks:	62.3	61.6	55.2	53.7	62.2	62.4	
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8	
Vehicle Noise:	70.4	69.5	66.4	61.7	70.2	70.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	187	402	867
CNEL:	93	201	432	932

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,273 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,672 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.41	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.37	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	65.0	58.9	67.5	68.1
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	61.8	61.2	52.1	53.4	61.7	61.9
Vehicle Noise:	69.5	68.6	65.5	60.7	69.3	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	121	260	560
CNEL:	60	130	279	601

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Jeronimo Road to Hughes

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,649 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,529 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.62	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.62	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.57	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.9	65.1	59.0	67.7	68.3
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	69.6	68.7	65.7	60.9	69.4	69.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	357	769
CNEL:	83	178	383	826

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Hughes to Morgan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,715 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,451 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.49	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.75	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.71	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	66.7	65.0	58.9	67.5	68.1	
Medium Trucks:	61.4	60.7	54.3	52.8	61.2	61.5	
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9	
Vehicle Noise:	69.5	68.6	65.5	60.7	69.3	69.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	350	753
CNEL:	81	174	376	809

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Morgan to Toledo Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,331 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,090 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.79	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.45	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.40	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.1	66.0	64.3	58.2	66.8	67.4	
Medium Trucks:	60.7	60.0	53.6	52.1	60.5	60.8	
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2	
Vehicle Noise:	68.8	67.9	64.8	60.0	68.6	69.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	146	314	677
CNEL:	73	157	338	727

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: San Marino to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,956 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,141 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.90	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.34	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.30	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.2	66.1	64.4	58.3	66.9	67.5	
Medium Trucks:	60.8	60.1	53.7	52.2	60.6	60.9	
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3	
Vehicle Noise:	68.9	68.0	64.9	60.2	68.7	69.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	148	319	688
CNEL:	74	159	343	739

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Jamboree Road to Murphy Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,156 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,075 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.76	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.48	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.43	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.0	64.2	58.2	66.8	67.4
Medium Trucks:	60.6	60.0	53.6	52.1	60.5	60.7
Heavy Trucks:	61.0	60.5	51.4	52.7	61.0	61.2
Vehicle Noise:	68.8	67.8	64.8	60.0	68.6	69.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	145	313	674
CNEL:	72	156	336	724



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Hospital to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,499 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,104 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.82	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.42	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.37	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.1	69.0	67.2	61.2	69.8	70.4	
Medium Trucks:	63.6	63.0	56.6	55.1	63.5	63.8	
Heavy Trucks:	64.1	63.5	54.4	55.7	64.0	64.2	
Vehicle Noise:	71.8	70.9	67.8	63.0	71.6	72.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	165	355	764
CNEL:	82	177	381	821

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,321 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,006 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.62	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.62	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.58	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	68.8	67.0	61.0	69.6	70.2
Medium Trucks:	63.4	62.8	56.4	54.9	63.3	63.6
Heavy Trucks:	63.9	63.3	54.2	55.5	63.8	64.0
Vehicle Noise:	71.6	70.7	67.6	62.8	71.4	71.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	344	741
CNEL:	80	171	369	796

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Murphy Avenue to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,016 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,981 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
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	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.56	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.68	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.63	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.9	65.8	64.0	58.0	66.6	67.2	
Medium Trucks:	60.4	59.8	53.4	51.9	60.3	60.5	
Heavy Trucks:	60.8	60.3	51.2	52.5	60.8	61.0	
Vehicle Noise:	68.6	67.6	64.6	59.8	68.4	68.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	141	303	653
CNEL:	70	151	326	702

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Foster to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,305 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,923 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">VehicleType</th> <th style="text-align: center;">Day</th> <th style="text-align: center;">Evening</th> <th style="text-align: center;">Night</th> <th style="text-align: center;">Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td style="text-align: center;">77.5%</td> <td style="text-align: center;">12.9%</td> <td style="text-align: center;">9.6%</td> <td style="text-align: center;">97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td style="text-align: center;">84.8%</td> <td style="text-align: center;">4.9%</td> <td style="text-align: center;">10.3%</td> <td style="text-align: center;">1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td style="text-align: center;">86.5%</td> <td style="text-align: center;">2.7%</td> <td style="text-align: center;">10.8%</td> <td style="text-align: center;">0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.43	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.81	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.76	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4
Heavy Trucks:	60.7	60.1	51.1	52.3	60.7	60.8
Vehicle Noise:	68.4	67.5	64.5	59.7	68.2	68.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	138	297	641
CNEL:	69	148	319	688

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Fairbanks to Foster

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,341 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,843 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.25	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.99	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.95	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.6	65.5	63.7	57.7	66.3	66.9	
Medium Trucks:	60.1	59.4	53.1	51.5	60.0	60.2	
Heavy Trucks:	60.5	59.9	50.9	52.2	60.5	60.6	
Vehicle Noise:	68.2	67.3	64.3	59.5	68.1	68.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	134	289	623
CNEL:	67	144	311	669

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Toledo Way to Bertea

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,840 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,802 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.05	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.4	63.6	57.6	66.2	66.8
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1
Heavy Trucks:	60.4	59.8	50.8	52.1	60.4	60.5
Vehicle Noise:	68.1	67.2	64.2	59.4	68.0	68.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	285	613
CNEL:	66	142	306	659

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Pacifica to Meridian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,324 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,924 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.43	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.80	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.76	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.7	68.6	66.9	60.8	69.4	70.0	
Medium Trucks:	63.3	62.6	56.2	54.7	63.1	63.4	
Heavy Trucks:	63.7	63.1	54.1	55.3	63.7	63.8	
Vehicle Noise:	71.4	70.5	67.4	62.6	71.2	71.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	72	155	334	720
CNEL:	77	167	359	774

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Bertea to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,315 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,758 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.04	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.20	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.15	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0
Heavy Trucks:	60.3	59.7	50.7	52.0	60.3	60.4
Vehicle Noise:	68.0	67.1	64.1	59.3	67.8	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	280	604
CNEL:	65	140	301	648



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Meridian to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,018 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,734 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.02	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.26	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.21	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.2	63.5	57.4	66.0	66.6
Medium Trucks:	59.9	59.2	52.8	51.3	59.7	60.0
Heavy Trucks:	60.3	59.7	50.6	51.9	60.3	60.4
Vehicle Noise:	68.0	67.1	64.0	59.2	67.8	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	278	598
CNEL:	64	138	298	642

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Paseo Westpark to San Marino

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,047 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,736 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.01	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.25	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.21	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.2	63.5	57.4	66.0	66.6
Medium Trucks:	59.9	59.2	52.8	51.3	59.7	60.0
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	68.0	67.1	64.0	59.2	67.8	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	278	598
CNEL:	64	139	298	643

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,516 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,528 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.57	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.81	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.76	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.7	64.7	62.9	56.9	65.5	66.1	
Medium Trucks:	59.3	58.6	52.3	50.7	59.2	59.4	
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8	
Vehicle Noise:	67.4	66.5	63.5	58.7	67.2	67.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	255	549
CNEL:	59	127	274	590

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Astor  
 Road Segment: Lynx to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,799 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,633 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 37.138				
Road Grade: 0.0%		Medium Trucks: 37.030				
Left View: -90.0 degrees		Heavy Trucks: 37.139				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	1.94	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-15.30	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-19.25	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.3	61.5	55.4	64.1	64.7
Medium Trucks:	58.8	58.2	51.8	50.3	58.7	58.9
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4
Vehicle Noise:	66.8	66.0	62.3	58.1	66.7	67.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	48	104	225
CNEL:	24	52	111	239

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Astor  
 Road Segment: Cadence to Lynx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,995 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,237 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 37.138				
Road Grade: 0.0%		Medium Trucks: 37.030				
Left View: -90.0 degrees		Heavy Trucks: 37.139				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	0.73	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-16.50	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-20.46	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.1	62.1	60.3	54.2	62.9	63.5
Medium Trucks:	57.6	57.0	50.6	49.0	57.5	57.7
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2
Vehicle Noise:	65.6	64.8	61.1	56.9	65.5	65.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	40	87	187
CNEL:	20	43	92	199

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Bake Parkway  
 Road Segment: I-5 NB Off-Ramp to Rockfield Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 98,304 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 8,110 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	6.68	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-10.56	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-14.51	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.8	73.7	71.9	65.9	74.5	75.1
Medium Trucks:	68.3	67.7	61.3	59.8	68.2	68.5
Heavy Trucks:	68.8	68.2	59.1	60.4	68.7	68.9
Vehicle Noise:	76.5	75.6	72.5	67.7	76.3	76.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	262	564	1,216	2,619
CNEL:	281	606	1,306	2,814

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bake Parkway  
 Road Segment: Muirlands Boulevard to Jeronimo Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 62,986 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,196 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.75	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-12.49	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-16.45	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.1	70.0	68.2	62.2	70.8	71.4	
Medium Trucks:	64.6	63.9	57.6	56.0	64.5	64.7	
Heavy Trucks:	65.0	64.4	55.4	56.7	65.0	65.1	
Vehicle Noise:	72.7	71.8	68.8	64.0	72.6	73.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	124	268	577	1,243
CNEL:	134	288	620	1,335

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Bake Parkway  
 Road Segment: Rockfield Boulevard to Muirlands Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 67,539 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,572 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	5.05	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-12.19	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-16.14	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.1	72.1	70.3	64.3	72.9	73.5
Medium Trucks:	66.7	66.0	59.7	58.1	66.6	66.8
Heavy Trucks:	67.1	66.5	57.5	58.8	67.1	67.2
Vehicle Noise:	74.8	73.9	70.9	66.1	74.6	75.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	204	439	947	2,039
CNEL:	219	472	1,017	2,191



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bake Parkway  
 Road Segment: Jeronimo Road to Toledo Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 51,196 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,224 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.85	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.39	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.35	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	69.1	67.3	61.3	69.9	70.5
Medium Trucks:	63.7	63.0	56.7	55.1	63.6	63.8
Heavy Trucks:	64.1	63.5	54.5	55.8	64.1	64.2
Vehicle Noise:	71.8	70.9	67.9	63.1	71.7	72.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	108	233	502	1,082
CNEL:	116	251	540	1,163

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Bake Parkway  
 Road Segment: Toledo Way to Cromwell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,627 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,847 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.44	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.80	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.75	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.7	66.9	60.9	69.5	70.1
Medium Trucks:	63.3	62.6	56.3	54.7	63.2	63.4
Heavy Trucks:	63.7	63.1	54.1	55.4	63.7	63.8
Vehicle Noise:	71.4	70.5	67.5	62.7	71.2	71.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	102	219	472	1,017
CNEL:	109	235	507	1,093

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Bake Parkway  
 Road Segment: Cromwell to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,084 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,719 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.30	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.94	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.90	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.8	60.7	69.3	69.9
Medium Trucks:	63.2	62.5	56.1	54.6	63.0	63.3
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7
Vehicle Noise:	71.3	70.4	67.3	62.6	71.1	71.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	99	214	462	994
CNEL:	107	230	496	1,068

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bake Parkway  
 Road Segment: Research Drive to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,944 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,388 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.37	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.87	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.82	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.6	64.8	58.8	67.4	68.0
Medium Trucks:	61.2	60.6	54.2	52.7	61.1	61.4
Heavy Trucks:	61.7	61.1	52.0	53.3	61.6	61.8
Vehicle Noise:	69.4	68.5	65.4	60.6	69.2	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	344	740
CNEL:	80	171	369	795

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Bake Parkway  
 Road Segment: Irvine Center Drive to Research Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,673 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	798 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	84.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 74.458				
Road Grade:	0.0%	Medium Trucks: 74.404				
Left View:	-90.0 degrees	Heavy Trucks: 74.458				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.39	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-20.63	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-24.58	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.9	61.9	60.1	54.0	62.7	63.3
Medium Trucks:	56.5	55.8	49.4	47.9	56.4	56.6
Heavy Trucks:	56.9	56.3	47.3	48.5	56.9	57.0
Vehicle Noise:	64.6	63.7	60.7	55.9	64.4	64.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	165	356
CNEL:	38	82	178	383

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bake Parkway  
 Road Segment: Lake Forest Drive to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,866 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 566 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.88	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-22.12	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-26.07	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.4	60.4	58.6	52.5	61.2	61.8	
Medium Trucks:	55.0	54.3	48.0	46.4	54.9	55.1	
Heavy Trucks:	55.4	54.8	45.8	47.0	55.4	55.5	
Vehicle Noise:	63.1	62.2	59.2	54.4	62.9	63.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	132	284
CNEL:	30	66	141	305

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Banting  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,569 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 459 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-4.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-21.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-25.43	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	57.8	56.8	55.0	48.9	57.6	58.2	
Medium Trucks:	52.0	51.4	45.0	43.5	51.9	52.1	
Heavy Trucks:	53.9	53.3	44.3	45.5	53.9	54.0	
Vehicle Noise:	60.0	59.2	55.7	51.3	59.9	60.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	13	28	61	132
CNEL:	14	30	65	141

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Pacifica to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,132 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,981 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.92	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-15.32	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.27	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.4	68.6	62.6	71.2	71.8
Medium Trucks:	64.8	64.2	57.8	56.3	64.7	65.0
Heavy Trucks:	64.9	64.3	55.3	56.5	64.9	65.0
Vehicle Noise:	73.0	72.1	69.2	64.3	72.8	73.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	208	448	965
CNEL:	104	224	482	1,039



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Banting to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,152 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,653 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.41	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-15.82	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.78	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.9	69.9	68.1	62.1	70.7	71.3
Medium Trucks:	64.3	63.7	57.3	55.8	64.2	64.5
Heavy Trucks:	64.4	63.8	54.7	56.0	64.4	64.5
Vehicle Noise:	72.5	71.6	68.6	63.8	72.3	72.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	192	415	893
CNEL:	96	207	446	961

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: I-5 HOV Ramp to Technology Drive West

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,565 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,769 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-15.64	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.59	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.1	70.1	68.3	62.3	70.9	71.5	
Medium Trucks:	64.5	63.9	57.5	55.9	64.4	64.6	
Heavy Trucks:	64.6	64.0	54.9	56.2	64.5	64.7	
Vehicle Noise:	72.7	71.8	68.8	64.0	72.5	73.0	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	427	919
CNEL:	99	213	459	989

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Technology Drive West to Ada

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,332 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,585 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.30	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-15.94	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.89	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.8	68.0	62.0	70.6	71.2
Medium Trucks:	64.2	63.6	57.2	55.7	64.1	64.3
Heavy Trucks:	64.3	63.7	54.6	55.9	64.2	64.4
Vehicle Noise:	72.4	71.5	68.5	63.7	72.2	72.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	189	407	878
CNEL:	94	203	438	944

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Irvine Center Drive to I-5 HOV Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 30,796 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,541 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.01	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.97	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.8	69.7	67.9	61.9	70.5	71.1	
Medium Trucks:	64.2	63.5	57.1	55.6	64.0	64.3	
Heavy Trucks:	64.2	63.6	54.6	55.8	64.2	64.3	
Vehicle Noise:	72.3	71.4	68.5	63.6	72.1	72.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	187	403	868
CNEL:	93	201	433	934

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,434 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,346 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.88	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.36	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.31	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	69.4	67.6	61.5	70.2	70.8
Medium Trucks:	63.8	63.1	56.8	55.2	63.7	63.9
Heavy Trucks:	63.8	63.3	54.2	55.5	63.8	63.9
Vehicle Noise:	72.0	71.1	68.1	63.2	71.8	72.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	382	823
CNEL:	89	191	411	885

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: East Yale Loop to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,062 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,315 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.82	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.42	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.37	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	69.3	67.5	61.5	70.1	70.7
Medium Trucks:	63.8	63.1	56.7	55.2	63.6	63.9
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9
Vehicle Noise:	71.9	71.0	68.1	63.2	71.7	72.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	176	379	816
CNEL:	88	189	407	877

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: West Yale Loop to Lake Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,146 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,240 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.68	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.52	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	69.2	67.4	61.3	70.0	70.6
Medium Trucks:	63.6	62.9	56.6	55.0	63.5	63.7
Heavy Trucks:	63.6	63.0	54.0	55.3	63.6	63.7
Vehicle Noise:	71.8	70.9	67.9	63.0	71.6	72.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	172	370	798
CNEL:	86	185	398	858

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Ada to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,638 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,280 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.76	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.44	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.2	67.5	61.4	70.0	70.6
Medium Trucks:	63.7	63.0	56.7	55.1	63.6	63.8
Heavy Trucks:	63.7	63.1	54.1	55.3	63.7	63.8
Vehicle Noise:	71.9	70.9	68.0	63.1	71.7	72.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	375	807
CNEL:	87	187	403	869



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Lake Road to Creek Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,488 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,103 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.41	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.83	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.79	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	68.9	67.1	61.1	69.7	70.3
Medium Trucks:	63.3	62.7	56.3	54.8	63.2	63.4
Heavy Trucks:	63.4	62.8	53.7	55.0	63.3	63.5
Vehicle Noise:	71.5	70.6	67.6	62.8	71.3	71.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	165	355	765
CNEL:	82	177	382	823

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Red Hill Avenue to Armstrong Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 48,793 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,025 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 56.593				
Road Grade: 0.0%	Medium Trucks: 56.522				
Left View: -90.0 degrees	Heavy Trucks: 56.593				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.23	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-14.01	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.97	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.9	71.8	70.1	64.0	72.6	73.2	
Medium Trucks:	66.3	65.6	59.3	57.7	66.2	66.4	
Heavy Trucks:	66.3	65.7	56.7	57.9	66.3	66.4	
Vehicle Noise:	74.5	73.5	70.6	65.7	74.3	74.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	193	415	894	1,927
CNEL:	207	447	962	2,073

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Discovery/Herchel to Banting

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,618 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,031 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.94	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	67.0	60.9	69.5	70.1
Medium Trucks:	63.2	62.5	56.1	54.6	63.1	63.3
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3
Vehicle Noise:	71.4	70.4	67.5	62.6	71.2	71.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	347	747
CNEL:	80	173	373	804

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Lyon to East Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,159 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,993 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.02	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.9	60.8	69.4	70.1
Medium Trucks:	63.1	62.4	56.1	54.5	63.0	63.2
Heavy Trucks:	63.1	62.5	53.5	54.8	63.1	63.2
Vehicle Noise:	71.3	70.4	67.4	62.5	71.1	71.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	343	738
CNEL:	79	171	369	794

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Creek Road to Lyon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,764 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,961 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.14	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.09	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.6	66.8	60.8	69.4	70.0
Medium Trucks:	63.0	62.4	56.0	54.4	62.9	63.1
Heavy Trucks:	63.1	62.5	53.4	54.7	63.0	63.2
Vehicle Noise:	71.2	70.3	67.3	62.5	71.0	71.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	339	730
CNEL:	79	169	365	785

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 42,548 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,510 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.63	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.61	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.56	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.9	69.9	68.1	62.0	70.7	71.3
Medium Trucks:	64.3	63.6	57.3	55.7	64.2	64.4
Heavy Trucks:	64.3	63.8	54.7	56.0	64.3	64.5
Vehicle Noise:	72.5	71.6	68.6	63.7	72.3	72.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	245	529	1,139
CNEL:	123	264	569	1,225

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Sand Canyon Avenue to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,751 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,794 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.48	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.3	68.2	66.4	60.4	69.0	69.6	
Medium Trucks:	62.6	62.0	55.6	54.1	62.5	62.8	
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8	
Vehicle Noise:	70.8	69.9	66.9	62.1	70.6	71.1	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	148	319	688
CNEL:	74	160	344	740

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Armstrong Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,468 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,256 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.30	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.93	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.89	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	69.5	67.8	61.7	70.3	70.9
Medium Trucks:	64.0	63.3	57.0	55.4	63.9	64.1
Heavy Trucks:	64.0	63.4	54.4	55.6	64.0	64.1
Vehicle Noise:	72.2	71.2	68.3	63.4	72.0	72.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	108	233	503	1,083
CNEL:	117	251	541	1,165



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,139 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,661 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.62	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.86	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.81	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.9	66.1	60.0	68.7	69.3
Medium Trucks:	62.3	61.6	55.3	53.7	62.2	62.4
Heavy Trucks:	62.3	61.8	52.7	54.0	62.3	62.4
Vehicle Noise:	70.5	69.6	66.6	61.7	70.3	70.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	141	303	654
CNEL:	70	152	326	703

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Jamboree Road to Construction Circle

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,282 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,663 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.43	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.81	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.76	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.3	66.5	60.4	69.1	69.7
Medium Trucks:	62.7	62.0	55.7	54.1	62.6	62.8
Heavy Trucks:	62.7	62.2	53.1	54.4	62.7	62.8
Vehicle Noise:	70.9	70.0	67.0	62.1	70.7	71.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	201	434	934
CNEL:	100	216	466	1,005

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Santa Rosa to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,019 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,559 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.26	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.98	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.94	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.1	68.1	66.3	60.3	68.9	69.5	
Medium Trucks:	62.5	61.9	55.5	54.0	62.4	62.6	
Heavy Trucks:	62.6	62.0	52.9	54.2	62.5	62.7	
Vehicle Noise:	70.7	69.8	66.8	62.0	70.5	71.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	196	422	909
CNEL:	98	211	454	978

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: FedEx to Discovery/Herchel

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,005 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,568 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.87	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.06	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.1	61.4	55.0	53.5	61.9	62.2
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	70.2	69.3	66.4	61.5	70.0	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	292	629
CNEL:	68	146	314	677

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Jeffrey Road to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,482 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,525 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.99	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.18	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.5	65.7	59.7	68.3	68.9
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.1
Heavy Trucks:	62.0	61.4	52.3	53.6	61.9	62.1
Vehicle Noise:	70.1	69.2	66.2	61.4	69.9	70.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	287	617
CNEL:	66	143	308	664

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Laguna Canyon Road to FedEx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 18,440 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,521 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.19	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.5	65.7	59.7	68.3	68.9	
Medium Trucks:	61.9	61.3	54.9	53.3	61.8	62.0	
Heavy Trucks:	62.0	61.4	52.3	53.6	61.9	62.1	
Vehicle Noise:	70.1	69.2	66.2	61.4	69.9	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	286	617
CNEL:	66	143	308	663

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Pullman Street to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 38,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,135 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.14	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-15.10	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-19.05	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.8	70.7	69.0	62.9	71.5	72.2
Medium Trucks:	65.2	64.5	58.2	56.6	65.1	65.3
Heavy Trucks:	65.2	64.6	55.6	56.9	65.2	65.3
Vehicle Noise:	73.4	72.5	69.5	64.6	73.2	73.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	163	351	757	1,631
CNEL:	175	378	814	1,755

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Construction Circle to Fire Station

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,462 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,348 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.88	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.35	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.31	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.2	61.5	55.1	53.6	62.0	62.3
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	70.3	69.4	66.5	61.6	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	399	859
CNEL:	92	199	429	924



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Fire Station to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,462 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,348 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.88	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.35	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.31	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.2	61.5	55.1	53.6	62.0	62.3
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	70.3	69.4	66.5	61.6	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	399	859
CNEL:	92	199	429	924

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Paseo Westpark to Santa Rosa

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,055 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,315 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.82	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.42	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.37	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.9	59.8	68.4	69.0
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2
Heavy Trucks:	62.1	61.5	52.5	53.8	62.1	62.2
Vehicle Noise:	70.3	69.4	66.4	61.5	70.1	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	183	395	851
CNEL:	92	197	425	915

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,884 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,135 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.47	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.77	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.72	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	61.7	61.1	54.7	53.2	61.6	61.9
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	69.9	69.0	66.1	61.2	69.7	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	374	806
CNEL:	87	187	403	867

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bay Tree  
 Road Segment: Trabuco Road to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,675 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 221 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-7.42	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-24.66	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-28.62	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.6	53.6	51.8	45.7	54.4	55.0
Medium Trucks:	48.9	48.2	41.8	40.3	48.7	49.0
Heavy Trucks:	50.7	50.1	41.1	42.3	50.7	50.8
Vehicle Noise:	56.9	56.0	52.5	48.2	56.7	57.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	38	81
CNEL:	9	19	40	86

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Beacon  
 Road Segment: Ridge Valley to Benchmark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,586 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	296 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-5.48	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-22.72	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-26.67	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.9	55.8	54.1	48.0	56.6	57.2
Medium Trucks:	51.4	50.7	44.4	42.8	51.3	51.5
Heavy Trucks:	53.9	53.3	44.3	45.5	53.9	54.0
Vehicle Noise:	59.4	58.5	54.9	50.7	59.2	59.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	15	33	72
CNEL:	8	17	36	77

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Benchmark (LN Street)  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,728 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 143 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-8.65	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-25.89	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-29.84	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.7	52.7	50.9	44.9	53.5	54.1
Medium Trucks:	48.2	47.6	41.2	39.7	48.1	48.4
Heavy Trucks:	50.7	50.1	41.1	42.3	50.7	50.8
Vehicle Noise:	56.2	55.4	51.7	47.6	56.1	56.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	10	21	44
CNEL:	5	10	22	47

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bison Avenue  
 Road Segment: SR-73 NB Off-Ramp to California Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,685 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,119 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.31	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.93	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.88	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.5	66.5	64.7	58.6	67.3	67.9	
Medium Trucks:	61.3	60.6	54.2	52.7	61.2	61.4	
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2	
Vehicle Noise:	69.4	68.5	65.3	60.6	69.2	69.6	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	255	550
CNEL:	59	127	274	590

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bonita Canyon Drive  
 Road Segment: MacArthur Boulevard to SR-73

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,850 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,545 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 75.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	70.413			
Road Grade: 0.0%	Medium Trucks:	70.356			
Left View: -90.0 degrees	Heavy Trucks:	70.413			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.65	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.59	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-19.55	-2.33	-1.20	-5.25	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.3	65.5	59.4	68.1	68.7
Medium Trucks:	61.9	61.2	54.8	53.3	61.8	62.0
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	338	729
CNEL:	78	169	364	783



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bonita Canyon Drive  
 Road Segment: Turtle Ridge to Shady Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,798 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,716 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 70.413				
Road Grade: 0.0%	Medium Trucks: 70.356				
Left View: -90.0 degrees	Heavy Trucks: 70.413				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.06	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.30	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-21.26	-2.33	-1.20	-5.25	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.5	63.8	57.7	66.3	67.0
Medium Trucks:	60.2	59.5	53.1	51.6	60.1	60.3
Heavy Trucks:	60.6	60.0	51.0	52.2	60.6	60.7
Vehicle Noise:	68.3	67.4	64.3	59.6	68.1	68.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	121	260	561
CNEL:	60	130	280	602

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bonita Canyon Drive  
 Road Segment: Newport Coast Drive to Turtle Ridge

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,217 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,585 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 70.413				
Road Grade: 0.0%	Medium Trucks: 70.356				
Left View: -90.0 degrees	Heavy Trucks: 70.413				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.41	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.65	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-21.60	-2.33	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.3	65.2	63.4	57.4	66.0	66.6	
Medium Trucks:	59.8	59.2	52.8	51.2	59.7	59.9	
Heavy Trucks:	60.2	59.7	50.6	51.9	60.2	60.4	
Vehicle Noise:	68.0	67.0	64.0	59.2	67.8	68.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	115	247	532
CNEL:	57	123	265	571

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Bonita Canyon Drive  
 Road Segment: SR-73 NB Off-Ramp to Newport Coast Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,311 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,511 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.62	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.86	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-21.81	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	65.0	63.2	57.2	65.8	66.4
Medium Trucks:	59.6	58.9	52.6	51.0	59.5	59.7
Heavy Trucks:	60.0	59.4	50.4	51.7	60.0	60.1
Vehicle Noise:	67.7	66.8	63.8	59.0	67.6	68.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	111	239	515
CNEL:	55	119	257	553

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Bosque  
 Road Segment: Cadence to Great Park Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,852 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,060 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 37.138				
Road Grade: 0.0%		Medium Trucks: 37.030				
Left View: -90.0 degrees		Heavy Trucks: 37.139				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	0.06	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-17.17	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-21.13	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.4	61.4	59.6	53.6	62.2	62.8
Medium Trucks:	57.0	56.3	49.9	48.4	56.8	57.1
Heavy Trucks:	59.4	58.8	49.8	51.1	59.4	59.5
Vehicle Noise:	65.0	64.1	60.5	56.3	64.8	65.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	36	78	168
CNEL:	18	39	83	179

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bosque  
 Road Segment: Irvine Boulevard to Benchmark (LN Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,905 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 735 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-1.53	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-18.77	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-22.72	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.9	59.8	58.0	52.0	60.6	61.2	
Medium Trucks:	55.4	54.7	48.3	46.8	55.2	55.5	
Heavy Trucks:	57.8	57.2	48.2	49.5	57.8	57.9	
Vehicle Noise:	63.4	62.5	58.9	54.7	63.2	63.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	13	28	61	132
CNEL:	14	30	65	141

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Bosque  
 Road Segment: Benchmark to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,135 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	671 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-1.92	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-19.16	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-23.12	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.5	59.4	57.6	51.6	60.2	60.8
Medium Trucks:	55.0	54.3	47.9	46.4	54.9	55.1
Heavy Trucks:	57.4	56.9	47.8	49.1	57.4	57.5
Vehicle Noise:	63.0	62.1	58.5	54.3	62.8	63.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	27	58	124
CNEL:	13	29	61	132

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bosque  
 Road Segment: Great Park Boulevard to Beacon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,844 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 152 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-8.37	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-25.61	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-29.56	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	54.0	53.0	51.2	45.1	53.8	54.4	
Medium Trucks:	48.5	47.9	41.5	39.9	48.4	48.6	
Heavy Trucks:	51.0	50.4	41.4	42.6	51.0	51.1	
Vehicle Noise:	56.5	55.7	52.0	47.8	56.4	56.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	10	21	46
CNEL:	5	11	23	49

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bosque  
 Road Segment: Beacon to S 5th Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,609 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 133 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-8.96	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-26.20	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-30.15	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.4	52.4	50.6	44.5	53.2	53.8
Medium Trucks:	47.9	47.3	40.9	39.4	47.8	48.0
Heavy Trucks:	50.4	49.8	40.8	42.0	50.4	50.5
Vehicle Noise:	55.9	55.1	51.4	47.2	55.8	56.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	20	42
CNEL:	4	10	21	45



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bryan Avenue  
 Road Segment: Jamboree Road to Market Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,410 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,849 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.72	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.48	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.9	65.9	64.1	58.0	66.7	67.3	
Medium Trucks:	60.7	60.0	53.7	52.1	60.6	60.8	
Heavy Trucks:	61.5	60.9	51.9	53.2	61.5	61.6	
Vehicle Noise:	68.8	67.9	64.7	60.0	68.6	69.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	108	233	502
CNEL:	54	116	250	539

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bryan Avenue  
 Road Segment: Market Place to El Camino Real

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,846 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,802 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
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FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.61	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.63	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.59	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.8	65.8	64.0	57.9	66.6	67.2	
Medium Trucks:	60.6	59.9	53.5	52.0	60.5	60.7	
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5	
Vehicle Noise:	68.7	67.7	64.6	59.9	68.5	68.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	106	229	494
CNEL:	53	114	246	530

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Bryan Avenue  
 Road Segment: Rubicon to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,397 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,765 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.52	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.68	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.8	66.5	67.1
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	61.3	60.7	51.7	53.0	61.3	61.4
Vehicle Noise:	68.6	67.7	64.5	59.8	68.4	68.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	105	226	487
CNEL:	52	113	242	522

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bryan Avenue  
 Road Segment: El Camino Real to Rubicon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,246 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,753 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.75	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.71	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.7	65.6	63.9	57.8	66.4	67.0	
Medium Trucks:	60.5	59.8	53.4	51.9	60.3	60.6	
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4	
Vehicle Noise:	68.5	67.6	64.5	59.8	68.3	68.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	104	225	485
CNEL:	52	112	241	520

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bryan Avenue  
 Road Segment: Eastwood to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,512 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,197 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.41	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.36	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.0	64.0	62.2	56.2	64.8	65.4	
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9	
Heavy Trucks:	59.6	59.1	50.0	51.3	59.6	59.8	
Vehicle Noise:	66.9	66.0	62.8	58.1	66.7	67.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	174	376
CNEL:	40	87	187	403

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bryan Avenue  
 Road Segment: Westwood to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,258 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,094 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.76	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.7	63.6	61.8	55.8	64.4	65.0	
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5	
Heavy Trucks:	59.3	58.7	49.6	50.9	59.2	59.4	
Vehicle Noise:	66.5	65.6	62.4	57.8	66.3	66.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	164	354
CNEL:	38	82	176	380

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bryan Avenue  
 Road Segment: Culver Drive to Westwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,038 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,076 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.63	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.83	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.5	61.8	55.7	64.3	64.9
Medium Trucks:	58.3	57.7	51.3	49.8	58.2	58.5
Heavy Trucks:	59.2	58.6	49.6	50.8	59.2	59.3
Vehicle Noise:	66.4	65.5	62.4	57.7	66.2	66.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	75	162	350
CNEL:	38	81	174	375

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Bryan Avenue  
 Road Segment: Yale Avenue to Eastwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,028 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,075 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.64	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.88	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.83	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.5	61.7	55.7	64.3	64.9
Medium Trucks:	58.3	57.7	51.3	49.8	58.2	58.4
Heavy Trucks:	59.2	58.6	49.6	50.8	59.2	59.3
Vehicle Noise:	66.4	65.5	62.4	57.7	66.2	66.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	75	162	350
CNEL:	38	81	174	375



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Cadence  
 Road Segment: Pusan to Chinon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,071 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 583 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.78	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-21.02	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-24.97	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.4	62.3	60.5	54.5	63.1	63.7	
Medium Trucks:	57.3	56.7	50.3	48.8	57.2	57.5	
Heavy Trucks:	58.7	58.1	49.0	50.3	58.6	58.8	
Vehicle Noise:	65.4	64.5	61.2	56.7	65.2	65.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	83	179
CNEL:	19	41	89	192

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Cadence  
 Road Segment: Bosque to Pusan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,542 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	540 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.12	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-21.36	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-25.31	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.0	62.0	60.2	54.1	62.8	63.4
Medium Trucks:	57.0	56.3	50.0	48.4	56.9	57.1
Heavy Trucks:	58.3	57.7	48.7	49.9	58.3	58.4
Vehicle Noise:	65.0	64.1	60.9	56.3	64.9	65.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	79	170
CNEL:	18	39	85	182

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Cadence  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 4,909 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 405 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 37.138				
Road Grade: 0.0%	Medium Trucks: 37.030				
Left View: -90.0 degrees	Heavy Trucks: 37.139				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.37	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-22.60	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-26.56	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.8	60.7	59.0	52.9	61.5	62.1	
Medium Trucks:	55.8	55.1	48.7	47.2	55.6	55.9	
Heavy Trucks:	57.1	56.5	47.4	48.7	57.1	57.2	
Vehicle Noise:	63.8	62.9	59.6	55.1	63.6	64.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	30	65	140
CNEL:	15	32	70	150

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Cadence  
 Road Segment: Chinon to Merit

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,298 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 272 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-7.09	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-24.33	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-28.29	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.1	59.0	57.2	51.2	59.8	60.4	
Medium Trucks:	54.0	53.4	47.0	45.5	53.9	54.2	
Heavy Trucks:	55.3	54.8	45.7	47.0	55.3	55.5	
Vehicle Noise:	62.1	61.2	57.9	53.3	61.9	62.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	23	50	108
CNEL:	12	25	54	115

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Cadence  
 Road Segment: Merit to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1,698 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	140 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-9.97	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-27.21	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-31.17	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.2	56.1	54.3	48.3	56.9	57.5
Medium Trucks:	51.2	50.5	44.1	42.6	51.0	51.3
Heavy Trucks:	52.5	51.9	42.8	44.1	52.4	52.6
Vehicle Noise:	59.2	58.3	55.0	50.5	59.0	59.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	15	32	69
CNEL:	7	16	34	74

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: California Avenue  
 Road Segment: University Drive to Academy Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,758 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,300 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.30	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.54	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.49	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.0	62.9	61.1	55.1	63.7	64.3
Medium Trucks:	57.9	57.3	50.9	49.4	57.8	58.1
Heavy Trucks:	59.3	58.7	49.6	50.9	59.2	59.4
Vehicle Noise:	66.0	65.1	61.8	57.3	65.8	66.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	152	327
CNEL:	35	76	163	350

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: California Avenue  
 Road Segment: Campus Drive to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,868 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 814 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 40 mph																					
Near/Far Lane Distance: 48 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 62.5 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 62.5 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 57.786																				
Left View: -90.0 degrees	Medium Trucks: 57.717																				
Right View: 90.0 degrees	Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.33	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.57	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.53	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	60.9	59.1	53.0	61.7	62.3
Medium Trucks:	55.9	55.2	48.9	47.3	55.8	56.0
Heavy Trucks:	57.2	56.6	47.6	48.8	57.2	57.3
Vehicle Noise:	63.9	63.0	59.8	55.2	63.8	64.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	111	240
CNEL:	26	55	119	257

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: California Avenue  
 Road Segment: Theory to Bison Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,160 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	756 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.89	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.85	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.6	60.5	58.8	52.7	61.3	62.0	
Medium Trucks:	55.6	54.9	48.5	47.0	55.5	55.7	
Heavy Trucks:	56.9	56.3	47.3	48.5	56.9	57.0	
Vehicle Noise:	63.6	62.7	59.4	54.9	63.4	63.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	49	106	228
CNEL:	24	53	113	244



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Campus Drive  
 Road Segment: Carlson Avenue to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,942 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,388 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.37	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-15.87	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-19.82	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.3	70.2	68.5	62.4	71.0	71.6	
Medium Trucks:	64.9	64.2	57.8	56.3	64.7	65.0	
Heavy Trucks:	65.3	64.7	55.6	56.9	65.2	65.4	
Vehicle Noise:	73.0	72.1	69.0	64.2	72.8	73.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	356	766
CNEL:	82	177	382	823

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Campus Drive  
 Road Segment: University Drive to Bridge Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,687 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,697 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.90	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.29	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.9	68.8	67.0	61.0	69.6	70.2	
Medium Trucks:	63.4	62.8	56.4	54.8	63.3	63.5	
Heavy Trucks:	63.8	63.3	54.2	55.5	63.8	63.9	
Vehicle Noise:	71.6	70.6	67.6	62.8	71.4	71.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	357	769
CNEL:	83	178	384	827

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Campus Drive  
 Road Segment: Jamboree Road to Carlson Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,504 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,517 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.64	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.59	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.7	60.7	69.3	69.9
Medium Trucks:	63.1	62.5	56.1	54.5	63.0	63.2
Heavy Trucks:	63.5	63.0	53.9	55.2	63.5	63.6
Vehicle Noise:	71.3	70.3	67.3	62.5	71.1	71.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	158	341	735
CNEL:	79	170	366	789

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Campus Drive  
 Road Segment: Stanford Court to Berkeley Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,642 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,280 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.02	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.1	66.3	60.2	68.9	69.5
Medium Trucks:	62.7	62.0	55.7	54.1	62.6	62.8
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	70.8	69.9	66.9	62.1	70.6	71.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	148	319	688
CNEL:	74	159	343	739

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Campus Drive  
 Road Segment: California Avenue to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,572 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,192 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.19	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.0	67.9	66.1	60.1	68.7	69.3	
Medium Trucks:	62.5	61.9	55.5	53.9	62.4	62.6	
Heavy Trucks:	62.9	62.4	53.3	54.6	62.9	63.0	
Vehicle Noise:	70.7	69.7	66.7	61.9	70.5	70.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	311	670
CNEL:	72	155	334	720

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Campus Drive  
 Road Segment: Berkeley Avenue to Cornell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,468 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,771 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.07	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.16	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.12	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	67.0	65.2	59.1	67.8	68.4
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	69.7	68.8	65.8	61.0	69.5	70.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	270	581
CNEL:	62	135	290	625

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Campus Drive  
 Road Segment: Martin to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,343 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,431 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.85	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.09	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.05	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.1	66.0	64.3	58.2	66.8	67.4	
Medium Trucks:	60.7	60.0	53.6	52.1	60.6	60.8	
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2	
Vehicle Noise:	68.8	67.9	64.8	60.1	68.6	69.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	109	234	504
CNEL:	54	117	251	542

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative Project Name: Irvine GP  
 Road Name: Campus Drive Job Number: 15937  
 Road Segment: Culver Drive to Paseo Montoya (Turtle Rock Drive)

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,048 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,324 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006 <span style="float:right">Grade Adjustment: 0.0</span>				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.38	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.3	59.7	53.3	51.8	60.2	60.4
Heavy Trucks:	60.7	60.2	51.1	52.4	60.7	60.9
Vehicle Noise:	68.5	67.5	64.5	59.7	68.3	68.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	222	479
CNEL:	51	111	239	515



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Campus Drive  
 Road Segment: Von Karman Avenue to Teller Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,824 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,223 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.73	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.4	63.6	57.5	66.2	66.8
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1
Heavy Trucks:	60.4	59.8	50.8	52.0	60.4	60.5
Vehicle Noise:	68.1	67.2	64.2	59.4	67.9	68.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	98	211	454
CNEL:	49	105	227	488

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Campus Drive  
 Road Segment: MacArthur Boulevard to Martin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,285 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,179 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.70	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.93	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.89	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.3	65.2	63.4	57.4	66.0	66.6	
Medium Trucks:	59.8	59.2	52.8	51.2	59.7	59.9	
Heavy Trucks:	60.2	59.7	50.6	51.9	60.2	60.4	
Vehicle Noise:	68.0	67.0	64.0	59.2	67.8	68.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	95	206	443
CNEL:	48	103	221	476

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Campus Drive  
 Road Segment: Teller Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,126 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,000 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.41	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.60	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.6	64.5	62.7	56.7	65.3	65.9	
Medium Trucks:	59.1	58.4	52.1	50.5	59.0	59.2	
Heavy Trucks:	59.5	58.9	49.9	51.2	59.5	59.6	
Vehicle Noise:	67.2	66.3	63.3	58.5	67.0	67.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	86	184	397
CNEL:	43	92	198	427

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Carlson Avenue  
 Road Segment: Michelson Drive to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,241 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,092 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.22	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.9	63.1	57.0	65.7	66.3
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0
Vehicle Noise:	67.6	66.7	63.7	58.9	67.4	67.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	91	196	421
CNEL:	45	98	210	453

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Chinon  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,470 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	369 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-3.73	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-20.97	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-24.92	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.6	54.6	52.8	46.8	55.4	56.0
Medium Trucks:	50.5	49.8	43.4	41.9	50.4	50.6
Heavy Trucks:	53.7	53.1	44.1	45.3	53.7	53.8
Vehicle Noise:	58.5	57.7	53.8	49.9	58.4	58.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	14	29	63
CNEL:	7	14	31	67

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Creek Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,907 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	405 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-3.33	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-20.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-24.52	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.2	52.1	50.3	44.3	52.9	53.5
Medium Trucks:	48.0	47.3	41.0	39.4	47.9	48.1
Heavy Trucks:	51.2	50.6	41.6	42.8	51.2	51.3
Vehicle Noise:	56.0	55.2	51.3	47.4	55.9	56.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	15	33	72
CNEL:	8	16	35	76

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 61,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,057 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.22	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.02	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-16.98	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.1	71.0	69.3	63.2	71.8	72.4
Medium Trucks:	65.5	64.8	58.5	56.9	65.4	65.6
Heavy Trucks:	65.5	64.9	55.9	57.1	65.5	65.6
Vehicle Noise:	73.7	72.8	69.8	64.9	73.5	74.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	309	665	1,432
CNEL:	154	332	715	1,541

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 59,960 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,947 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.12	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.07	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.0	70.9	69.2	63.1	71.7	72.3
Medium Trucks:	65.4	64.7	58.4	56.8	65.3	65.5
Heavy Trucks:	65.4	64.8	55.8	57.1	65.4	65.5
Vehicle Noise:	73.6	72.7	69.7	64.8	73.4	73.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	141	304	655	1,411
CNEL:	152	327	705	1,518



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 60,969 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,030 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.19	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.05	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.00	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.1	71.0	69.2	63.2	71.8	72.4
Medium Trucks:	65.5	64.8	58.4	56.9	65.3	65.6
Heavy Trucks:	65.5	64.9	55.9	57.1	65.5	65.6
Vehicle Noise:	73.7	72.7	69.8	64.9	73.5	73.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	307	662	1,427
CNEL:	154	331	713	1,535

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Scottsdale Drive to I-5 SB Off- Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 59,474 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,907 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.09	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.15	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.11	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.0	70.9	69.1	63.1	71.7	72.3	
Medium Trucks:	65.4	64.7	58.3	56.8	65.2	65.5	
Heavy Trucks:	65.4	64.8	55.8	57.0	65.4	65.5	
Vehicle Noise:	73.5	72.6	69.7	64.8	73.3	73.8	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	140	302	652	1,404
CNEL:	151	325	701	1,510

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: I-405 NB Off-Ramp to San Leandro

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 56,487 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,660 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.86	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.38	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.33	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.7	70.7	68.9	62.9	71.5	72.1
Medium Trucks:	65.1	64.5	58.1	56.6	65.0	65.2
Heavy Trucks:	65.2	64.6	55.5	56.8	65.1	65.3
Vehicle Noise:	73.3	72.4	69.4	64.6	73.1	73.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	136	292	630	1,356
CNEL:	146	314	677	1,459

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: San Leandro to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 53,021 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,374 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.59	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.65	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.61	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.4	68.6	62.6	71.2	71.8
Medium Trucks:	64.9	64.2	57.8	56.3	64.7	65.0
Heavy Trucks:	64.9	64.3	55.3	56.5	64.9	65.0
Vehicle Noise:	73.0	72.1	69.2	64.3	72.8	73.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	130	280	604	1,300
CNEL:	140	301	649	1,399

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Harvard Avenue to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 53,377 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,404 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.62	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.62	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.58	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.4	68.7	62.6	71.2	71.8
Medium Trucks:	64.9	64.2	57.9	56.3	64.8	65.0
Heavy Trucks:	64.9	64.3	55.3	56.5	64.9	65.0
Vehicle Noise:	73.1	72.2	69.2	64.3	72.9	73.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	131	281	606	1,306
CNEL:	141	303	652	1,405

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Trabuco Road to Farwell Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 59,213 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,885 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.07	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.17	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.13	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.4	71.3	69.5	63.5	72.1	72.7	
Medium Trucks:	65.7	65.1	58.7	57.2	65.6	65.9	
Heavy Trucks:	65.8	65.2	56.2	57.4	65.8	65.9	
Vehicle Noise:	73.9	73.0	70.1	65.2	73.7	74.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	142	306	659	1,420
CNEL:	153	329	709	1,527

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 51,504 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,249 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.46	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.78	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.73	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.3	70.3	68.5	62.5	71.1	71.7
Medium Trucks:	64.7	64.1	57.7	56.2	64.6	64.8
Heavy Trucks:	64.8	64.2	55.1	56.4	64.7	64.9
Vehicle Noise:	72.9	72.0	69.0	64.2	72.7	73.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	128	275	592	1,275
CNEL:	137	296	637	1,372

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Main Street to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 49,818 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,110 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.32	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.92	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.88	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.2	70.1	68.4	62.3	70.9	71.5
Medium Trucks:	64.6	63.9	57.6	56.0	64.5	64.7
Heavy Trucks:	64.6	64.0	55.0	56.2	64.6	64.7
Vehicle Noise:	72.8	71.9	68.9	64.0	72.6	73.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	125	269	579	1,247
CNEL:	134	289	623	1,342



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Warner Avenue to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 48,908 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,035 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.24	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.00	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.96	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	70.1	68.3	62.2	70.9	71.5
Medium Trucks:	64.5	63.8	57.5	55.9	64.4	64.6
Heavy Trucks:	64.5	64.0	54.9	56.2	64.5	64.6
Vehicle Noise:	72.7	71.8	68.8	63.9	72.5	73.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	265	572	1,232
CNEL:	133	286	615	1,325

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Walnut Avenue to Scottsdale Dive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 47,641 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,930 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.12	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.07	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.0	69.9	68.2	62.1	70.7	71.3	
Medium Trucks:	64.4	63.7	57.4	55.8	64.3	64.5	
Heavy Trucks:	64.4	63.8	54.8	56.1	64.4	64.5	
Vehicle Noise:	72.6	71.7	68.7	63.8	72.4	72.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	261	562	1,211
CNEL:	130	281	605	1,302

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,548 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,923 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.11	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.12	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.08	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.0	69.9	68.2	62.1	70.7	71.3
Medium Trucks:	64.4	63.7	57.4	55.8	64.3	64.5
Heavy Trucks:	64.4	63.8	54.8	56.0	64.4	64.5
Vehicle Noise:	72.6	71.6	68.7	63.8	72.4	72.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	260	561	1,209
CNEL:	130	280	604	1,301

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Shady Canyon Drive to Palo Verde

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,474 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,184 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.67	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.62	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.0	67.3	61.2	69.8	70.4
Medium Trucks:	63.5	62.8	56.5	54.9	63.4	63.6
Heavy Trucks:	63.5	62.9	53.9	55.2	63.5	63.6
Vehicle Noise:	71.7	70.8	67.8	62.9	71.5	72.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	169	364	785
CNEL:	84	182	392	844

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Deerfield Avenue to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,116 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,640 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.79	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.45	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.41	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.6	67.8	61.8	70.4	71.0
Medium Trucks:	64.1	63.4	57.0	55.5	63.9	64.2
Heavy Trucks:	64.1	63.5	54.5	55.7	64.1	64.2
Vehicle Noise:	72.2	71.3	68.4	63.5	72.0	72.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	248	534	1,150
CNEL:	124	267	574	1,237

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Sandburg Way to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,200 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,646 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.80	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.44	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.40	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.6	67.8	61.8	70.4	71.0
Medium Trucks:	64.1	63.4	57.0	55.5	64.0	64.2
Heavy Trucks:	64.1	63.5	54.5	55.7	64.1	64.2
Vehicle Noise:	72.3	71.3	68.4	63.5	72.1	72.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	248	535	1,152
CNEL:	124	267	575	1,239

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 43,037 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,551 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.68	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.56	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.51	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	69.5	67.7	61.7	70.3	70.9
Medium Trucks:	64.0	63.3	56.9	55.4	63.8	64.1
Heavy Trucks:	64.0	63.4	54.4	55.6	64.0	64.1
Vehicle Noise:	72.1	71.2	68.3	63.4	71.9	72.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	244	525	1,131
CNEL:	122	262	565	1,217

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Palo Verde to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,255 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,001 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.00	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.7	66.9	60.8	69.5	70.1
Medium Trucks:	63.1	62.4	56.1	54.5	63.0	63.2
Heavy Trucks:	63.1	62.6	53.5	54.8	63.1	63.3
Vehicle Noise:	71.3	70.4	67.4	62.5	71.1	71.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	344	740
CNEL:	80	172	370	796



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: University Drive to Sandburg Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,878 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,372 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.46	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.78	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.74	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.3	67.5	61.5	70.1	70.7
Medium Trucks:	63.7	63.1	56.7	55.2	63.6	63.8
Heavy Trucks:	63.8	63.2	54.1	55.4	63.7	63.9
Vehicle Noise:	71.9	71.0	68.0	63.2	71.7	72.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	109	236	507	1,093
CNEL:	118	253	546	1,176

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Farwell Avenue to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 46,710 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,854 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.04	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.20	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.16	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.3	70.3	68.5	62.4	71.1	71.7
Medium Trucks:	64.7	64.0	57.7	56.1	64.6	64.8
Heavy Trucks:	64.8	64.2	55.1	56.4	64.7	64.9
Vehicle Noise:	72.9	72.0	69.0	64.2	72.7	73.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	261	563	1,212
CNEL:	130	281	605	1,304

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Campus Drive to High School

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,825 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,286 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.34	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.89	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.85	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	69.2	67.4	61.3	70.0	70.6
Medium Trucks:	63.6	62.9	56.6	55.0	63.5	63.7
Heavy Trucks:	63.6	63.1	54.0	55.3	63.6	63.8
Vehicle Noise:	71.8	70.9	67.9	63.0	71.6	72.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	107	231	499	1,074
CNEL:	116	249	536	1,156

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: High School to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,094 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,225 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.26	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.98	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.93	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.1	67.3	61.3	69.9	70.5
Medium Trucks:	63.5	62.9	56.5	55.0	63.4	63.7
Heavy Trucks:	63.6	63.0	53.9	55.2	63.6	63.7
Vehicle Noise:	71.7	70.8	67.8	63.0	71.5	72.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	229	493	1,061
CNEL:	114	246	530	1,142

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Bryan Avenue to Florence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 37,153 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,065 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.04	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.20	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.15	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	68.9	67.1	61.0	69.7	70.3
Medium Trucks:	63.3	62.6	56.3	54.7	63.2	63.4
Heavy Trucks:	63.3	62.8	53.7	55.0	63.3	63.5
Vehicle Noise:	71.5	70.6	67.6	62.7	71.3	71.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	103	221	476	1,026
CNEL:	110	238	512	1,104

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Portola Parkway to Settlers

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,169 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,829 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.20	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.44	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.39	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.3	66.5	60.5	69.1	69.7
Medium Trucks:	62.7	62.1	55.7	54.1	62.6	62.8
Heavy Trucks:	62.8	62.2	53.1	54.4	62.7	62.9
Vehicle Noise:	70.9	70.0	67.0	62.2	70.7	71.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	150	324	697
CNEL:	75	162	348	750

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Florence to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,281 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,993 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.94	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.30	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.26	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.8	67.0	60.9	69.6	70.2
Medium Trucks:	63.2	62.5	56.2	54.6	63.1	63.3
Heavy Trucks:	63.2	62.7	53.6	54.9	63.2	63.4
Vehicle Noise:	71.4	70.5	67.5	62.6	71.2	71.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	218	469	1,010
CNEL:	109	234	504	1,086

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Irvine Boulevard to Viewpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,782 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,292 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.78	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.46	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.41	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.8	59.8	68.4	69.0	
Medium Trucks:	62.1	61.4	55.0	53.5	61.9	62.2	
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2	
Vehicle Noise:	70.2	69.3	66.4	61.5	70.0	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	182	392	845
CNEL:	91	196	422	909



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Viewpark to Meadowood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,857 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,216 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.63	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.61	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.56	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.5	65.7	59.6	68.3	68.9
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0
Heavy Trucks:	61.9	61.4	52.3	53.6	61.9	62.0
Vehicle Noise:	70.1	69.2	66.2	61.3	69.9	70.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	178	383	826
CNEL:	89	191	413	889

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Settlers to Furrow

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,930 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 984 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.89	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-20.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-24.09	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.6	63.8	57.8	66.4	67.0
Medium Trucks:	60.0	59.4	53.0	51.5	59.9	60.2
Heavy Trucks:	60.1	59.5	50.4	51.7	60.0	60.2
Vehicle Noise:	68.2	67.3	64.3	59.5	68.0	68.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	99	214	461
CNEL:	50	107	230	496

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Meadowood to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,384 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,599 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.78	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-18.02	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.98	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.0	64.3	58.2	66.8	67.4
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	60.5	59.9	50.9	52.1	60.5	60.6
Vehicle Noise:	68.7	67.8	64.8	59.9	68.5	69.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	143	309	665
CNEL:	72	154	332	715

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Discovery Drive  
 Road Segment: Irvine Center Drive to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,332 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,100 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.03	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.22	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.2	62.2	60.4	54.4	63.0	63.6	
Medium Trucks:	57.2	56.5	50.2	48.6	57.1	57.3	
Heavy Trucks:	58.5	57.9	48.9	50.2	58.5	58.6	
Vehicle Noise:	65.2	64.4	61.1	56.5	65.1	65.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	136	293
CNEL:	31	68	146	314

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Discovery Drive  
 Road Segment: Waterworks Way to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,636 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	712 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.91	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.15	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.11	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.4	60.3	58.5	52.5	61.1	61.7
Medium Trucks:	55.3	54.7	48.3	46.7	55.2	55.4
Heavy Trucks:	56.6	56.1	47.0	48.3	56.6	56.8
Vehicle Noise:	63.4	62.5	59.2	54.6	63.2	63.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	102	219
CNEL:	23	51	109	235

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: East Yale Loop  
 Road Segment: Alton Parkway to Witherspoon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,590 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,121 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos: 77.5% 12.9% 9.6% 97.42% Medium Trucks: 84.8% 4.9% 10.3% 1.84% Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
	<b>Noise Source Elevations (in feet)</b>				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0				
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.94	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.18	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.14	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.3	62.3	60.5	54.4	63.1	63.7	
Medium Trucks:	57.3	56.6	50.3	48.7	57.2	57.4	
Heavy Trucks:	58.6	58.0	49.0	50.2	58.6	58.7	
Vehicle Noise:	65.3	64.4	61.2	56.6	65.1	65.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	297
CNEL:	32	68	147	318

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: East Yale Loop  
 Road Segment: Osborn Street to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,938 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,067 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.16	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.35	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.1	62.0	60.3	54.2	62.8	63.5	
Medium Trucks:	57.1	56.4	50.0	48.5	57.0	57.2	
Heavy Trucks:	58.4	57.8	48.8	50.0	58.4	58.5	
Vehicle Noise:	65.1	64.2	60.9	56.4	64.9	65.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	62	133	287
CNEL:	31	66	143	307

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: East Yale Loop  
 Road Segment: Yale Avenue to Springbrook South

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	11,895 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	981 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.52	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.76	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.72	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.7	61.7	59.9	53.9	62.5	63.1
Medium Trucks:	56.7	56.0	49.7	48.1	56.6	56.8
Heavy Trucks:	58.0	57.4	48.4	49.7	58.0	58.1
Vehicle Noise:	64.8	63.9	60.6	56.0	64.6	65.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	126	271
CNEL:	29	63	135	291



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: East Yale Loop  
 Road Segment: Springbrook North to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,574 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	707 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.94	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.18	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.14	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.3	60.3	58.5	52.4	61.1	61.7
Medium Trucks:	55.3	54.6	48.3	46.7	55.2	55.4
Heavy Trucks:	56.6	56.0	47.0	48.2	56.6	56.7
Vehicle Noise:	63.3	62.4	59.2	54.6	63.1	63.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	101	218
CNEL:	23	50	108	234

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: East Yale Loop  
 Road Segment: Woodspring to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,199 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	594 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.70	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.94	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.90	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.6	59.5	57.7	51.7	60.3	60.9
Medium Trucks:	54.5	53.9	47.5	46.0	54.4	54.7
Heavy Trucks:	55.9	55.3	46.2	47.5	55.8	56.0
Vehicle Noise:	62.6	61.7	58.4	53.8	62.4	62.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	42	90	194
CNEL:	21	45	97	208

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: East Yale Loop  
 Road Segment: Barranca Parkway to Eastshore

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,524 vehicles	Autos:				15
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):				15
Peak Hour Volume:	538 vehicles	Heavy Trucks (3+ Axles):				15
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.13	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.37	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.32	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.1	59.1	57.3	51.3	59.9	60.5
Medium Trucks:	54.1	53.4	47.1	45.5	54.0	54.2
Heavy Trucks:	55.4	54.8	45.8	47.1	55.4	55.5
Vehicle Noise:	62.1	61.2	58.0	53.4	62.0	62.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	84	182
CNEL:	19	42	90	195

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Eastwood  
 Road Segment: Bryan Avenue to Monticello

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,241 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 267 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-6.59	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-23.83	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-27.78	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	58.3	57.3	55.5	49.5	58.1	58.7	
Medium Trucks:	52.6	51.9	45.5	44.0	52.5	52.7	
Heavy Trucks:	54.4	53.8	44.8	46.0	54.4	54.5	
Vehicle Noise:	60.6	59.7	56.3	51.9	60.4	60.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	18	40	86
CNEL:	9	20	43	92

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Eastwood  
 Road Segment: Columbus to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,011 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 166 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-8.66	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-25.90	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-29.85	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.3	55.2	53.4	47.4	56.0	56.6
Medium Trucks:	50.5	49.8	43.5	41.9	50.4	50.6
Heavy Trucks:	52.3	51.8	42.7	44.0	52.3	52.5
Vehicle Noise:	58.5	57.6	54.2	49.8	58.3	58.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	13	29	62
CNEL:	7	14	31	67

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: El Camino Real  
 Road Segment: Jamboree Road to Alliance (SR-261 Bridge)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,398 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,600 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.64	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.59	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.9	63.8	62.0	56.0	64.6	65.2	
Medium Trucks:	58.8	58.2	51.8	50.3	58.7	59.0	
Heavy Trucks:	60.2	59.6	50.5	51.8	60.1	60.3	
Vehicle Noise:	66.9	66.0	62.7	58.2	66.7	67.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	175	376
CNEL:	40	87	187	403

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: El Camino Real North  
 Road Segment: El Camino Real to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,553 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 541 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.30	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.2	59.1	57.3	51.3	59.9	60.5	
Medium Trucks:	54.1	53.5	47.1	45.5	54.0	54.2	
Heavy Trucks:	55.4	54.9	45.8	47.1	55.4	55.6	
Vehicle Noise:	62.2	61.3	58.0	53.4	62.0	62.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	85	182
CNEL:	20	42	91	195

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Fairbanks  
 Road Segment: Alton Parkway to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 18,614 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,536 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.42	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-16.81	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-20.77	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.6	66.5	64.7	58.7	67.3	67.9	
Medium Trucks:	61.6	60.9	54.5	53.0	61.4	61.7	
Heavy Trucks:	62.9	62.3	53.2	54.5	62.8	63.0	
Vehicle Noise:	69.6	68.7	65.4	60.9	69.4	69.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	342
CNEL:	37	79	170	366



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Fairbanks  
 Road Segment: Irvine Boulevard to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,466 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 781 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.51	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-19.75	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-23.71	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.6	63.6	61.8	55.7	64.4	65.0	
Medium Trucks:	58.6	57.9	51.6	50.0	58.5	58.7	
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0	
Vehicle Noise:	66.6	65.7	62.5	57.9	66.5	66.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	101	218
CNEL:	23	50	108	233

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Fairchild Road  
 Road Segment: MacArthur Boulevard to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,081 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 584 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.48	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	60.9	59.1	53.0	61.7	62.3
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8
Heavy Trucks:	56.5	55.9	46.9	48.2	56.5	56.6
Vehicle Noise:	63.8	62.9	59.7	55.0	63.6	64.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	233
CNEL:	25	54	116	250

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Gateway Boulevard  
 Road Segment: Alton Parkway to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,010 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,403 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	1.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-15.96	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-19.91	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.8	59.7	58.0	51.9	60.5	61.1
Medium Trucks:	55.3	54.6	48.3	46.7	55.2	55.4
Heavy Trucks:	57.8	57.2	48.1	49.4	57.7	57.9
Vehicle Noise:	63.3	62.4	58.8	54.6	63.1	63.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	101	217
CNEL:	23	50	108	232

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative Project Name: Irvine GP  
 Road Name: Gateway Boulevard Job Number: 15937  
 Road Segment: Spectrum Center Drive (Fortune Drive) to Alton Parkway

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,678 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,046 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos:	77.5%	12.9%	9.6%	97.42%
	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
	<b>Noise Source Elevations (in feet)</b>				
	Autos:	2.000			
	Medium Trucks:	4.000			
	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos:	57.786			
	Medium Trucks:	57.717			
	Heavy Trucks:	57.787			

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	0.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.19	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.5	58.4	56.7	50.6	59.2	59.9
Medium Trucks:	54.0	53.3	47.0	45.4	53.9	54.1
Heavy Trucks:	56.5	55.9	46.9	48.1	56.5	56.6
Vehicle Noise:	62.0	61.2	57.5	53.3	61.8	62.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	83	179
CNEL:	19	41	88	190

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Gateway Boulevard  
 Road Segment: Irvine Center Drive to Meridian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,270 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 517 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-3.05	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-20.29	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-24.25	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	56.5	55.4	53.6	47.6	56.2	56.8	
Medium Trucks:	51.0	50.3	43.9	42.4	50.8	51.1	
Heavy Trucks:	53.4	52.8	43.8	45.1	53.4	53.5	
Vehicle Noise:	59.0	58.1	54.5	50.3	58.8	59.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	112
CNEL:	12	26	55	119

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Great Park Boulevard  
 Road Segment: Sand Canyon to Ridge Valley

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,507 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,754 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.34	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-13.90	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.86	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.6	71.5	69.8	63.7	72.3	72.9
Medium Trucks:	66.2	65.5	59.1	57.6	66.0	66.3
Heavy Trucks:	66.6	66.0	57.0	58.2	66.6	66.7
Vehicle Noise:	74.3	73.4	70.3	65.5	74.1	74.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	112	242	522	1,125
CNEL:	121	260	561	1,208

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Great Park Boulevard  
 Road Segment: Ridge Valley (O Street) to Bosque (LY Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,162 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,911 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.40	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.83	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.79	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	61.9	61.3	54.9	53.3	61.8	62.0
Heavy Trucks:	62.3	61.8	52.7	54.0	62.3	62.5
Vehicle Noise:	70.1	69.1	66.1	61.3	69.9	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	284	612
CNEL:	66	142	305	657

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Great Park Boulevard (EB)  
 Road Segment: Bosque to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 8,824 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 728 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 37.138				
Road Grade: 0.0%	Medium Trucks: 37.030				
Left View: -90.0 degrees	Heavy Trucks: 37.139				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.79	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-21.03	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-24.98	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.0	64.2	58.2	66.8	67.4
Medium Trucks:	60.6	60.0	53.6	52.0	60.5	60.7
Heavy Trucks:	61.0	60.4	51.4	52.7	61.0	61.1
Vehicle Noise:	68.7	67.8	64.8	60.0	68.5	69.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	139	300
CNEL:	32	69	150	322



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Great Park Boulevard (WB)  
 Road Segment: Bosque to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,648 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	631 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.41	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-21.65	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-25.60	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.4	63.6	57.5	66.2	66.8
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1
Heavy Trucks:	60.4	59.8	50.8	52.0	60.4	60.5
Vehicle Noise:	68.1	67.2	64.2	59.4	67.9	68.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	59	127	273
CNEL:	29	63	136	293

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: University Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,851 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,885 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.80	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-16.44	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-20.39	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	68.8	67.1	61.0	69.6	70.2
Medium Trucks:	63.7	63.0	56.6	55.1	63.5	63.8
Heavy Trucks:	64.5	63.9	54.9	56.1	64.5	64.6
Vehicle Noise:	71.7	70.8	67.7	63.0	71.5	72.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	102	221	475
CNEL:	51	110	237	510

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Michelson Drive to Coronado

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,028 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,560 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.13	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.06	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2
Heavy Trucks:	62.9	62.4	53.3	54.6	62.9	63.1
Vehicle Noise:	70.2	69.3	66.1	61.4	70.0	70.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	134	290	624
CNEL:	67	144	311	669

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: San Marino to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,121 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,402 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.86	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.34	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.2	59.2	67.8	68.4
Medium Trucks:	61.8	61.2	54.8	53.2	61.7	61.9
Heavy Trucks:	62.7	62.1	53.0	54.3	62.7	62.8
Vehicle Noise:	69.9	69.0	65.8	61.2	69.7	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	278	598
CNEL:	64	138	298	642

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Coronado to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,811 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,377 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.39	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.0	67.0	65.2	59.1	67.8	68.4	
Medium Trucks:	61.8	61.1	54.7	53.2	61.7	61.9	
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7	
Vehicle Noise:	69.9	69.0	65.8	61.1	69.7	70.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	128	276	594
CNEL:	64	137	296	637

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: San Carlo to San Marino

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,438 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,346 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.75	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.49	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.44	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	66.9	65.1	59.1	67.7	68.3
Medium Trucks:	61.7	61.1	54.7	53.1	61.6	61.8
Heavy Trucks:	62.6	62.0	52.9	54.2	62.5	62.7
Vehicle Noise:	69.8	68.9	65.7	61.1	69.6	70.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	273	589
CNEL:	63	136	293	631

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Main Street to San Carlo

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,916 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,303 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.67	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.57	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.52	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.8	65.1	59.0	67.6	68.2
Medium Trucks:	61.6	61.0	54.6	53.1	61.5	61.8
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	69.7	68.8	65.7	61.0	69.5	70.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	270	581
CNEL:	62	134	290	624

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Alton Parkway to San Leon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,000 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,733 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.44	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.76	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.6	63.8	57.8	66.4	67.0
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5
Heavy Trucks:	61.2	60.7	51.6	52.9	61.2	61.4
Vehicle Noise:	68.5	67.6	64.4	59.8	68.3	68.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	104	223	481
CNEL:	52	111	239	516



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: San Juan to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,733 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.44	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.76	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.7	65.6	63.8	57.8	66.4	67.0	
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5	
Heavy Trucks:	61.2	60.7	51.6	52.9	61.2	61.4	
Vehicle Noise:	68.5	67.6	64.4	59.8	68.3	68.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	104	223	481
CNEL:	52	111	239	516

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: San Leon to San Juan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,160 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,663 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.94	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.4	63.6	57.6	66.2	66.8
Medium Trucks:	60.2	59.6	53.2	51.7	60.1	60.3
Heavy Trucks:	61.1	60.5	51.4	52.7	61.1	61.2
Vehicle Noise:	68.3	67.4	64.3	59.6	68.1	68.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	101	217	468
CNEL:	50	108	233	502

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,757 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,300 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.01	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.4	64.3	62.6	56.5	65.1	65.7
Medium Trucks:	59.2	58.5	52.1	50.6	59.0	59.3
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1
Vehicle Noise:	67.2	66.3	63.2	58.5	67.0	67.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	86	184	397
CNEL:	43	92	198	426

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Deerfield Avenue to Poplar Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,478 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,277 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.89	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.08	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.3	64.3	62.5	56.4	65.1	65.7	
Medium Trucks:	59.1	58.4	52.0	50.5	59.0	59.2	
Heavy Trucks:	59.9	59.3	50.3	51.6	59.9	60.0	
Vehicle Noise:	67.2	66.3	63.1	58.4	67.0	67.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	85	182	392
CNEL:	42	91	195	421

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,135 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,414 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.45	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.69	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.64	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.8	64.7	62.9	56.9	65.5	66.1
Medium Trucks:	59.5	58.9	52.5	50.9	59.4	59.6
Heavy Trucks:	60.4	59.8	50.7	52.0	60.3	60.5
Vehicle Noise:	67.6	66.7	63.5	58.9	67.4	67.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	90	195	420
CNEL:	45	97	209	450

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Bridge Road to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,144 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,414 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.45	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.68	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.64	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.8	64.7	62.9	56.9	65.5	66.1	
Medium Trucks:	59.5	58.9	52.5	50.9	59.4	59.6	
Heavy Trucks:	60.4	59.8	50.7	52.0	60.3	60.5	
Vehicle Noise:	67.6	66.7	63.5	58.9	67.4	67.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	91	195	420
CNEL:	45	97	209	451

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Paseo Westpark to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,007 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,403 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.48	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.67	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.7	62.9	56.8	65.5	66.1
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6
Heavy Trucks:	60.3	59.7	50.7	52.0	60.3	60.4
Vehicle Noise:	67.6	66.7	63.5	58.8	67.4	67.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	90	194	418
CNEL:	45	97	208	448

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Poplar Street to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,653 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,126 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 42.814				
Road Grade: 0.0%		Medium Trucks: 42.720				
Left View: -90.0 degrees		Heavy Trucks: 42.814				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.43	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	79.45	-18.67	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	84.25	-22.63	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.8	66.5	67.1
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	61.3	60.7	51.7	53.0	61.3	61.4
Vehicle Noise:	68.6	67.7	64.5	59.8	68.4	68.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	181	390
CNEL:	42	90	194	418



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: California Avenue to Berkeley Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,232 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,257 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.96	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.20	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.15	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.3	64.2	62.4	56.4	65.0	65.6	
Medium Trucks:	59.0	58.3	52.0	50.4	58.9	59.1	
Heavy Trucks:	59.9	59.3	50.2	51.5	59.8	60.0	
Vehicle Noise:	67.1	66.2	63.0	58.4	66.9	67.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	180	388
CNEL:	42	90	193	416

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Culver Drive to California Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,994 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,237 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.03	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.27	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.22	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.2	64.1	62.4	56.3	64.9	65.5	
Medium Trucks:	58.9	58.3	51.9	50.4	58.8	59.1	
Heavy Trucks:	59.8	59.2	50.2	51.4	59.8	59.9	
Vehicle Noise:	67.0	66.1	63.0	58.3	66.8	67.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	83	178	384
CNEL:	41	89	191	412

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Berkeley to Bridge Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,544 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,200 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.16	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.40	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.35	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.0	62.2	56.2	64.8	65.4
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9
Heavy Trucks:	59.7	59.1	50.0	51.3	59.6	59.8
Vehicle Noise:	66.9	66.0	62.8	58.2	66.7	67.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	175	376
CNEL:	40	87	187	404

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Warner Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,236 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,092 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.81	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.76	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.6	63.6	61.8	55.8	64.4	65.0	
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5	
Heavy Trucks:	59.2	58.7	49.6	50.9	59.2	59.4	
Vehicle Noise:	66.5	65.6	62.4	57.7	66.3	66.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	164	354
CNEL:	38	82	176	379

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Hicks Canyon Drive  
 Road Segment: Delamesa to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,210 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 182 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-8.25	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	75.75	-25.49	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	81.57	-29.45	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	55.8	54.7	52.9	46.9	55.5	56.1	
Medium Trucks:	50.0	49.3	42.9	41.4	49.9	50.1	
Heavy Trucks:	51.8	51.2	42.2	43.5	51.8	51.9	
Vehicle Noise:	58.0	57.1	53.7	49.3	57.8	58.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	36	77
CNEL:	8	18	38	82

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Hornet (5th St)  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,346 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	276 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-4.99	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-22.23	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-26.18	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.4	53.3	51.6	45.5	54.1	54.7
Medium Trucks:	49.2	48.5	42.2	40.6	49.1	49.3
Heavy Trucks:	52.4	51.8	42.8	44.1	52.4	52.5
Vehicle Noise:	57.3	56.4	52.5	48.6	57.1	57.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	11	24	52
CNEL:	6	12	26	55

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Hubble  
 Road Segment: Irvine Center Drive to Bunsen

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,322 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 192 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-6.58	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-23.81	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-27.77	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.8	51.7	50.0	43.9	52.5	53.1
Medium Trucks:	47.6	47.0	40.6	39.1	47.5	47.7
Heavy Trucks:	50.8	50.3	41.2	42.5	50.8	50.9
Vehicle Noise:	55.7	54.8	50.9	47.0	55.5	55.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	19	41
CNEL:	4	9	20	43

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: SR-133 NB Off- Ramp to Ridge Valley (O Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 41,249 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,403 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.50	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.74	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.70	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.4	69.3	67.5	61.5	70.1	70.7	
Medium Trucks:	63.8	63.1	56.7	55.2	63.7	63.9	
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9	
Vehicle Noise:	72.0	71.0	68.1	63.2	71.8	72.2	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	237	510	1,100
CNEL:	118	255	549	1,183



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: SR-133 SB Off-Ramp to SR-133 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,804 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,366 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.45	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.79	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.75	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.3	67.5	61.4	70.1	70.7
Medium Trucks:	63.7	63.0	56.7	55.1	63.6	63.8
Heavy Trucks:	63.8	63.2	54.1	55.4	63.7	63.9
Vehicle Noise:	71.9	71.0	68.0	63.2	71.7	72.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	109	235	507	1,092
CNEL:	117	253	545	1,175

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Sand Canyon to SR-133 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,645 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,683 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.84	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.40	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.35	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.1	70.1	68.3	62.2	70.9	71.5	
Medium Trucks:	64.5	63.9	57.5	55.9	64.4	64.6	
Heavy Trucks:	64.6	64.0	54.9	56.2	64.5	64.7	
Vehicle Noise:	72.7	71.8	68.8	64.0	72.5	73.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	118	253	546	1,176
CNEL:	127	273	587	1,265

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Merit to Alton

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,805 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,954 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.88	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.36	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.31	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.8	68.7	66.9	60.9	69.5	70.1	
Medium Trucks:	63.2	62.5	56.1	54.6	63.0	63.3	
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3	
Vehicle Noise:	71.3	70.4	67.5	62.6	71.1	71.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	465	1,001
CNEL:	108	232	500	1,077

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Journey to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,381 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,919 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.83	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.41	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.36	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.7	68.7	66.9	60.8	69.5	70.1	
Medium Trucks:	63.1	62.4	56.1	54.5	63.0	63.2	
Heavy Trucks:	63.1	62.5	53.5	54.8	63.1	63.2	
Vehicle Noise:	71.3	70.4	67.4	62.5	71.1	71.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	99	214	461	993
CNEL:	107	230	496	1,068

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Ridge Valley (O Street) to Bosque (LY Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,010 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,641 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.39	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.84	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.80	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.2	66.4	60.4	69.0	69.6
Medium Trucks:	62.7	62.0	55.6	54.1	62.5	62.8
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.9	69.9	67.0	62.1	70.7	71.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	200	431	929
CNEL:	100	215	464	999

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Pusan Way to Chinon (B Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,080 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,564 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.27	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.97	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.93	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.1	66.3	60.3	68.9	69.5
Medium Trucks:	62.5	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	62.6	62.0	52.9	54.2	62.6	62.7
Vehicle Noise:	70.7	69.8	66.8	62.0	70.5	71.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	196	423	911
CNEL:	98	211	455	980

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Palo Lado to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,776 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,704 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.50	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.74	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.70	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.4	68.3	66.6	60.5	69.1	69.7
Medium Trucks:	62.8	62.1	55.7	54.2	62.7	62.9
Heavy Trucks:	62.8	62.2	53.2	54.4	62.8	62.9
Vehicle Noise:	71.0	70.0	67.1	62.2	70.8	71.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	94	203	438	944
CNEL:	102	219	471	1,015

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Culver Drive to Palo Lado

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,471 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,679 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.46	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.78	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.74	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.3	66.5	60.5	69.1	69.7
Medium Trucks:	62.7	62.1	55.7	54.2	62.6	62.8
Heavy Trucks:	62.8	62.2	53.1	54.4	62.7	62.9
Vehicle Noise:	70.9	70.0	67.0	62.2	70.7	71.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	94	202	435	938
CNEL:	101	217	468	1,009



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: SR-261 SB Off-Ramp to SR-261 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,500 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,599 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.33	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.91	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.87	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.1	66.4	60.3	68.9	69.6
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	62.6	62.0	53.0	54.3	62.6	62.7
Vehicle Noise:	70.8	69.9	66.9	62.0	70.6	71.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	427	919
CNEL:	99	213	459	989

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Old Myford Road to Market Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,742 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,619 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.36	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.88	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.84	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.2	66.4	60.4	69.0	69.6
Medium Trucks:	62.6	62.0	55.6	54.1	62.5	62.7
Heavy Trucks:	62.7	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	70.8	69.9	66.9	62.1	70.6	71.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	199	429	924
CNEL:	99	214	461	994

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Bosque (LY Street) to Modjeska

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,088 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,647 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.41	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.83	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.79	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.2	66.5	60.4	69.0	69.6
Medium Trucks:	62.7	62.0	55.6	54.1	62.6	62.8
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.9	69.9	67.0	62.1	70.7	71.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	200	432	930
CNEL:	100	216	465	1,001

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Jamboree Road to Old Myford Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,090 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,565 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.27	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.97	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.93	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.1	66.3	60.3	68.9	69.5
Medium Trucks:	62.5	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	70.7	69.8	66.8	62.0	70.5	71.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	196	423	911
CNEL:	98	211	455	980

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Market Place to SR-261 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 30,908 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,550 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.24	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.00	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.95	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.1	66.3	60.2	68.9	69.5
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6
Heavy Trucks:	62.5	62.0	52.9	54.2	62.5	62.7
Vehicle Noise:	70.7	69.8	66.8	61.9	70.5	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	195	421	907
CNEL:	98	210	453	976

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Jeffrey Road to Groveland

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,376 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,506 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.17	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.07	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.03	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.2	60.2	68.8	69.4
Medium Trucks:	62.4	61.8	55.4	53.9	62.3	62.6
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	70.6	69.7	66.7	61.9	70.4	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	193	416	897
CNEL:	96	208	448	965

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Bake Parkway to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,916 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,303 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.80	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.44	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.39	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.9	59.8	68.4	69.0
Medium Trucks:	62.1	61.4	55.0	53.5	62.0	62.2
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	70.3	69.3	66.4	61.5	70.1	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	183	394	848
CNEL:	91	196	423	912

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative Project Name: Irvine GP  
 Road Name: Irvine Boulevard Job Number: 15937  
 Road Segment: Independence Way (The Groves)/The Groves to Jeffrey Road

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,006 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,393 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos:	77.5%	12.9%	9.6%	97.42%
	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
	<b>Noise Source Elevations (in feet)</b>				
	Autos:	2.000			
	Medium Trucks:	4.000			
	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos:	74.458			
	Medium Trucks:	74.404			
	Heavy Trucks:	74.458			

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.97	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.27	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.23	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	62.2	61.6	55.2	53.7	62.1	62.4
Heavy Trucks:	62.3	61.7	52.6	53.9	62.3	62.4
Vehicle Noise:	70.4	69.5	66.5	61.7	70.2	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	187	404	870
CNEL:	94	202	434	936



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Chinon (B Street) to Merit

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,405 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,261 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.72	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.52	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.47	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	68.9
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.0	61.4	52.4	53.7	62.0	62.1
Vehicle Noise:	70.2	69.3	66.3	61.4	70.0	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	180	389	837
CNEL:	90	194	418	901

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: SR-261 NB Off-Ramp to Central Park

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,240 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,330 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.85	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.39	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.34	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.7	65.9	59.8	68.5	69.1
Medium Trucks:	62.1	61.5	55.1	53.5	62.0	62.2
Heavy Trucks:	62.2	61.6	52.5	53.8	62.1	62.3
Vehicle Noise:	70.3	69.4	66.4	61.6	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	184	397	854
CNEL:	92	198	427	919

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative Project Name: Irvine GP  
 Road Name: Irvine Boulevard Job Number: 15937  
 Road Segment: Pueblo Norte to Independence Way (The Groves)/ Parkwood

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,469 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,266 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.73	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.51	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.46	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.6	65.8	59.7	68.4	69.0
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.0	61.4	52.4	53.7	62.0	62.1
Vehicle Noise:	70.2	69.3	66.3	61.4	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	389	839
CNEL:	90	194	419	902

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Yale Avenue to Pueblo Norte

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,285 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,251 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.70	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.54	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.49	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.6	67.5	65.8	59.7	68.3	68.9	
Medium Trucks:	62.0	61.3	54.9	53.4	61.9	62.1	
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1	
Vehicle Noise:	70.2	69.2	66.3	61.4	70.0	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	180	388	835
CNEL:	90	194	417	898

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Modjeska to Pusan Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,040 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,148 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.50	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.74	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.70	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	61.8	61.1	54.7	53.2	61.7	61.9
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	70.0	69.0	66.1	61.2	69.8	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	376	809
CNEL:	87	188	404	871

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Central Park Avenue to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,480 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,020 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.23	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.01	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.96	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.1	67.1	65.3	59.2	67.9	68.5	
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6	
Heavy Trucks:	61.5	60.9	51.9	53.2	61.5	61.6	
Vehicle Noise:	69.7	68.8	65.8	60.9	69.5	70.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	167	361	777
CNEL:	84	180	388	836

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Parker to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,659 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,869 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.11	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.34	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.30	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	64.9	58.9	67.5	68.1
Medium Trucks:	61.2	60.5	54.1	52.6	61.0	61.3
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	69.4	68.4	65.5	60.6	69.2	69.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	342	738
CNEL:	79	171	368	794

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Alton Parkway to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,955 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,481 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-18.35	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-22.31	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.8	65.7	63.9	57.9	66.5	67.1	
Medium Trucks:	60.2	59.5	53.1	51.6	60.0	60.3	
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3	
Vehicle Noise:	68.3	67.4	64.5	59.6	68.1	68.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	293	632
CNEL:	68	146	315	680



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative Project Name: Irvine GP  
 Road Name: Irvine Center Drive Job Number: 15937  
 Road Segment: Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 52,889 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,363 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float:right">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.99	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.25	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.20	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.6	67.9	61.8	70.4	71.0
Medium Trucks:	64.3	63.6	57.2	55.7	64.2	64.4
Heavy Trucks:	64.7	64.1	55.1	56.3	64.7	64.8
Vehicle Noise:	72.4	71.5	68.4	63.7	72.2	72.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	112	242	521	1,122
CNEL:	121	260	560	1,205

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Orange Tree to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 49,786 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,107 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.73	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.51	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.47	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.0	69.0	67.2	61.1	69.8	70.4	
Medium Trucks:	63.6	62.9	56.6	55.0	63.5	63.7	
Heavy Trucks:	64.0	63.4	54.4	55.6	64.0	64.1	
Vehicle Noise:	71.7	70.8	67.8	63.0	71.5	72.0	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	229	493	1,062
CNEL:	114	246	530	1,141

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: I-405 SB Off-Ramp to Research

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 47,340 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,906 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.51	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.73	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.69	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	69.2	67.4	61.3	70.0	70.6
Medium Trucks:	63.8	63.1	56.8	55.2	63.7	63.9
Heavy Trucks:	64.2	63.6	54.6	55.8	64.2	64.3
Vehicle Noise:	71.9	71.0	68.0	63.2	71.7	72.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	104	224	484	1,042
CNEL:	112	241	520	1,120

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Irvine Valley College to Orange Tree

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 48,817 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,027 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.64	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.60	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.55	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	68.9	67.1	61.1	69.7	70.3
Medium Trucks:	63.5	62.8	56.5	54.9	63.4	63.6
Heavy Trucks:	63.9	63.3	54.3	55.6	63.9	64.0
Vehicle Noise:	71.6	70.7	67.7	62.9	71.4	71.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	105	226	487	1,049
CNEL:	113	243	523	1,127

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Fontaine Avenue to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 46,104 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,804 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.39	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.84	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.80	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.7	68.6	66.9	60.8	69.4	70.0	
Medium Trucks:	63.3	62.6	56.2	54.7	63.1	63.4	
Heavy Trucks:	63.7	63.1	54.1	55.3	63.7	63.8	
Vehicle Noise:	71.4	70.5	67.4	62.6	71.2	71.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	217	469	1,009
CNEL:	108	234	503	1,084

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Culver Drive to Deerwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,624 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,764 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.35	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.89	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.85	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.8	60.8	69.4	70.0
Medium Trucks:	63.2	62.5	56.2	54.6	63.1	63.3
Heavy Trucks:	63.6	63.0	54.0	55.3	63.6	63.7
Vehicle Noise:	71.3	70.4	67.4	62.6	71.2	71.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	465	1,002
CNEL:	108	232	500	1,077

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Deerwood to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,180 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,727 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.31	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.93	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.89	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.8	60.7	69.3	70.0
Medium Trucks:	63.2	62.5	56.1	54.6	63.1	63.3
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7
Vehicle Noise:	71.3	70.4	67.3	62.6	71.1	71.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	215	462	996
CNEL:	107	231	497	1,070

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Yale Avenue to Fontaine Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,578 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,760 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.34	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.89	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.85	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.8	60.8	69.4	70.0
Medium Trucks:	63.2	62.5	56.2	54.6	63.1	63.3
Heavy Trucks:	63.6	63.0	54.0	55.3	63.6	63.7
Vehicle Noise:	71.3	70.4	67.4	62.6	71.1	71.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	465	1,002
CNEL:	108	232	500	1,076



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Jeffrey Road to Irvine Valley College

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,489 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,670 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.24	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.00	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.96	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.5	68.5	66.7	60.7	69.3	69.9	
Medium Trucks:	63.1	62.4	56.1	54.5	63.0	63.2	
Heavy Trucks:	63.5	62.9	53.9	55.2	63.5	63.6	
Vehicle Noise:	71.2	70.3	67.3	62.5	71.0	71.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	99	212	458	986
CNEL:	106	228	492	1,059

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Alton Parkway to Spectrum

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 42,406 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,499 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.21	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.16	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.3	66.5	60.5	69.1	69.7
Medium Trucks:	62.9	62.2	55.9	54.3	62.8	63.0
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4
Vehicle Noise:	71.0	70.1	67.1	62.3	70.8	71.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	95	206	443	955
CNEL:	103	221	476	1,026

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Spectrum to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 41,920 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,458 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.98	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.26	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.21	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.2	66.5	60.4	69.0	69.6
Medium Trucks:	62.8	62.2	55.8	54.3	62.7	63.0
Heavy Trucks:	63.3	62.7	53.6	54.9	63.2	63.4
Vehicle Noise:	71.0	70.1	67.0	62.2	70.8	71.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	95	204	440	947
CNEL:	102	219	472	1,018

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Hearthstone to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,524 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,261 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.72	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.51	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.47	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	68.0	66.2	60.1	68.8	69.4
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	70.7	69.8	66.8	62.0	70.5	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	196	423	911
CNEL:	98	211	454	979

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Charter to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 38,843 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,205 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.65	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.59	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.55	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	67.9	66.1	60.1	68.7	69.3
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6
Heavy Trucks:	62.9	62.3	53.3	54.6	62.9	63.0
Vehicle Noise:	70.6	69.7	66.7	61.9	70.5	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	194	418	900
CNEL:	97	208	449	967

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Jamboree Road to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,809 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,954 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.30	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.94	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.90	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.6	67.5	65.8	59.7	68.3	68.9	
Medium Trucks:	62.2	61.5	55.1	53.6	62.0	62.3	
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7	
Vehicle Noise:	70.3	69.4	66.3	61.6	70.1	70.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	184	396	853
CNEL:	92	197	425	916

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Pacifica to Entertainment (Enterprise/Fortune)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,722 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,030 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.41	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.83	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.79	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.9	59.8	68.4	69.1
Medium Trucks:	62.3	61.6	55.2	53.7	62.2	62.4
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.4	69.5	66.4	61.7	70.2	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	187	403	867
CNEL:	93	201	433	932

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,773 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,034 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.41	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.83	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.78	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.7	65.9	59.8	68.5	69.1
Medium Trucks:	62.3	61.6	55.2	53.7	62.2	62.4
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.4	69.5	66.5	61.7	70.2	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	187	403	868
CNEL:	93	201	433	933



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Harvard Avenue to Hearthstone

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 33,946 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,801 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.06	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.17	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.13	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.3	65.5	59.5	68.1	68.7	
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.0	
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5	
Vehicle Noise:	70.1	69.1	66.1	61.3	69.9	70.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	382	823
CNEL:	88	191	410	884

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Research to Hubble

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,767 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,456 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.49	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.74	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.70	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	66.7	65.0	58.9	67.5	68.1	
Medium Trucks:	61.4	60.7	54.3	52.8	61.2	61.5	
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9	
Vehicle Noise:	69.5	68.6	65.5	60.7	69.3	69.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	350	754
CNEL:	81	175	376	810

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Barranca Parkway to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,213 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,658 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.84	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.40	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.36	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.1	67.1	65.3	59.3	67.9	68.5	
Medium Trucks:	61.7	61.0	54.7	53.1	61.6	61.8	
Heavy Trucks:	62.1	61.5	52.5	53.8	62.1	62.2	
Vehicle Noise:	69.8	68.9	65.9	61.1	69.6	70.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	171	369	795
CNEL:	85	184	396	854

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Bake Parkway to Muller

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,382 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,424 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.44	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.80	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.76	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.7	64.9	58.9	67.5	68.1
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4
Heavy Trucks:	61.7	61.1	52.1	53.4	61.7	61.8
Vehicle Noise:	69.4	68.5	65.5	60.7	69.2	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	347	748
CNEL:	80	173	373	803

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Discovery to Charter

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,850 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,710 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.92	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.32	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.27	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	67.2	65.4	59.3	68.0	68.6	
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9	
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3	
Vehicle Noise:	69.9	69.0	66.0	61.2	69.7	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	173	374	805
CNEL:	87	186	402	865

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Hubble to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,974 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,308 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.22	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.01	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.97	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.5	64.7	58.6	67.3	67.9
Medium Trucks:	61.1	60.4	54.1	52.5	61.0	61.2
Heavy Trucks:	61.5	60.9	51.9	53.1	61.5	61.6
Vehicle Noise:	69.2	68.3	65.3	60.5	69.0	69.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	72	156	336	723
CNEL:	78	167	361	777

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Muller to Tesla

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,678 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,201 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.02	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.22	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.18	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.3	64.5	58.4	67.1	67.7
Medium Trucks:	60.9	60.2	53.9	52.3	60.8	61.0
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4
Vehicle Noise:	69.0	68.1	65.1	60.3	68.8	69.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	151	325	701
CNEL:	75	162	350	753

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Sand Canyon Avenue to Odyssey

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,285 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,251 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.12	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.08	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.4	66.4	64.6	58.5	67.2	67.8	
Medium Trucks:	61.0	60.3	54.0	52.4	60.9	61.1	
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5	
Vehicle Noise:	69.1	68.2	65.2	60.4	68.9	69.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	153	330	712
CNEL:	76	165	355	764



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Tesla to Scientific Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,358 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,010 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.62	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.62	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.57	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.9	65.9	64.1	58.0	66.7	67.3
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	60.9	60.3	51.3	52.5	60.9	61.0
Vehicle Noise:	68.6	67.7	64.7	59.9	68.4	68.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	142	306	660
CNEL:	71	153	329	709

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Scientific Way to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,241 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,917 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.42	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.82	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.78	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.7	65.7	63.9	57.8	66.5	67.1	
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4	
Heavy Trucks:	60.7	60.1	51.1	52.3	60.7	60.8	
Vehicle Noise:	68.4	67.5	64.5	59.7	68.2	68.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	138	297	639
CNEL:	69	148	319	687

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Gateway Boulevard to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,879 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,970 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.54	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.70	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.66	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.8	65.8	64.0	58.0	66.6	67.2	
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5	
Heavy Trucks:	60.8	60.2	51.2	52.4	60.8	60.9	
Vehicle Noise:	68.5	67.6	64.6	59.8	68.3	68.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	140	302	651
CNEL:	70	151	325	699

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Laguna Canyon Road to Discovery

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,024 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,982 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.56	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.68	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.63	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.9	65.8	64.0	58.0	66.6	67.2	
Medium Trucks:	60.4	59.8	53.4	51.9	60.3	60.5	
Heavy Trucks:	60.8	60.3	51.2	52.5	60.8	61.0	
Vehicle Noise:	68.6	67.6	64.6	59.8	68.4	68.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	141	303	654
CNEL:	70	151	326	702

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Odyssey to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,977 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,978 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.55	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.68	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.64	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.9	65.8	64.0	58.0	66.6	67.2	
Medium Trucks:	60.4	59.8	53.4	51.8	60.3	60.5	
Heavy Trucks:	60.8	60.3	51.2	52.5	60.8	60.9	
Vehicle Noise:	68.6	67.6	64.6	59.8	68.4	68.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	141	303	653
CNEL:	70	151	326	701

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive (Edinger)  
 Road Segment: Redhill Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,543 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,262 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.73	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.51	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.47	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.0	68.0	66.2	60.1	68.8	69.4	
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7	
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1	
Vehicle Noise:	70.7	69.8	66.8	62.0	70.5	71.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	196	423	911
CNEL:	98	211	454	979

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: I-5 SB Off-Ramp to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 69,825 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,761 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.78	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-12.46	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-16.41	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.7	71.6	69.8	63.8	72.4	73.0	
Medium Trucks:	66.1	65.4	59.0	57.5	65.9	66.2	
Heavy Trucks:	66.1	65.5	56.5	57.7	66.1	66.2	
Vehicle Noise:	74.2	73.3	70.4	65.5	74.0	74.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	156	337	725	1,562
CNEL:	168	362	780	1,681

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 81,976 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 6,763 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.48	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-11.76	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-15.72	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.8	72.7	70.9	64.9	73.5	74.1
Medium Trucks:	67.2	66.5	60.1	58.6	67.0	67.3
Heavy Trucks:	67.2	66.6	57.6	58.8	67.2	67.3
Vehicle Noise:	75.4	74.4	71.5	66.6	75.1	75.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	176	380	818	1,763
CNEL:	190	409	881	1,897



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Walnut Avenue to Michelle Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 60,442 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,986 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.16	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.08	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.04	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.0	71.0	69.2	63.2	71.8	72.4	
Medium Trucks:	65.4	64.8	58.4	56.8	65.3	65.5	
Heavy Trucks:	65.5	64.9	55.8	57.1	65.4	65.6	
Vehicle Noise:	73.6	72.7	69.7	64.9	73.4	73.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	142	306	659	1,419
CNEL:	153	329	709	1,526

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: I-405 NB Off-Ramp to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 81,891 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 6,756 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.47	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-11.76	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-15.72	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	75.1	74.1	72.3	66.3	74.9	75.5
Medium Trucks:	68.5	67.9	61.5	60.0	68.4	68.7
Heavy Trucks:	68.6	68.0	58.9	60.2	68.5	68.7
Vehicle Noise:	76.7	75.8	72.8	68.0	76.5	77.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	272	586	1,263	2,721
CNEL:	293	631	1,359	2,928

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Michelle Drive to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 56,408 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,654 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.86	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.38	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.34	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.7	70.7	68.9	62.9	71.5	72.1
Medium Trucks:	65.1	64.5	58.1	56.5	65.0	65.2
Heavy Trucks:	65.2	64.6	55.5	56.8	65.1	65.3
Vehicle Noise:	73.3	72.4	69.4	64.6	73.1	73.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	136	292	629	1,355
CNEL:	146	314	677	1,458

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Main Street to Kelvin Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 70,975 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,855 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.85	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.39	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.34	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	74.5	73.5	71.7	65.6	74.3	74.9	
Medium Trucks:	67.9	67.2	60.9	59.3	67.8	68.0	
Heavy Trucks:	67.9	67.4	58.3	59.6	67.9	68.1	
Vehicle Noise:	76.1	75.2	72.2	67.3	75.9	76.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	247	533	1,148	2,474
CNEL:	266	573	1,235	2,661

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 88,495 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 7,301 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 130 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 88.792 Medium Trucks: 88.747 Heavy Trucks: 88.792																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.81	-3.84	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-11.43	-3.84	-1.20	-4.96	0.000	0.000
Heavy Trucks:	86.40	-15.38	-3.84	-1.20	-5.14	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.5	71.5	69.7	63.7	72.3	72.9
Medium Trucks:	65.9	65.3	58.9	57.4	65.8	66.1
Heavy Trucks:	66.0	65.4	56.3	57.6	66.0	66.1
Vehicle Noise:	74.1	73.2	70.2	65.4	73.9	74.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	201	433	932	2,009
CNEL:	216	466	1,003	2,161

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Kelvin Avenue to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 65,776 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,426 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.52	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.72	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.67	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.2	73.1	71.4	65.3	73.9	74.5
Medium Trucks:	67.6	66.9	60.6	59.0	67.5	67.7
Heavy Trucks:	67.6	67.0	58.0	59.2	67.6	67.7
Vehicle Noise:	75.8	74.8	71.9	67.0	75.6	76.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	235	507	1,091	2,351
CNEL:	253	545	1,174	2,530

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 64,955 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,359 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.47	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.77	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.73	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.1	73.1	71.3	65.3	73.9	74.5
Medium Trucks:	67.5	66.9	60.5	59.0	67.4	67.6
Heavy Trucks:	67.6	67.0	57.9	59.2	67.5	67.7
Vehicle Noise:	75.7	74.8	71.8	67.0	75.5	76.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	233	502	1,082	2,332
CNEL:	251	540	1,164	2,509

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Birch Street to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 49,612 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,093 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.30	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.94	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.90	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.2	70.1	68.4	62.3	70.9	71.5
Medium Trucks:	64.6	63.9	57.5	56.0	64.5	64.7
Heavy Trucks:	64.6	64.0	55.0	56.2	64.6	64.7
Vehicle Noise:	72.8	71.8	68.9	64.0	72.6	73.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	124	268	577	1,244
CNEL:	134	288	621	1,338



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Dupont Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 55,614 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,588 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.79	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.44	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.40	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.1	71.0	69.3	63.2	71.8	72.4	
Medium Trucks:	65.5	64.8	58.4	56.9	65.4	65.6	
Heavy Trucks:	65.5	64.9	55.9	57.1	65.5	65.6	
Vehicle Noise:	73.7	72.7	69.8	64.9	73.5	73.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	136	293	632	1,361
CNEL:	146	316	680	1,465

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Alton Parkway to Beckman

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 59,192 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,883 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.06	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.17	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.13	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.7	72.7	70.9	64.9	73.5	74.1
Medium Trucks:	67.1	66.5	60.1	58.5	67.0	67.2
Heavy Trucks:	67.2	66.6	57.5	58.8	67.1	67.3
Vehicle Noise:	75.3	74.4	71.4	66.6	75.1	75.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	219	472	1,017	2,192
CNEL:	236	508	1,094	2,358

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Fairchild Road to Birch Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 50,815 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,192 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.40	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.84	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.79	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.7	70.6	68.9	62.8	71.4	72.0
Medium Trucks:	65.1	64.4	58.1	56.5	65.0	65.2
Heavy Trucks:	65.1	64.5	55.5	56.7	65.1	65.2
Vehicle Noise:	73.3	72.3	69.4	64.5	73.1	73.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	128	276	595	1,282
CNEL:	138	297	640	1,379

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Beckman to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 54,823 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,523 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.73	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.51	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.46	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.4	72.3	70.6	64.5	73.1	73.7
Medium Trucks:	66.8	66.1	59.8	58.2	66.7	66.9
Heavy Trucks:	66.8	66.2	57.2	58.5	66.8	66.9
Vehicle Noise:	75.0	74.1	71.1	66.2	74.8	75.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	208	449	967	2,083
CNEL:	224	483	1,040	2,240

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: I-5 NB Off-Ramp to El Camino Real

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 52,710 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,349 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 56.593				
Road Grade: 0.0%	Medium Trucks: 56.522				
Left View: -90.0 degrees	Heavy Trucks: 56.593				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.56	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.68	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.63	-0.91	-1.20	-5.16	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.2	72.2	70.4	64.3	73.0	73.6	
Medium Trucks:	66.6	66.0	59.6	58.0	66.5	66.7	
Heavy Trucks:	66.7	66.1	57.0	58.3	66.6	66.8	
Vehicle Noise:	74.8	73.9	70.9	66.1	74.6	75.1	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	203	437	942	2,029
CNEL:	218	470	1,013	2,182

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Campus Drive to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 46,420 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,830 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.01	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.23	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.19	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.3	70.2	68.5	62.4	71.0	71.6
Medium Trucks:	64.7	64.0	57.7	56.1	64.6	64.8
Heavy Trucks:	64.7	64.1	55.1	56.4	64.7	64.8
Vehicle Noise:	72.9	72.0	69.0	64.1	72.7	73.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	260	560	1,207
CNEL:	130	280	603	1,298

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: El Camino Real to West Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 51,138 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,219 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.43	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.81	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.76	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.1	72.0	70.3	64.2	72.8	73.4
Medium Trucks:	66.5	65.8	59.5	57.9	66.4	66.6
Heavy Trucks:	66.5	65.9	56.9	58.1	66.5	66.6
Vehicle Noise:	74.7	73.8	70.8	65.9	74.5	75.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	199	428	923	1,988
CNEL:	214	461	993	2,139

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: West Drive to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 51,091 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,215 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.43	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.81	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.77	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.1	72.0	70.3	64.2	72.8	73.4	
Medium Trucks:	66.5	65.8	59.5	57.9	66.4	66.6	
Heavy Trucks:	66.5	65.9	56.9	58.1	66.5	66.6	
Vehicle Noise:	74.7	73.7	70.8	65.9	74.5	74.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	199	428	922	1,987
CNEL:	214	461	992	2,138



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Bryan Avenue to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,458 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,915 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.11	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-14.13	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-18.09	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.8	71.7	69.9	63.9	72.5	73.1
Medium Trucks:	66.2	65.5	59.1	57.6	66.1	66.3
Heavy Trucks:	66.2	65.6	56.6	57.8	66.2	66.3
Vehicle Noise:	74.4	73.4	70.5	65.6	74.2	74.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	189	408	878	1,892
CNEL:	204	438	945	2,035

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Koll Center to Fairchild Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 43,123 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,558 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.69	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.55	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.51	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.0	69.9	68.2	62.1	70.7	71.3
Medium Trucks:	64.4	63.7	57.3	55.8	64.3	64.5
Heavy Trucks:	64.4	63.8	54.8	56.0	64.4	64.5
Vehicle Noise:	72.6	71.6	68.7	63.8	72.4	72.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	248	533	1,149
CNEL:	124	266	574	1,236

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: MacArthur Boulevard to Koll Center

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 42,776 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,529 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.65	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.58	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.54	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.9	69.9	68.1	62.1	70.7	71.3	
Medium Trucks:	64.3	63.7	57.3	55.8	64.2	64.5	
Heavy Trucks:	64.4	63.8	54.7	56.0	64.4	64.5	
Vehicle Noise:	72.5	71.6	68.6	63.8	72.3	72.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	246	530	1,143
CNEL:	123	265	571	1,230

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Irvine Boulevard to Portola Pakway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,015 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,394 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.97	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.27	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.23	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	62.2	61.6	55.2	53.7	62.1	62.4
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.4	69.5	66.5	61.7	70.2	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	187	404	870
CNEL:	94	202	434	936

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Warner Avenue to Edinger Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 87,509 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 7,219 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 96 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.438 Medium Trucks: 42.344 Heavy Trucks: 42.439																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.76	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-11.48	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-15.43	0.96	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	77.3	76.2	74.5	68.4	77.0	77.7	
Medium Trucks:	70.7	70.0	63.7	62.1	70.6	70.8	
Heavy Trucks:	70.7	70.1	61.1	62.4	70.7	70.8	
Vehicle Noise:	78.9	78.0	75.0	70.1	78.7	79.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	243	523	1,127	2,428
CNEL:	261	563	1,212	2,612

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 72,128 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,951 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 96 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 64.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 64.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 42.438				
Road Grade: 0.0%	Medium Trucks: 42.344				
Left View: -90.0 degrees	Heavy Trucks: 42.439				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.92	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-12.32	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-16.27	0.96	-1.20	-5.31	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.5	75.4	73.6	67.6	76.2	76.8
Medium Trucks:	69.9	69.2	62.8	61.3	69.7	70.0
Heavy Trucks:	69.9	69.3	60.3	61.5	69.9	70.0
Vehicle Noise:	78.0	77.1	74.2	69.3	77.8	78.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	213	460	991	2,134
CNEL:	230	495	1,066	2,296

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Edinger Avenue to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 66,499 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,486 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 96 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.438 Medium Trucks: 42.344 Heavy Trucks: 42.439																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.57	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-12.67	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-16.62	0.96	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	76.1	75.1	73.3	67.2	75.9	76.5	
Medium Trucks:	69.5	68.8	62.5	60.9	69.4	69.6	
Heavy Trucks:	69.5	69.0	59.9	61.2	69.5	69.6	
Vehicle Noise:	77.7	76.8	73.8	68.9	77.5	78.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	202	436	938	2,022
CNEL:	218	469	1,010	2,175

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Walnut Avenue to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 56,523 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,663 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.74	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.50	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.46	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.2	66.5	60.4	69.0	69.6
Medium Trucks:	63.1	62.4	56.0	54.5	62.9	63.2
Heavy Trucks:	63.9	63.3	54.3	55.5	63.9	64.0
Vehicle Noise:	71.1	70.2	67.1	62.4	70.9	71.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	209	450	971
CNEL:	104	224	483	1,041



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jeffrey Road  
 Road Segment: I-5 NB Off-Ramp to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 63,296 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,222 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	5.23	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.01	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-15.97	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	69.1	67.4	61.3	69.9	70.5
Medium Trucks:	64.0	63.3	56.9	55.4	63.8	64.1
Heavy Trucks:	64.8	64.2	55.2	56.4	64.8	64.9
Vehicle Noise:	72.0	71.1	68.0	63.3	71.8	72.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	229	493	1,062
CNEL:	114	245	529	1,139

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Poplar (Meadows) to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 50,868 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,197 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.28	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.96	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.92	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	63.4	62.9	53.8	55.1	63.4	63.5
Vehicle Noise:	70.7	69.8	66.6	61.9	70.5	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	195	420	905
CNEL:	97	209	450	970

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 50,717 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,184 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.27	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.97	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.93	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.8	66.0	59.9	68.6	69.2
Medium Trucks:	62.6	61.9	55.5	54.0	62.5	62.7
Heavy Trucks:	63.4	62.8	53.8	55.1	63.4	63.5
Vehicle Noise:	70.7	69.8	66.6	61.9	70.5	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	195	419	903
CNEL:	97	209	450	969

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Center Drive to Poplar (Meadows)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 48,682 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,016 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.09	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.15	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.11	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5
Heavy Trucks:	63.2	62.7	53.6	54.9	63.2	63.4
Vehicle Noise:	70.5	69.6	66.4	61.8	70.3	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	189	408	879
CNEL:	94	203	437	942

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Jeffrey Road  
 Road Segment: I-405 NB Off-Ramp to Quail Creek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 50,815 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,192 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.27	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.96	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.92	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	63.4	62.8	53.8	55.1	63.4	63.5
Vehicle Noise:	70.7	69.8	66.6	61.9	70.5	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	195	420	904
CNEL:	97	209	450	970

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Barranca Parkway to Irvine Valley College

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 48,023 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,962 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">VehicleType</th> <th style="text-align: center;">Day</th> <th style="text-align: center;">Evening</th> <th style="text-align: center;">Night</th> <th style="text-align: center;">Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td style="text-align: center;">77.5%</td> <td style="text-align: center;">12.9%</td> <td style="text-align: center;">9.6%</td> <td style="text-align: center;">97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td style="text-align: center;">84.8%</td> <td style="text-align: center;">4.9%</td> <td style="text-align: center;">10.3%</td> <td style="text-align: center;">1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td style="text-align: center;">86.5%</td> <td style="text-align: center;">2.7%</td> <td style="text-align: center;">10.8%</td> <td style="text-align: center;">0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.21	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.17	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.6	67.5	65.8	59.7	68.3	68.9	
Medium Trucks:	62.3	61.7	55.3	53.8	62.2	62.5	
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3	
Vehicle Noise:	70.4	69.5	66.4	61.7	70.2	70.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	188	404	871
CNEL:	93	201	434	934

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Quail Creek to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 48,969 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,040 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.11	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.13	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.08	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.4	61.8	55.4	53.9	62.3	62.5
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4
Vehicle Noise:	70.5	69.6	66.5	61.8	70.3	70.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	190	409	882
CNEL:	95	204	439	946

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Valley College to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,528 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,756 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.80	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.44	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.40	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2
Heavy Trucks:	63.0	62.4	53.3	54.6	62.9	63.1
Vehicle Noise:	70.2	69.3	66.1	61.5	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	390	840
CNEL:	90	194	418	901



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Trabuco Road to Hideaway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 37,721 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,112 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.98	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.26	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.21	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.5	64.7	58.7	67.3	67.9
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4
Heavy Trucks:	62.1	61.6	52.5	53.8	62.1	62.2
Vehicle Noise:	69.4	68.5	65.3	60.6	69.2	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	344	741
CNEL:	80	171	369	795

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Hideaway to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,668 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,108 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.97	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.27	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.22	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.5	64.7	58.7	67.3	67.9
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4
Heavy Trucks:	62.1	61.5	52.5	53.8	62.1	62.2
Vehicle Noise:	69.4	68.5	65.3	60.6	69.2	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	344	740
CNEL:	79	171	369	794

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Roosevelt to Grove

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 41,046 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,386 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.35	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.89	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.85	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.3	65.5	59.4	68.1	68.7	
Medium Trucks:	62.1	61.4	55.0	53.5	62.0	62.2	
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0	
Vehicle Noise:	70.2	69.2	66.1	61.4	70.0	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	171	369	795
CNEL:	85	184	396	853

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Grove to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 38,896 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,209 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.11	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.13	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.08	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.3	59.2	67.8	68.4
Medium Trucks:	61.8	61.2	54.8	53.3	61.7	62.0
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	69.9	69.0	65.9	61.2	69.7	70.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	356	767
CNEL:	82	177	382	823

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Bryan Avenue to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,845 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,380 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.81	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.42	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.38	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	60.1	59.5	53.1	51.6	60.0	60.2
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1
Vehicle Noise:	68.2	67.3	64.2	59.5	68.0	68.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	134	288	620
CNEL:	66	143	309	665

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Encore to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,420 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,272 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.91	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-18.14	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-22.10	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.7	62.6	60.8	54.8	63.4	64.0
Medium Trucks:	57.4	56.7	50.4	48.8	57.3	57.5
Heavy Trucks:	58.3	57.7	48.6	49.9	58.2	58.4
Vehicle Noise:	65.5	64.6	61.4	56.8	65.3	65.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	88	189	408
CNEL:	44	94	203	438

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Boulevard to Encore

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,436 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,191 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">VehicleType</th> <th style="text-align: center;">Day</th> <th style="text-align: center;">Evening</th> <th style="text-align: center;">Night</th> <th style="text-align: center;">Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td style="text-align: center;">77.5%</td> <td style="text-align: center;">12.9%</td> <td style="text-align: center;">9.6%</td> <td style="text-align: center;">97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td style="text-align: center;">84.8%</td> <td style="text-align: center;">4.9%</td> <td style="text-align: center;">10.3%</td> <td style="text-align: center;">1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td style="text-align: center;">86.5%</td> <td style="text-align: center;">2.7%</td> <td style="text-align: center;">10.8%</td> <td style="text-align: center;">0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.19	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-18.43	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-22.39	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.4	62.3	60.5	54.5	63.1	63.7
Medium Trucks:	57.1	56.5	50.1	48.5	57.0	57.2
Heavy Trucks:	58.0	57.4	48.3	49.6	58.0	58.1
Vehicle Noise:	65.2	64.3	61.2	56.5	65.0	65.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	181	391
CNEL:	42	90	195	419

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Jeronimo Road  
 Road Segment: Goodyear to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,085 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	667 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.71	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.90	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.5	61.4	59.7	53.6	62.2	62.8
Medium Trucks:	56.3	55.6	49.2	47.7	56.1	56.4
Heavy Trucks:	57.1	56.5	47.5	48.7	57.1	57.2
Vehicle Noise:	64.3	63.4	60.3	55.6	64.1	64.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	55	118	255
CNEL:	27	59	127	273



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jeronimo Road  
 Road Segment: Alton Parkway to Goodyear

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 7,560 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 624 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.20	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.2	61.1	59.4	53.3	62.0	62.6
Medium Trucks:	56.0	55.3	48.9	47.4	55.9	56.1
Heavy Trucks:	56.8	56.2	47.2	48.4	56.8	56.9
Vehicle Noise:	64.0	63.1	60.0	55.3	63.9	64.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	113	243
CNEL:	26	56	121	261

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Old Laguna Canyon Road to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 52,519 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,333 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.55	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.69	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.65	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.4	70.4	68.6	62.5	71.2	71.8	
Medium Trucks:	64.8	64.1	57.8	56.2	64.7	64.9	
Heavy Trucks:	64.8	64.3	55.2	56.5	64.8	65.0	
Vehicle Noise:	73.0	72.1	69.1	64.3	72.8	73.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	129	278	600	1,292
CNEL:	139	299	645	1,390

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Laguna Canyon Freeway to Quail Hill Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,624 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,372 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.45	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.69	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.64	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.3	59.2	67.8	68.4
Medium Trucks:	61.5	60.8	54.4	52.9	61.4	61.6
Heavy Trucks:	61.5	60.9	51.9	53.1	61.5	61.6
Vehicle Noise:	69.7	68.7	65.8	60.9	69.5	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	124	267	575
CNEL:	62	133	287	619

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Discovery to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,112 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,247 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.86	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.06	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.7	66.6	64.8	58.8	67.4	68.0	
Medium Trucks:	61.1	60.4	54.0	52.5	60.9	61.2	
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2	
Vehicle Noise:	69.2	68.3	65.4	60.5	69.0	69.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	251	540
CNEL:	58	125	270	581

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: I-405 Overcrossing to Pasteur

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,544 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 705 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.93	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-21.17	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.12	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.0	64.9	63.2	57.1	65.7	66.3	
Medium Trucks:	59.6	58.9	52.5	51.0	59.4	59.7	
Heavy Trucks:	60.0	59.4	50.3	51.6	59.9	60.1	
Vehicle Noise:	67.7	66.8	63.7	58.9	67.5	67.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	73	158	340
CNEL:	36	79	169	365

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Irvine Center Drive to Discovery

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,381 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,104 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.39	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.63	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.59	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.1	64.3	58.3	66.9	67.5
Medium Trucks:	60.5	59.9	53.5	52.0	60.4	60.6
Heavy Trucks:	60.6	60.0	50.9	52.2	60.5	60.7
Vehicle Noise:	68.7	67.8	64.8	60.0	68.5	69.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	107	231	498
CNEL:	54	115	249	536

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Quail Hill Parkway to I-405 Overcrossing

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,544 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 705 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.93	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-21.17	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.12	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.0	64.9	63.2	57.1	65.7	66.3	
Medium Trucks:	59.6	58.9	52.5	51.0	59.4	59.7	
Heavy Trucks:	60.0	59.4	50.3	51.6	59.9	60.1	
Vehicle Noise:	67.7	66.8	63.7	58.9	67.5	67.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	73	158	340
CNEL:	36	79	169	365

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Pasteur to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,491 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 701 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-4.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-21.61	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-25.56	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.2	64.1	62.3	56.3	64.9	65.5	
Medium Trucks:	58.6	57.9	51.5	50.0	58.4	58.7	
Heavy Trucks:	58.6	58.0	49.0	50.2	58.6	58.7	
Vehicle Noise:	66.7	65.8	62.9	58.0	66.5	67.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	171	368
CNEL:	40	85	184	396



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Waterworks to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,487 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 783 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-3.89	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-21.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-25.08	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.6	64.6	62.8	56.8	65.4	66.0	
Medium Trucks:	59.0	58.4	52.0	50.5	58.9	59.2	
Heavy Trucks:	59.1	58.5	49.4	50.7	59.1	59.2	
Vehicle Noise:	67.2	66.3	63.3	58.5	67.0	67.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	85	184	396
CNEL:	43	92	198	426

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,272 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 600 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-5.04	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-22.28	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-26.24	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.5	63.4	61.7	55.6	64.2	64.8	
Medium Trucks:	57.9	57.2	50.9	49.3	57.8	58.0	
Heavy Trucks:	57.9	57.3	48.3	49.5	57.9	58.0	
Vehicle Noise:	66.1	65.1	62.2	57.3	65.9	66.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	154	332
CNEL:	36	77	166	357

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Barranca Parkway to Waterworks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,040 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 581 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-5.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-22.42	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-26.38	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.4	63.3	61.5	55.5	64.1	64.7	
Medium Trucks:	57.7	57.1	50.7	49.2	57.6	57.9	
Heavy Trucks:	57.8	57.2	48.2	49.4	57.8	57.9	
Vehicle Noise:	65.9	65.0	62.0	57.2	65.7	66.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	70	151	324
CNEL:	35	75	162	349

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Lake Forest Drive  
 Road Segment: Hidden Canyon to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,642 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,538 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.78	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.73	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.4	66.4	64.6	58.5	67.2	67.8	
Medium Trucks:	61.0	60.3	54.0	52.4	60.9	61.1	
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5	
Vehicle Noise:	69.1	68.2	65.2	60.4	68.9	69.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	246	529
CNEL:	57	122	264	569

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Lake Forest Drive  
 Road Segment: Bake Parkway to Hidden Canyon (Romano)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 18,471 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,524 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.58	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.82	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.77	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.4	66.3	64.5	58.5	67.1	67.7	
Medium Trucks:	60.9	60.3	53.9	52.4	60.8	61.1	
Heavy Trucks:	61.4	60.8	51.7	53.0	61.3	61.5	
Vehicle Noise:	69.1	68.2	65.1	60.3	68.9	69.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	113	244	526
CNEL:	57	122	262	565

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Lake Forest Drive  
 Road Segment: Tesla to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,734 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,133 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.87	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-19.10	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-23.06	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.4	63.4	61.6	55.6	64.2	64.8	
Medium Trucks:	58.0	57.3	51.0	49.4	57.9	58.1	
Heavy Trucks:	58.4	57.8	48.8	50.0	58.4	58.5	
Vehicle Noise:	66.1	65.2	62.2	57.4	65.9	66.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	97	209	450
CNEL:	48	104	225	484

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Lake Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,179 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	510 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	50.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 42.814				
Road Grade:	0.0%	Medium Trucks: 42.720				
Left View:	-90.0 degrees	Heavy Trucks: 42.814				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-2.32	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	70.80	-19.56	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	77.97	-23.52	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.1	55.1	53.3	47.2	55.9	56.5
Medium Trucks:	51.0	50.3	43.9	42.4	50.8	51.1
Heavy Trucks:	54.2	53.6	44.5	45.8	54.1	54.3
Vehicle Noise:	59.0	58.2	54.3	50.3	58.8	59.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	42	90
CNEL:	10	21	44	96

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Lynx  
 Road Segment: Irvine Boulevard to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,254 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 103 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-9.25	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-26.49	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-30.45	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	50.1	49.1	47.3	41.2	49.9	50.5
Medium Trucks:	45.0	44.3	37.9	36.4	44.8	45.1
Heavy Trucks:	48.2	47.6	38.5	39.8	48.1	48.3
Vehicle Noise:	53.0	52.2	48.3	44.3	52.8	53.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	3	6	12	27
CNEL:	3	6	13	29



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: I-405 SB Off-Ramp to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 61,860 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,103 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 60 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 56.593				
Road Grade: 0.0%	Medium Trucks: 56.522				
Left View: -90.0 degrees	Heavy Trucks: 56.593				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.88	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-13.36	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-17.32	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	75.0	73.9	72.2	66.1	74.7	75.3
Medium Trucks:	68.2	67.6	61.2	59.6	68.1	68.3
Heavy Trucks:	67.9	67.3	58.3	59.5	67.9	68.0
Vehicle Noise:	76.5	75.5	72.7	67.7	76.3	76.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	262	563	1,214	2,615
CNEL:	282	607	1,308	2,817

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Main Street to I-405 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 60,715 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,009 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.80	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-13.44	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-17.40	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	74.9	73.8	72.1	66.0	74.6	75.3	
Medium Trucks:	68.1	67.5	61.1	59.6	68.0	68.3	
Heavy Trucks:	67.8	67.2	58.2	59.4	67.8	67.9	
Vehicle Noise:	76.4	75.5	72.6	67.6	76.2	76.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	258	557	1,199	2,583
CNEL:	278	599	1,291	2,782

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: I-405 NB Off-Ramp and I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 59,832 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,936 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.73	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-13.50	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-17.46	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	74.8	73.8	72.0	66.0	74.6	75.2	
Medium Trucks:	68.1	67.4	61.0	59.5	68.0	68.2	
Heavy Trucks:	67.8	67.2	58.1	59.4	67.7	67.9	
Vehicle Noise:	76.3	75.4	72.5	67.6	76.1	76.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	256	551	1,187	2,558
CNEL:	276	594	1,279	2,755

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Jamboree Road to Fairchild Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,795 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,283 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.03	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.98	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	64.9	58.9	67.5	68.1
Medium Trucks:	61.5	60.9	54.5	53.0	61.4	61.6
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	69.6	68.7	65.6	60.9	69.4	69.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	357	768
CNEL:	82	178	382	824

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Fairchild Road to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,349 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,246 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.16	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.08	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.03	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.7	64.9	58.8	67.5	68.1
Medium Trucks:	61.5	60.8	54.4	52.9	61.4	61.6
Heavy Trucks:	62.3	61.7	52.7	54.0	62.3	62.4
Vehicle Noise:	69.6	68.7	65.5	60.8	69.4	69.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	164	354	762
CNEL:	82	176	380	818

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Fitch to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 42,207 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,482 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.47	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.77	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.73	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.4	65.6	59.6	68.2	68.8
Medium Trucks:	62.2	61.5	55.2	53.6	62.1	62.3
Heavy Trucks:	63.0	62.5	53.4	54.7	63.0	63.1
Vehicle Noise:	70.3	69.4	66.2	61.5	70.1	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	175	376	810
CNEL:	87	187	403	869

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Michelson Drive to Douglas

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,005 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,713 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.75	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-13.49	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-17.45	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.0	67.3	61.2	69.8	70.4
Medium Trucks:	63.9	63.2	56.8	55.3	63.7	64.0
Heavy Trucks:	64.7	64.1	55.1	56.3	64.7	64.8
Vehicle Noise:	71.9	71.0	67.9	63.2	71.7	72.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	131	281	606	1,306
CNEL:	140	302	650	1,401

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Douglas to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,388 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,662 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.69	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-13.55	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-17.51	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.0	69.0	67.2	61.2	69.8	70.4	
Medium Trucks:	63.8	63.1	56.8	55.2	63.7	63.9	
Heavy Trucks:	64.6	64.0	55.0	56.3	64.6	64.7	
Vehicle Noise:	71.9	71.0	67.8	63.1	71.7	72.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	129	279	601	1,294
CNEL:	139	299	644	1,388



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Skypark to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,157 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,735 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.42	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.82	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.77	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.3	64.6	58.5	67.1	67.7
Medium Trucks:	61.1	60.5	54.1	52.6	61.0	61.3
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	69.2	68.3	65.2	60.5	69.0	69.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	149	320	690
CNEL:	74	159	343	740

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Redhill Avenue to Skypark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,891 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,301 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.57	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.53	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	65.2	63.4	57.3	66.0	66.6
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1
Heavy Trucks:	60.8	60.2	51.2	52.5	60.8	60.9
Vehicle Noise:	68.1	67.2	64.0	59.3	67.9	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	281	606
CNEL:	65	140	302	650

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Birch Street to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,778 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,714 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.39	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.85	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.80	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.0	63.9	62.1	56.1	64.7	65.3	
Medium Trucks:	58.7	58.0	51.7	50.1	58.6	58.8	
Heavy Trucks:	59.6	59.0	49.9	51.2	59.5	59.7	
Vehicle Noise:	66.8	65.9	62.7	58.1	66.6	67.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	107	231	498
CNEL:	53	115	248	534

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Campus Drive to Birch Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,178 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,912 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.86	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-16.37	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-20.33	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.2	64.4	58.3	67.0	67.6
Medium Trucks:	61.0	60.3	53.9	52.4	60.9	61.1
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	69.0	68.1	65.0	60.3	68.9	69.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	389	839
CNEL:	90	194	418	900

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Main Street  
 Road Segment: Gillette Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,614 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,763 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.80	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.43	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.39	-2.29	-1.20	-5.23	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.8	67.7	65.9	59.9	68.5	69.1	
Medium Trucks:	62.5	61.9	55.5	54.0	62.4	62.6	
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5	
Vehicle Noise:	70.6	69.7	66.6	61.9	70.4	70.9	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	184	396	853
CNEL:	92	197	425	915

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Main Street  
 Road Segment: MacArthur Boulevard to Mercantile

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,827 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,286 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.22	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.02	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.98	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.1	65.4	59.3	67.9	68.5
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.1
Heavy Trucks:	62.8	62.2	53.2	54.4	62.8	62.9
Vehicle Noise:	70.0	69.1	66.0	61.3	69.8	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	168	362	780
CNEL:	84	180	388	836

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Main Street  
 Road Segment: Executive Park to MacArthur Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,554 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,356 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.77	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.47	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.42	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.3	63.5	57.4	66.1	66.7
Medium Trucks:	60.1	59.4	53.1	51.5	60.0	60.2
Heavy Trucks:	60.9	60.3	51.3	52.6	60.9	61.0
Vehicle Noise:	68.2	67.3	64.1	59.4	68.0	68.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	286	616
CNEL:	66	142	307	660

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Main Street  
 Road Segment: Von Karman Avenue to Cartwright

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,744 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,371 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.80	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.44	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.40	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.4	65.3	63.5	57.5	66.1	66.7	
Medium Trucks:	60.1	59.4	53.1	51.5	60.0	60.2	
Heavy Trucks:	61.0	60.4	51.3	52.6	60.9	61.1	
Vehicle Noise:	68.2	67.3	64.1	59.5	68.0	68.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	287	618
CNEL:	66	143	308	663



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Main Street  
 Road Segment: McDermott to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,403 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,178 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.43	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.81	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.76	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.2	57.1	65.7	66.3
Medium Trucks:	59.7	59.1	52.7	51.2	59.6	59.9
Heavy Trucks:	60.6	60.0	51.0	52.2	60.6	60.7
Vehicle Noise:	67.8	66.9	63.8	59.1	67.6	68.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	126	271	584
CNEL:	63	135	291	627

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Main Street  
 Road Segment: Red Hill Avenue to Executive Circle

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,874 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,135 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.34	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.90	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.85	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.9	64.8	63.1	57.0	65.6	66.2	
Medium Trucks:	59.7	59.0	52.6	51.1	59.5	59.8	
Heavy Trucks:	60.5	59.9	50.9	52.1	60.5	60.6	
Vehicle Noise:	67.7	66.8	63.7	59.0	67.5	68.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	124	268	576
CNEL:	62	133	287	618

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Main Street  
 Road Segment: Jamboree Road to Union

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,963 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,059 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.19	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.05	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.01	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.7	62.9	56.9	65.5	66.1
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6
Heavy Trucks:	60.3	59.8	50.7	52.0	60.3	60.5
Vehicle Noise:	67.6	66.7	63.5	58.8	67.4	67.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	121	261	563
CNEL:	60	130	280	604

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Main Street  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,634 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,207 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.13	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.37	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.33	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.1	64.0	62.3	56.2	64.8	65.4	
Medium Trucks:	58.8	58.2	51.8	50.3	58.7	59.0	
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8	
Vehicle Noise:	66.9	66.0	62.9	58.2	66.7	67.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	175	378
CNEL:	41	87	188	405

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Main Street  
 Road Segment: Siglo to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,271 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,002 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.06	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.17	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.13	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.6	62.8	56.7	65.4	66.0
Medium Trucks:	59.4	58.7	52.3	50.8	59.3	59.5
Heavy Trucks:	60.2	59.6	50.6	51.9	60.2	60.3
Vehicle Noise:	67.5	66.6	63.4	58.7	67.3	67.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	119	256	552
CNEL:	59	128	275	593

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Main Street  
 Road Segment: Veneto to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,292 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,922 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.89	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.35	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.31	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.4	64.4	62.6	56.6	65.2	65.8
Medium Trucks:	59.2	58.5	52.2	50.6	59.1	59.3
Heavy Trucks:	60.0	59.5	50.4	51.7	60.0	60.2
Vehicle Noise:	67.3	66.4	63.2	58.5	67.1	67.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	249	537
CNEL:	58	124	268	577

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Main Street  
 Road Segment: Paseo Westpark to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,007 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 991 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.99	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.19	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.2	61.4	55.3	64.0	64.6
Medium Trucks:	58.0	57.3	50.9	49.4	57.9	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.1	65.2	62.0	57.3	65.9	66.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	154	331
CNEL:	36	77	165	355

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Main Street  
 Road Segment: Harvard Avenue to San Mateo

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,948 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 986 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.25	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.21	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.1	61.4	55.3	63.9	64.5
Medium Trucks:	58.0	57.3	50.9	49.4	57.8	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.0	65.1	62.0	57.3	65.8	66.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	330
CNEL:	35	76	164	354



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Marine Way  
 Road Segment: Sand Canyon Avenue to Ridge Valley (O Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,895 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,374 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 42.814				
Road Grade: 0.0%	Medium Trucks: 42.720				
Left View: -90.0 degrees	Heavy Trucks: 42.814				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.84	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	77.72	-13.40	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	82.99	-17.35	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.0	67.2	61.2	69.8	70.4
Medium Trucks:	64.0	63.4	57.0	55.5	63.9	64.2
Heavy Trucks:	65.3	64.8	55.7	57.0	65.3	65.5
Vehicle Noise:	72.1	71.2	67.9	63.3	71.9	72.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	310	668
CNEL:	71	154	332	715

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Marine Way  
 Road Segment: Alton Parkway to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,007 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,723 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.91	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-14.33	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-18.28	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.1	64.3	58.3	66.9	67.5
Medium Trucks:	61.1	60.5	54.1	52.6	61.0	61.3
Heavy Trucks:	62.5	61.9	52.8	54.1	62.4	62.6
Vehicle Noise:	69.2	68.3	65.0	60.5	69.0	69.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	115	249	536
CNEL:	57	124	266	574

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Marine Way  
 Road Segment: Lynx to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,066 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,645 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.79	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-14.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-18.41	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.0	64.2	58.2	66.8	67.4
Medium Trucks:	61.0	60.4	54.0	52.4	60.9	61.1
Heavy Trucks:	62.3	61.8	52.7	54.0	62.3	62.4
Vehicle Noise:	69.1	68.2	64.9	60.3	68.9	69.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	113	244	526
CNEL:	56	121	261	563

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Marine Way  
 Road Segment: County Access to Treble

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,373 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,176 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.94	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.30	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.26	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	65.1	63.4	57.3	65.9	66.5
Medium Trucks:	60.2	59.5	53.1	51.6	60.1	60.3
Heavy Trucks:	61.5	60.9	51.9	53.1	61.5	61.6
Vehicle Noise:	68.2	67.3	64.0	59.5	68.0	68.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	99	214	461
CNEL:	49	106	229	494

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Marine Way  
 Road Segment: Ridge Valley (O Street) to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,442 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,099 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.78	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.46	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.41	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	65.0	63.2	57.2	65.8	66.4
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1
Heavy Trucks:	61.3	60.7	51.7	53.0	61.3	61.4
Vehicle Noise:	68.1	67.2	63.9	59.3	67.9	68.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	97	209	451
CNEL:	48	104	224	482

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Marine Way  
 Road Segment: Skyhawk to County Access

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,450 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,687 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.83	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.41	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.36	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.0	62.3	56.2	64.8	65.4
Medium Trucks:	59.1	58.4	52.0	50.5	59.0	59.2
Heavy Trucks:	60.4	59.8	50.8	52.0	60.4	60.5
Vehicle Noise:	67.1	66.2	62.9	58.4	66.9	67.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	181	389
CNEL:	42	90	194	417

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Marine Way  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,902 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,477 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.94	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.5	63.5	61.7	55.6	64.3	64.9	
Medium Trucks:	58.5	57.8	51.5	49.9	58.4	58.6	
Heavy Trucks:	59.8	59.2	50.2	51.4	59.8	59.9	
Vehicle Noise:	66.5	65.6	62.4	57.8	66.3	66.8	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	165	356
CNEL:	38	82	177	382

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Marine Way  
 Road Segment: Treble to Lynx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 16,855 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,391 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.25	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.20	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.2	61.4	55.4	64.0	64.6
Medium Trucks:	58.2	57.6	51.2	49.7	58.1	58.3
Heavy Trucks:	59.5	59.0	49.9	51.2	59.5	59.7
Vehicle Noise:	66.3	65.4	62.1	57.5	66.1	66.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	342
CNEL:	37	79	170	367



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: McGaw Avenue  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,522 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,198 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-0.07	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-17.31	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-21.27	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.0	60.9	59.2	53.1	61.7	62.3	
Medium Trucks:	56.2	55.5	49.2	47.6	56.1	56.3	
Heavy Trucks:	58.1	57.5	48.4	49.7	58.0	58.2	
Vehicle Noise:	64.2	63.3	59.9	55.5	64.0	64.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	116	250
CNEL:	27	58	124	267

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: McGaw Avenue  
 Road Segment: Red Hill Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,147 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,167 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-0.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-17.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-21.38	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.9	60.8	59.0	53.0	61.6	62.2	
Medium Trucks:	56.1	55.4	49.1	47.5	56.0	56.2	
Heavy Trucks:	57.9	57.4	48.3	49.6	57.9	58.0	
Vehicle Noise:	64.1	63.2	59.8	55.4	63.9	64.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	53	114	246
CNEL:	26	57	122	262

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: McGaw Avenue  
 Road Segment: Daimler to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,147 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	755 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-2.08	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-19.32	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-23.28	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.0	58.9	57.1	51.1	59.7	60.3
Medium Trucks:	54.2	53.5	47.2	45.6	54.1	54.3
Heavy Trucks:	56.0	55.5	46.4	47.7	56.0	56.2
Vehicle Noise:	62.2	61.3	57.9	53.5	62.0	62.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	40	85	184
CNEL:	20	42	91	196

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: McGaw Avenue  
 Road Segment: Jamboree Road to Murphy Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,734 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	391 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-4.94	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-22.18	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-26.14	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.1	56.1	54.3	48.2	56.9	57.5
Medium Trucks:	51.3	50.7	44.3	42.8	51.2	51.4
Heavy Trucks:	53.2	52.6	43.6	44.8	53.2	53.3
Vehicle Noise:	59.3	58.5	55.0	50.6	59.2	59.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	25	55	118
CNEL:	13	27	59	126

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Meadowood  
 Road Segment: Culver Drive to Canyonwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,920 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 901 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 25 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	0.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-17.09	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-21.05	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.6	55.6	53.8	47.8	56.4	57.0
Medium Trucks:	51.5	50.8	44.4	42.9	51.3	51.6
Heavy Trucks:	54.7	54.1	45.1	46.3	54.7	54.8
Vehicle Noise:	59.5	58.7	54.8	50.9	59.4	59.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	26	57	122
CNEL:	13	28	60	130

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Meridian  
 Road Segment: Spectrum to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,707 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 223 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-6.70	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-23.94	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-27.90	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.8	51.7	50.0	43.9	52.5	53.1
Medium Trucks:	47.3	46.6	40.3	38.7	47.2	47.4
Heavy Trucks:	49.8	49.2	40.2	41.4	49.8	49.9
Vehicle Noise:	55.3	54.4	50.8	46.6	55.1	55.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	14	30	64
CNEL:	7	15	32	68

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Meridian  
 Road Segment: Alton Parkway to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,238 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	185 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-7.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-24.76	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-28.72	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.0	50.9	49.1	43.1	51.7	52.3
Medium Trucks:	46.5	45.8	39.4	37.9	46.4	46.6
Heavy Trucks:	49.0	48.4	39.3	40.6	48.9	49.1
Vehicle Noise:	54.5	53.6	50.0	45.8	54.3	54.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	12	26	56
CNEL:	6	13	28	60

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Merit  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,718 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	307 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-4.53	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-21.77	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-25.72	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.8	53.8	52.0	46.0	54.6	55.2
Medium Trucks:	49.7	49.0	42.6	41.1	49.6	49.8
Heavy Trucks:	52.9	52.3	43.3	44.5	52.9	53.0
Vehicle Noise:	57.7	56.9	53.0	49.1	57.6	58.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	12	26	56
CNEL:	6	13	27	59



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Michelson Drive  
 Road Segment: Riparian to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,332 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,090 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.76	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.43	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.0	65.0	63.2	57.1	65.8	66.4	
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1	
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4	
Vehicle Noise:	68.0	67.1	63.9	59.3	67.8	68.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	97	209	449
CNEL:	48	104	223	481

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Michelson Drive  
 Road Segment: Almond Tree Lane to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,108 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 834 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 37.138				
Road Grade: 0.0%		Medium Trucks: 37.030				
Left View: -90.0 degrees		Heavy Trucks: 37.139				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.23	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-19.47	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-23.42	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	63.9	62.1	56.0	64.7	65.3
Medium Trucks:	58.9	58.2	51.9	50.3	58.8	59.0
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3
Vehicle Noise:	66.9	66.0	62.8	58.2	66.7	67.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	49	106	227
CNEL:	24	52	113	243

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Michelson Drive  
 Road Segment: Von Karman Avenue to Obsidian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,512 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,022 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.62	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.62	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.58	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.8	63.1	57.0	65.6	66.2
Medium Trucks:	59.9	59.2	52.8	51.3	59.7	60.0
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	67.9	67.0	63.7	59.2	67.7	68.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	95	204	439
CNEL:	47	101	218	471

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Michelson Drive  
 Road Segment: Parkside to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,469 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,854 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.00	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.95	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.5	64.4	62.7	56.6	65.2	65.8
Medium Trucks:	59.5	58.8	52.4	50.9	59.4	59.6
Heavy Trucks:	60.8	60.2	51.2	52.4	60.8	60.9
Vehicle Noise:	67.5	66.6	63.3	58.8	67.3	67.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	89	192	415
CNEL:	44	96	206	444

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Michelson Drive  
 Road Segment: Gillman to Seton/Sandburg Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,393 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 775 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.55	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-19.79	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-23.74	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.6	63.5	61.8	55.7	64.3	64.9	
Medium Trucks:	58.6	57.9	51.5	50.0	58.5	58.7	
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0	
Vehicle Noise:	66.6	65.7	62.4	57.9	66.4	66.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	100	217
CNEL:	23	50	108	232

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Michelson Drive  
 Road Segment: Carlson to Prince

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,299 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,252 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 75.0 feet Centerline Dist. to Observer: 75.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 70.413 Medium Trucks: 70.356 Heavy Trucks: 70.413																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.09	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	77.72	-15.15	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	82.99	-19.11	-2.33	-1.20	-5.25	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.0	62.2	56.2	64.8	65.4
Medium Trucks:	59.0	58.4	52.0	50.5	58.9	59.1
Heavy Trucks:	60.4	59.8	50.7	52.0	60.3	60.5
Vehicle Noise:	67.1	66.2	62.9	58.3	66.9	67.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	100	216	465
CNEL:	50	107	231	498

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Michelson Drive  
 Road Segment: MacArthur Boulevard to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,065 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,738 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.96	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.28	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.23	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.2	62.4	56.3	65.0	65.6
Medium Trucks:	59.2	58.5	52.2	50.6	59.1	59.3
Heavy Trucks:	60.5	59.9	50.9	52.1	60.5	60.6
Vehicle Noise:	67.2	66.3	63.1	58.5	67.0	67.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	86	184	397
CNEL:	43	92	197	425

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Michelson Drive  
 Road Segment: Harvard Avenue to Parkside

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,016 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,486 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.96	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.91	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.5	63.5	61.7	55.7	64.3	64.9
Medium Trucks:	58.5	57.8	51.5	49.9	58.4	58.6
Heavy Trucks:	59.8	59.2	50.2	51.5	59.8	59.9
Vehicle Noise:	66.6	65.7	62.4	57.8	66.4	66.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	166	358
CNEL:	38	83	178	383



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Michelson Drive  
 Road Segment: Bixby to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,167 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,499 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.92	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.88	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.5	61.8	55.7	64.3	64.9
Medium Trucks:	58.6	57.9	51.5	50.0	58.4	58.7
Heavy Trucks:	59.9	59.3	50.2	51.5	59.9	60.0
Vehicle Noise:	66.6	65.7	62.4	57.9	66.4	66.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	167	360
CNEL:	39	83	179	385

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Michelson Drive  
 Road Segment: Jamboree Road to Carlson

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,554 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,108 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.80	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.44	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.39	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.3	64.5	58.5	67.1	67.7
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	62.7	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	69.4	68.5	65.2	60.7	69.2	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	246	530
CNEL:	57	122	263	567

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Michelson Drive  
 Road Segment: Teller to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,444 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,099 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.78	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.46	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.41	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.3	64.5	58.5	67.1	67.7
Medium Trucks:	61.3	60.7	54.3	52.7	61.2	61.4
Heavy Trucks:	62.6	62.0	53.0	54.3	62.6	62.7
Vehicle Noise:	69.4	68.5	65.2	60.6	69.2	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	245	528
CNEL:	57	122	262	565

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Michelson Drive  
 Road Segment: Jordan East to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,980 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 576 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 29.547 Medium Trucks: 29.411 Heavy Trucks: 29.547																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.84	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	77.72	-21.07	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	82.99	-25.03	3.32	-1.20	-5.77	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.8	63.7	62.0	55.9	64.5	65.1	
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9	
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2	
Vehicle Noise:	66.8	65.9	62.6	58.1	66.6	67.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	38	83	179
CNEL:	19	41	89	191

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Michelson Drive  
 Road Segment: Culver Drive to Angell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,905 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 735 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 16 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 39.306 Medium Trucks: 39.205 Heavy Trucks: 39.307																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.78	1.46	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-20.02	1.48	-1.20	-5.08	0.000	0.000
Heavy Trucks:	82.99	-23.97	1.46	-1.20	-5.56	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.0	62.9	61.2	55.1	63.7	64.3
Medium Trucks:	58.0	57.3	50.9	49.4	57.9	58.1
Heavy Trucks:	59.3	58.7	49.7	50.9	59.3	59.4
Vehicle Noise:	66.0	65.1	61.8	57.3	65.8	66.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	45	98	211
CNEL:	23	49	105	225

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Modjeska (A Street)  
 Road Segment: Portola Springs to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,698 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,130 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 24 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 27.659 Medium Trucks: 27.514 Heavy Trucks: 27.659																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.42	3.75	-1.20	-4.81	0.000	0.000
Medium Trucks:	79.45	-18.66	3.79	-1.20	-5.14	0.000	0.000
Heavy Trucks:	84.25	-22.61	3.75	-1.20	-5.77	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.6	68.5	66.8	60.7	69.3	69.9	
Medium Trucks:	63.4	62.7	56.3	54.8	63.3	63.5	
Heavy Trucks:	64.2	63.6	54.6	55.8	64.2	64.3	
Vehicle Noise:	71.4	70.5	67.4	62.7	71.2	71.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	168	363
CNEL:	39	84	181	389

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Modjeska (A Street)  
 Road Segment: South of Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,855 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 153 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-10.10	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-27.34	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-31.30	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.0	57.9	56.2	50.1	58.7	59.3
Medium Trucks:	52.8	52.1	45.7	44.2	52.6	52.9
Heavy Trucks:	53.6	53.0	44.0	45.2	53.6	53.7
Vehicle Noise:	60.8	59.9	56.8	52.1	60.6	61.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	41	89
CNEL:	10	21	44	96

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Muirlands Boulevard  
 Road Segment: Bake Parkway to City Limits

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,718 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,214 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.30	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.0	62.3	56.2	64.8	65.4
Medium Trucks:	58.9	58.2	51.8	50.3	58.7	59.0
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8
Vehicle Noise:	66.9	66.0	62.9	58.2	66.7	67.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	176	379
CNEL:	41	88	189	407



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Muirlands Boulevard  
 Road Segment: Alton Parkway to Sterling

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,970 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 988 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.20	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.2	63.1	61.4	55.3	63.9	64.6	
Medium Trucks:	58.0	57.3	50.9	49.4	57.8	58.1	
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9	
Vehicle Noise:	66.0	65.1	62.0	57.3	65.9	66.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	331
CNEL:	35	76	165	355

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Muirlands Boulevard  
 Road Segment: Wrigley to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,970 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 988 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.20	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.1	61.4	55.3	63.9	64.6
Medium Trucks:	58.0	57.3	50.9	49.4	57.8	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.0	65.1	62.0	57.3	65.9	66.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	331
CNEL:	35	76	165	355

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Newport Coast Drive  
 Road Segment: SR-73 NB Off-Ramp to Turtle Ridge

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,293 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,427 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.09	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.3	61.5	55.5	64.1	64.7
Medium Trucks:	58.3	57.7	51.3	49.8	58.2	58.5
Heavy Trucks:	59.7	59.1	50.0	51.3	59.6	59.8
Vehicle Noise:	66.4	65.5	62.2	57.7	66.2	66.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	75	162	348
CNEL:	37	80	173	373

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Newport Coast Drive  
 Road Segment: Turtle Crest to Bonita Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,138 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,001 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.43	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.67	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.63	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.8	61.8	60.0	53.9	62.6	63.2	
Medium Trucks:	56.8	56.1	49.8	48.2	56.7	56.9	
Heavy Trucks:	58.1	57.5	48.5	49.7	58.1	58.2	
Vehicle Noise:	64.8	63.9	60.7	56.1	64.7	65.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	59	128	275
CNEL:	29	63	137	295

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Nightmist  
 Road Segment: Sand Canyon Avenue to Tulip (Road C)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,314 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 933 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.73	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.68	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	59.0	58.0	56.2	50.1	58.8	59.4	
Medium Trucks:	53.5	52.8	46.5	44.9	53.4	53.6	
Heavy Trucks:	56.0	55.4	46.4	47.6	56.0	56.1	
Vehicle Noise:	61.5	60.7	57.0	52.8	61.4	61.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	36	77	166
CNEL:	18	38	82	177

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Northwood  
 Road Segment: Yale Avenue to Savannah

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,780 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	394 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-4.90	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-22.14	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-26.10	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.0	59.0	57.2	51.2	59.8	60.4
Medium Trucks:	54.3	53.6	47.2	45.7	54.1	54.4
Heavy Trucks:	56.1	55.5	46.5	47.7	56.1	56.2
Vehicle Noise:	62.3	61.4	57.9	53.6	62.1	62.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	111
CNEL:	12	26	55	119

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Northwood  
 Road Segment: Goldrush to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,802 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	314 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.90	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-23.13	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-27.09	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.0	58.0	56.2	50.2	58.8	59.4
Medium Trucks:	53.3	52.6	46.2	44.7	53.2	53.4
Heavy Trucks:	55.1	54.5	45.5	46.7	55.1	55.2
Vehicle Noise:	61.3	60.4	56.9	52.6	61.1	61.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	10	21	44	95
CNEL:	10	22	47	102

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Oak Canyon Drive  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,369 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,103 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.53	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-18.76	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-22.72	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.6	66.5	64.7	58.7	67.3	67.9	
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5	
Heavy Trucks:	62.2	61.6	52.5	53.8	62.1	62.3	
Vehicle Noise:	69.4	68.5	65.3	60.7	69.2	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	72	154	332
CNEL:	36	77	165	357



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Pacifica  
 Road Segment: Gateway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,617 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,041 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.46	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.0	61.9	60.2	54.1	62.7	63.3	
Medium Trucks:	57.0	56.3	49.9	48.4	56.9	57.1	
Heavy Trucks:	58.3	57.7	48.7	49.9	58.3	58.4	
Vehicle Noise:	65.0	64.1	60.8	56.3	64.8	65.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	131	282
CNEL:	30	65	140	302

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Pacifica  
 Road Segment: Alton Parkway to Gateway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,580 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 790 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.46	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.70	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.66	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.8	60.7	59.0	52.9	61.5	62.1	
Medium Trucks:	55.8	55.1	48.7	47.2	55.7	55.9	
Heavy Trucks:	57.1	56.5	47.5	48.7	57.1	57.2	
Vehicle Noise:	63.8	62.9	59.6	55.1	63.6	64.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	51	109	235
CNEL:	25	54	117	252

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative Project Name: Irvine GP  
 Road Name: Pacifica Job Number: 15937  
 Road Segment: Irvine Center Drive to Fortune Drive (Spectrum Center Drive)

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,909 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 570 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.88	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.12	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.08	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.4	59.3	57.6	51.5	60.1	60.7
Medium Trucks:	54.4	53.7	47.3	45.8	54.2	54.5
Heavy Trucks:	55.7	55.1	46.1	47.3	55.7	55.8
Vehicle Noise:	62.4	61.5	58.2	53.7	62.2	62.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	41	88	189
CNEL:	20	44	94	202

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Pacifica  
 Road Segment: Meridian to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,572 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	377 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.67	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-22.91	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-26.87	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.6	57.5	55.8	49.7	58.3	58.9
Medium Trucks:	52.6	51.9	45.5	44.0	52.4	52.7
Heavy Trucks:	53.9	53.3	44.3	45.5	53.9	54.0
Vehicle Noise:	60.6	59.7	56.4	51.9	60.4	60.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	31	67	143
CNEL:	15	33	71	154

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Park Place  
 Road Segment: Christamon South to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,747 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 309 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-5.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-22.53	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-26.48	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	54.2	53.2	51.4	45.3	54.0	54.6	
Medium Trucks:	48.7	48.0	41.7	40.1	48.6	48.8	
Heavy Trucks:	51.2	50.6	41.6	42.8	51.2	51.3	
Vehicle Noise:	56.7	55.9	52.2	48.0	56.6	57.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	79
CNEL:	8	18	39	84

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative Project Name: Irvine GP  
 Road Name: Portola Parkway Job Number: 15937  
 Road Segment: Bee Canyon Access Road to Sand Canyon Avenue

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,951 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,058 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos:	77.5%	12.9%	9.6%	97.42%
	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
	<b>Noise Source Elevations (in feet)</b>				
	Autos:	2.000			
	Medium Trucks:	4.000			
	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos:	57.786			
	Medium Trucks:	57.717			
	Heavy Trucks:	57.787			

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.31	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.93	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.88	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.8	68.8	67.0	61.0	69.6	70.2	
Medium Trucks:	63.2	62.6	56.2	54.7	63.1	63.4	
Heavy Trucks:	63.3	62.7	53.6	54.9	63.3	63.4	
Vehicle Noise:	71.4	70.5	67.5	62.7	71.2	71.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	350	754
CNEL:	81	175	377	811

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Portola Parkway  
 Road Segment: Jeffrey Road to Bee Canyon Access Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,889 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,053 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.30	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.94	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.89	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.8	67.0	61.0	69.6	70.2
Medium Trucks:	63.2	62.6	56.2	54.7	63.1	63.3
Heavy Trucks:	63.3	62.7	53.6	54.9	63.2	63.4
Vehicle Noise:	71.4	70.5	67.5	62.7	71.2	71.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	349	753
CNEL:	81	175	376	810

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Portola Parkway  
 Road Segment: Arrowhead to Ridge Valley Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,410 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,931 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.04	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.20	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.16	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.6	68.5	66.7	60.7	69.3	69.9	
Medium Trucks:	63.0	62.3	55.9	54.4	62.8	63.1	
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1	
Vehicle Noise:	71.1	70.2	67.3	62.4	70.9	71.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	72	156	336	723
CNEL:	78	168	361	778



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Portola Parkway  
 Road Segment: Sand Canyon Avenue to Arrowhead

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,503 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,774 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.33	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.57	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.53	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.2	68.1	66.4	60.3	68.9	69.5	
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7	
Heavy Trucks:	62.6	62.0	53.0	54.3	62.6	62.7	
Vehicle Noise:	70.8	69.9	66.9	62.0	70.6	71.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	147	317	683
CNEL:	73	158	341	735

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Portola Parkway  
 Road Segment: Portola Springs to SR-241 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,090 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,410 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.33	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.57	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.52	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.1	65.4	59.3	67.9	68.5
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7
Heavy Trucks:	61.6	61.0	52.0	53.3	61.6	61.7
Vehicle Noise:	69.8	68.9	65.9	61.0	69.6	70.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	126	272	586
CNEL:	63	136	293	630

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Portola Parkway  
 Road Segment: Gatepark to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,312 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,418 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.01	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.23	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.18	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.8	66.1	60.0	68.6	69.2
Medium Trucks:	62.3	61.6	55.3	53.7	62.2	62.4
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.5	69.5	66.6	61.7	70.3	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	189	407	876
CNEL:	94	203	437	942

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Portola Parkway  
 Road Segment: ETC-6 (SR-261) NB Off-Ramp to Gatepark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,911 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,385 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.95	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.29	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.24	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.8	67.8	66.0	60.0	68.6	69.2	
Medium Trucks:	62.2	61.6	55.2	53.6	62.1	62.3	
Heavy Trucks:	62.3	61.7	52.6	53.9	62.2	62.4	
Vehicle Noise:	70.4	69.5	66.5	61.7	70.2	70.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	187	403	868
CNEL:	93	201	433	934

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Portola Parkway  
 Road Segment: SR-261 SB Off-Ramp to SR-261 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,023 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,312 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.82	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.42	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.38	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.9	59.8	68.4	69.0	
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2	
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2	
Vehicle Noise:	70.3	69.4	66.4	61.5	70.1	70.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	183	395	850
CNEL:	91	197	424	914

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Portola Parkway  
 Road Segment: Jamboree Road to Bellevue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,703 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,286 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.77	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.47	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.43	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.0	61.4	55.0	53.5	61.9	62.2
Heavy Trucks:	62.1	61.5	52.4	53.7	62.1	62.2
Vehicle Noise:	70.2	69.3	66.3	61.5	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	182	392	843
CNEL:	91	195	421	907

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Portola Parkway  
 Road Segment: Bellevue to ETC-6 (SR-261) SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,438 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,264 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.73	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.51	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.47	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	69.0
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.0	61.4	52.4	53.7	62.0	62.1
Vehicle Noise:	70.2	69.3	66.3	61.4	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	389	838
CNEL:	90	194	418	902

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Portola Parkway  
 Road Segment: Yale Avenue to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,088 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,152 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.51	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.73	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.69	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.3	65.6	59.5	68.1	68.7	
Medium Trucks:	61.8	61.1	54.7	53.2	61.7	61.9	
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9	
Vehicle Noise:	70.0	69.0	66.1	61.2	69.8	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	175	376	810
CNEL:	87	188	405	872



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Portola Parkway  
 Road Segment: Culver Drive to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,869 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,887 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.07	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.30	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.26	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	66.8	65.0	58.9	67.6	68.2	
Medium Trucks:	61.2	60.5	54.2	52.6	61.1	61.3	
Heavy Trucks:	61.2	60.7	51.6	52.9	61.2	61.3	
Vehicle Noise:	69.4	68.5	65.5	60.6	69.2	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	345	742
CNEL:	80	172	371	799

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Portola Parkway  
 Road Segment: Silverado to Portola Springs

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,134 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,001 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.82	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-20.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-24.01	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.8	66.5	67.1
Medium Trucks:	60.1	59.4	53.1	51.5	60.0	60.2
Heavy Trucks:	60.1	59.6	50.5	51.8	60.1	60.2
Vehicle Noise:	68.3	67.4	64.4	59.5	68.1	68.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	100	216	466
CNEL:	50	108	233	502

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Pusan  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,468 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	204 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-6.31	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-23.55	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-27.51	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.1	52.0	50.2	44.2	52.8	53.4
Medium Trucks:	47.9	47.2	40.9	39.3	47.8	48.0
Heavy Trucks:	51.1	50.5	41.5	42.7	51.1	51.2
Vehicle Noise:	55.9	55.1	51.2	47.3	55.8	56.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	20	42
CNEL:	4	10	21	45

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Quail Hill Parkway  
 Road Segment: Shady Canyon Drive to Passage

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,648 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,291 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.84	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.08	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.04	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.4	64.3	62.5	56.5	65.1	65.7
Medium Trucks:	59.1	58.5	52.1	50.6	59.0	59.2
Heavy Trucks:	60.0	59.4	50.3	51.6	60.0	60.1
Vehicle Noise:	67.2	66.3	63.2	58.5	67.0	67.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	85	183	395
CNEL:	42	91	197	424

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Quail Hill Parkway  
 Road Segment: East Knollcrest to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,734 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 803 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.90	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.14	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.10	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.3	62.2	60.5	54.4	63.0	63.7	
Medium Trucks:	57.1	56.4	50.0	48.5	57.0	57.2	
Heavy Trucks:	57.9	57.3	48.3	49.5	57.9	58.0	
Vehicle Noise:	65.1	64.2	61.1	56.4	65.0	65.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	62	134	288
CNEL:	31	67	143	309

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative Project Name: Irvine GP  
 Road Name: Quassar Drive (Spectrum) Job Number: 15937  
 Road Segment: Irvine Center Drive to Spectrum Center Drive (Fortune)

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,026 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 167 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 16 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 39.306 Medium Trucks: 39.205 Heavy Trucks: 39.307																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-7.17	1.46	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-24.40	1.48	-1.20	-5.08	0.000	0.000
Heavy Trucks:	77.97	-28.36	1.46	-1.20	-5.56	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	51.8	50.8	49.0	42.9	51.6	52.2
Medium Trucks:	46.7	46.0	39.6	38.1	46.6	46.8
Heavy Trucks:	49.9	49.3	40.3	41.5	49.9	50.0
Vehicle Noise:	54.7	53.9	50.0	46.1	54.6	54.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	8	17	37
CNEL:	4	9	18	40

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Red Hill Avenue  
 Road Segment: MacArthur Boulevard to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,982 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,711 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.29	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.95	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.91	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.8	60.7	69.3	69.9
Medium Trucks:	63.2	62.5	56.1	54.6	63.0	63.3
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7
Vehicle Noise:	71.3	70.4	67.3	62.5	71.1	71.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	99	214	461	993
CNEL:	107	230	495	1,067

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Red Hill Avenue  
 Road Segment: I-405 Over Crossing to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,560 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,861 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.90	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	67.2	65.4	59.4	68.0	68.6	
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9	
Heavy Trucks:	62.2	61.6	52.6	53.9	62.2	62.3	
Vehicle Noise:	69.9	69.0	66.0	61.2	69.7	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	279	601
CNEL:	65	139	300	646



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Red Hill Avenue  
 Road Segment: Alton Parkway to Deere Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,869 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,629 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.79	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.45	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.40	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.3	59.2	67.8	68.4
Medium Trucks:	61.7	61.0	54.6	53.1	61.5	61.8
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	69.8	68.9	65.8	61.0	69.6	70.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	170	366	789
CNEL:	85	183	394	848

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Red Hill Avenue  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,060 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,562 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.68	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.56	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.52	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	66.9	65.2	59.1	67.7	68.3
Medium Trucks:	61.5	60.9	54.5	53.0	61.4	61.7
Heavy Trucks:	62.0	61.4	52.3	53.6	61.9	62.1
Vehicle Noise:	69.7	68.8	65.7	60.9	69.5	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	167	360	776
CNEL:	83	180	387	833

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Red Hill Avenue  
 Road Segment: Deere Avenue to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,932 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,469 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.52	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.72	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.68	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.8	65.0	58.9	67.6	68.2
Medium Trucks:	61.4	60.7	54.4	52.8	61.3	61.5
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	69.5	68.6	65.6	60.8	69.3	69.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	163	351	757
CNEL:	81	175	377	813

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Red Hill Avenue  
 Road Segment: Skypark East to MacArthur Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,918 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,808 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.16	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.07	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.03	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.4	68.4	66.6	60.5	69.2	69.8
Medium Trucks:	63.0	62.3	56.0	54.4	62.9	63.1
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	71.1	70.2	67.2	62.4	70.9	71.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	149	321	691
CNEL:	74	160	345	742

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Red Hill Avenue  
 Road Segment: Main Street to Skypark East

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,979 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,566 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 60.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	47.329			
Road Grade: 0.0%	Medium Trucks:	47.244			
Left View: -90.0 degrees	Heavy Trucks:	47.329			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.46	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.70	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.66	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	66.0	59.9	68.5	69.1
Medium Trucks:	62.4	61.7	55.3	53.8	62.2	62.5
Heavy Trucks:	62.8	62.2	53.2	54.4	62.8	62.9
Vehicle Noise:	70.5	69.6	66.5	61.7	70.3	70.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	135	291	628
CNEL:	67	145	313	674

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Research Drive  
 Road Segment: Hubble to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,625 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,114 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.30	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.94	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.89	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.5	64.7	58.6	67.3	67.9
Medium Trucks:	61.3	60.6	54.2	52.7	61.2	61.4
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	69.3	68.4	65.3	60.6	69.2	69.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	255	549
CNEL:	59	127	273	589

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Research Drive  
 Road Segment: Scientific to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,298 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,262 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.94	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.18	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.13	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.3	64.2	62.4	56.4	65.0	65.6
Medium Trucks:	59.0	58.4	52.0	50.5	58.9	59.1
Heavy Trucks:	59.9	59.3	50.2	51.5	59.9	60.0
Vehicle Noise:	67.1	66.2	63.1	58.4	66.9	67.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	181	389
CNEL:	42	90	194	418

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Research Drive  
 Road Segment: Bake Parkway to Muller

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,951 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,068 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.86	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.5	61.7	55.7	64.3	64.9
Medium Trucks:	58.3	57.6	51.3	49.7	58.2	58.4
Heavy Trucks:	59.1	58.6	49.5	50.8	59.1	59.3
Vehicle Noise:	66.4	65.5	62.3	57.7	66.2	66.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	75	162	348
CNEL:	37	81	173	374



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Research Drive  
 Road Segment: Irvine Center Drive to Bunsen

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	10,459 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	863 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		57.786		
Left View:	-90.0 degrees	Medium Trucks:		57.717		
Right View:	90.0 degrees	Heavy Trucks:		57.787		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.59	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.83	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.79	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.6	62.6	60.8	54.7	63.4	64.0
Medium Trucks:	57.4	56.7	50.3	48.8	57.3	57.5
Heavy Trucks:	58.2	57.6	48.6	49.8	58.2	58.3
Vehicle Noise:	65.5	64.6	61.4	56.7	65.3	65.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	140	302
CNEL:	32	70	150	324

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative	Project Name: Irvine GP
Road Name: Ridge Valley (O Street)	Job Number: 15937
Road Segment: Irvine Boulevard to Trabuco Road (Great Park Boulevard)	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,025 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 1,240 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 45 mph																					
Near/Far Lane Distance: 48 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 62.5 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 62.5 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 57.786																				
Left View: -90.0 degrees	Medium Trucks: 57.717																				
Right View: 90.0 degrees	Heavy Trucks: 57.787																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.21	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.1	62.4	56.3	64.9	65.5
Medium Trucks:	59.0	58.3	51.9	50.4	58.8	59.1
Heavy Trucks:	59.8	59.2	50.2	51.4	59.8	59.9
Vehicle Noise:	67.0	66.1	63.0	58.3	66.8	67.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	83	179	385
CNEL:	41	89	192	413

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Ridge Valley (O Street)  
 Road Segment: Portola Parkway to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,161 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,003 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.94	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.17	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.13	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.3	63.2	61.4	55.4	64.0	64.6	
Medium Trucks:	58.0	57.4	51.0	49.5	57.9	58.2	
Heavy Trucks:	58.9	58.3	49.3	50.5	58.9	59.0	
Vehicle Noise:	66.1	65.2	62.1	57.4	65.9	66.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	72	155	334
CNEL:	36	77	166	358

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative Project Name: Irvine GP  
 Road Name: Ridge Valley (O Street) Job Number: 15937  
 Road Segment: Trabuco Road (Great Park Boulevard) to Marine Way

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,130 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 918 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.52	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.9	62.8	61.1	55.0	63.6	64.2
Medium Trucks:	57.7	57.0	50.6	49.1	57.5	57.8
Heavy Trucks:	58.5	57.9	48.9	50.1	58.5	58.6
Vehicle Noise:	65.7	64.8	61.7	57.0	65.5	66.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	68	146	315
CNEL:	34	73	157	338

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Ridge Valley (O Street)  
 Road Segment: Ranchland to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 930 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 77 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 45 mph																					
Near/Far Lane Distance: 12 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 37.5 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 37.5 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 37.138																				
Left View: -90.0 degrees	Medium Trucks: 37.030																				
Right View: 90.0 degrees	Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-13.10	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-30.34	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-34.29	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.0	54.9	53.2	47.1	55.7	56.3
Medium Trucks:	49.8	49.1	42.7	41.2	49.6	49.9
Heavy Trucks:	50.6	50.0	41.0	42.2	50.6	50.7
Vehicle Noise:	57.8	56.9	53.8	49.1	57.6	58.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	12	26	56
CNEL:	6	13	28	60

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Ridgeline Drive  
 Road Segment: Concordia East to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,232 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,339 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 35 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 40.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 40.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 32.140				
Road Grade: 0.0%		Medium Trucks: 32.016				
Left View: -90.0 degrees		Heavy Trucks: 32.141				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	0.41	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-16.83	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	81.57	-20.79	2.78	-1.20	-5.56	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.2	63.5	57.4	66.0	66.6
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5
Vehicle Noise:	68.5	67.6	64.2	59.8	68.3	68.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	144	310
CNEL:	33	71	154	331

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Ridgeline Drive  
 Road Segment: Turtle Rock Drive to San Simeon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,110 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,247 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 35 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 40.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 40.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 32.140				
Road Grade: 0.0%		Medium Trucks: 32.016				
Left View: -90.0 degrees		Heavy Trucks: 32.141				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	0.10	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-17.14	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	81.57	-21.10	2.78	-1.20	-5.56	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.1	57.1	65.7	66.3
Medium Trucks:	60.2	59.5	53.2	51.6	60.1	60.3
Heavy Trucks:	62.0	61.5	52.4	53.7	62.0	62.2
Vehicle Noise:	68.2	67.3	63.9	59.5	68.0	68.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	137	295
CNEL:	32	68	146	315

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Rockfield Avenue  
 Road Segment: Whatney to McLaren

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,500 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,361 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.61	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.85	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.81	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.5	62.8	56.7	65.3	65.9
Medium Trucks:	59.4	58.7	52.3	50.8	59.2	59.5
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3
Vehicle Noise:	67.4	66.5	63.4	58.7	67.2	67.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	88	190	409
CNEL:	44	95	204	439



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Rockfield Avenue  
 Road Segment: Bake Parkway to Whatney

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,559 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 624 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.20	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.2	61.1	59.4	53.3	62.0	62.6
Medium Trucks:	56.0	55.3	48.9	47.4	55.9	56.1
Heavy Trucks:	56.8	56.2	47.2	48.4	56.8	56.9
Vehicle Noise:	64.0	63.1	60.0	55.3	63.9	64.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	113	243
CNEL:	26	56	121	261

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Rockfield Avenue  
 Road Segment: Thomas to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	5,734 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	473 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-5.20	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-22.44	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-26.40	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.0	59.9	58.2	52.1	60.8	61.4
Medium Trucks:	54.8	54.1	47.7	46.2	54.7	54.9
Heavy Trucks:	55.6	55.0	46.0	47.2	55.6	55.7
Vehicle Noise:	62.8	61.9	58.8	54.1	62.7	63.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	44	94	202
CNEL:	22	47	101	217

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Roosevelt  
 Road Segment: Jeffrey Road to Vision

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,060 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,407 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.04	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.19	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.15	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.3	63.2	61.5	55.4	64.0	64.7	
Medium Trucks:	58.3	57.6	51.2	49.7	58.2	58.4	
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7	
Vehicle Noise:	66.3	65.4	62.1	57.6	66.1	66.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	74	160	345
CNEL:	37	80	172	370

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Roosevelt  
 Road Segment: Yale Avenue to Van Buren

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,191 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 758 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 29.547 Medium Trucks: 29.411 Heavy Trucks: 29.547																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.64	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	77.72	-19.88	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	82.99	-23.84	3.32	-1.20	-5.77	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.0	64.9	63.2	57.1	65.7	66.3	
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1	
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4	
Vehicle Noise:	68.0	67.1	63.8	59.3	67.8	68.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	46	100	215
CNEL:	23	50	107	230

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Roosevelt  
 Road Segment: Vision to Bay Tree

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,183 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,335 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.42	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.38	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.1	63.0	61.3	55.2	63.8	64.4
Medium Trucks:	58.1	57.4	51.0	49.5	57.9	58.2
Heavy Trucks:	59.4	58.8	49.7	51.0	59.4	59.5
Vehicle Noise:	66.1	65.2	61.9	57.4	65.9	66.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	72	155	333
CNEL:	36	77	166	357

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Roosevelt  
 Road Segment: Nimitz to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,507 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,197 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.85	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.6	62.5	60.8	54.7	63.3	63.9	
Medium Trucks:	57.6	56.9	50.5	49.0	57.5	57.7	
Heavy Trucks:	58.9	58.3	49.3	50.5	58.9	59.0	
Vehicle Noise:	65.6	64.7	61.4	56.9	65.4	65.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	144	310
CNEL:	33	71	154	332

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Roosevelt  
 Road Segment: Tulip (Road C) to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,715 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,131 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.90	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.14	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.10	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.4	62.3	60.5	54.5	63.1	63.7
Medium Trucks:	57.3	56.7	50.3	48.8	57.2	57.5
Heavy Trucks:	58.7	58.1	49.0	50.3	58.6	58.8
Vehicle Noise:	65.4	64.5	61.2	56.6	65.2	65.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	139	298
CNEL:	32	69	148	319

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Royal Oak  
 Road Segment: Alton Parkway to Eaglecreek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,830 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 398 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 29.547 Medium Trucks: 29.411 Heavy Trucks: 29.547																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-4.86	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	75.75	-22.09	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	81.57	-26.05	3.32	-1.20	-5.77	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.6	60.5	58.7	52.7	61.3	61.9
Medium Trucks:	55.8	55.1	48.8	47.2	55.7	55.9
Heavy Trucks:	57.6	57.1	48.0	49.3	57.6	57.8
Vehicle Noise:	63.8	62.9	59.5	55.1	63.6	64.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	113
CNEL:	12	26	56	120



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Oak Canyon Drive to Burt Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 51,595 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,257 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.88	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.36	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.31	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.2	69.1	67.4	61.3	69.9	70.5	
Medium Trucks:	63.8	63.1	56.7	55.2	63.6	63.9	
Heavy Trucks:	64.2	63.6	54.5	55.8	64.2	64.3	
Vehicle Noise:	71.9	71.0	67.9	63.1	71.7	72.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	109	234	505	1,088
CNEL:	117	252	543	1,169

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Irvine Center Drive to Oak Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 49,313 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,068 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.69	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.55	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.51	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	68.9	67.2	61.1	69.7	70.3
Medium Trucks:	63.6	62.9	56.5	55.0	63.4	63.7
Heavy Trucks:	64.0	63.4	54.3	55.6	64.0	64.1
Vehicle Noise:	71.7	70.8	67.7	62.9	71.5	72.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	227	490	1,056
CNEL:	113	244	526	1,134

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-405 NB Off-Ramp to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,506 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,837 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.43	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-13.81	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.76	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.7	71.6	69.9	63.8	72.4	73.0
Medium Trucks:	66.3	65.6	59.2	57.7	66.1	66.4
Heavy Trucks:	66.7	66.1	57.0	58.3	66.7	66.8
Vehicle Noise:	74.4	73.5	70.4	65.6	74.2	74.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	246	530	1,141
CNEL:	123	264	569	1,226

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Burt Road to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 53,826 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,441 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.07	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.17	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.13	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.7	68.0	61.9	70.5	71.1
Medium Trucks:	64.3	63.7	57.3	55.8	64.2	64.5
Heavy Trucks:	64.8	64.2	55.1	56.4	64.7	64.9
Vehicle Noise:	72.5	71.6	68.5	63.7	72.3	72.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	245	527	1,135
CNEL:	122	263	566	1,220

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Marine to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 60,722 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,010 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.59	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-12.65	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-16.60	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.7	71.6	69.9	63.8	72.4	73.0
Medium Trucks:	66.2	65.6	59.2	57.7	66.1	66.4
Heavy Trucks:	66.7	66.1	57.0	58.3	66.6	66.8
Vehicle Noise:	74.4	73.5	70.4	65.6	74.2	74.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	190	409	882	1,900
CNEL:	204	440	947	2,041

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Trabuco Road to Towngate

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,436 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,253 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.52	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.48	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	68.0	66.2	60.1	68.8	69.4
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	70.7	69.8	66.8	62.0	70.5	71.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	196	422	910
CNEL:	98	211	454	977

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Barranca Parkway to Waterworks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,030 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,220 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.57	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.52	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	67.9	66.1	60.1	68.7	69.3
Medium Trucks:	62.5	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	63.0	62.4	53.3	54.6	62.9	63.1
Vehicle Noise:	70.7	69.8	66.7	61.9	70.5	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	195	419	903
CNEL:	97	209	450	970

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-5 SB Off-Ramp to Marine

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 50,537 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,169 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.79	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-13.45	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-17.40	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.9	70.8	69.1	63.0	71.6	72.2
Medium Trucks:	65.5	64.8	58.4	56.9	65.3	65.6
Heavy Trucks:	65.9	65.3	56.2	57.5	65.8	66.0
Vehicle Noise:	73.6	72.7	69.6	64.8	73.4	73.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	168	362	780	1,681
CNEL:	181	389	838	1,806



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Hospital to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,782 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,117 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.53	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.71	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.67	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5
Heavy Trucks:	62.8	62.2	53.2	54.4	62.8	62.9
Vehicle Noise:	70.5	69.6	66.6	61.8	70.3	70.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	190	410	884
CNEL:	95	205	441	950

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Nightmist to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,040 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,881 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.48	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-13.76	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-17.71	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.6	70.5	68.7	62.7	71.3	71.9
Medium Trucks:	65.1	64.5	58.1	56.6	65.0	65.3
Heavy Trucks:	65.6	65.0	55.9	57.2	65.5	65.7
Vehicle Noise:	73.3	72.4	69.3	64.5	73.1	73.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	160	345	744	1,602
CNEL:	172	371	799	1,722

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 36,253 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,991 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.35	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.89	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.84	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.6	70.5	68.8	62.7	71.3	72.0
Medium Trucks:	65.2	64.5	58.1	56.6	65.1	65.3
Heavy Trucks:	65.6	65.0	56.0	57.2	65.6	65.7
Vehicle Noise:	73.3	72.4	69.3	64.6	73.1	73.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	208	449	966
CNEL:	104	224	482	1,038

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-5 NB Off-Ramp to Nightmist

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,459 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,833 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.43	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-13.81	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-17.77	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.5	68.7	62.6	71.3	71.9
Medium Trucks:	65.1	64.4	58.1	56.5	65.0	65.2
Heavy Trucks:	65.5	64.9	55.9	57.1	65.5	65.6
Vehicle Noise:	73.2	72.3	69.3	64.5	73.0	73.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	159	342	738	1,589
CNEL:	171	368	793	1,707

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Towngate to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,028 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,807 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.07	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.16	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.12	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.1
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5
Vehicle Noise:	70.1	69.2	66.1	61.3	69.9	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	178	383	824
CNEL:	89	191	411	886

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Waterworks to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 33,123 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,733 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.96	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.28	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.24	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.2	65.4	59.4	68.0	68.6	
Medium Trucks:	61.8	61.2	54.8	53.2	61.7	61.9	
Heavy Trucks:	62.2	61.7	52.6	53.9	62.2	62.4	
Vehicle Noise:	70.0	69.0	66.0	61.2	69.8	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	376	810
CNEL:	87	187	404	870

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Irvine Boulevard to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,682 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,459 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.77	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.01	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.96	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.1	64.4	58.3	66.9	67.5
Medium Trucks:	60.8	60.1	53.7	52.2	60.6	60.9
Heavy Trucks:	61.2	60.6	51.5	52.8	61.2	61.3
Vehicle Noise:	68.9	68.0	64.9	60.1	68.7	69.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	110	237	511
CNEL:	55	118	255	549

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Roosevelt to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,585 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,266 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.73	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-14.51	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-18.46	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.8	68.0	61.9	70.6	71.2
Medium Trucks:	64.4	63.7	57.4	55.8	64.3	64.5
Heavy Trucks:	64.8	64.2	55.2	56.4	64.8	64.9
Vehicle Noise:	72.5	71.6	68.6	63.8	72.3	72.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	308	663	1,428
CNEL:	153	331	712	1,535



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Alton Parkway to Hospital

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,402 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,838 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.12	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.12	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.07	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5
Heavy Trucks:	62.8	62.2	53.2	54.4	62.8	62.9
Vehicle Noise:	70.5	69.6	66.6	61.8	70.3	70.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	391	842
CNEL:	90	195	420	905

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Sand Canyon/Shady Canyon  
 Road Segment: Quail Hill Parkway to I-405 SB Ramps

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,990 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,979 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.56	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.68	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.64	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.8	67.0	60.9	69.6	70.2
Medium Trucks:	63.4	62.7	56.4	54.8	63.3	63.5
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9
Vehicle Noise:	71.5	70.6	67.5	62.8	71.3	71.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	158	341	734
CNEL:	79	170	366	789

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Scientific Way  
 Road Segment: Irvine Center Drive to Wald

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,653 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 136 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-9.51	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-26.75	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-30.71	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	52.5	51.5	49.7	43.7	52.3	52.9	
Medium Trucks:	46.8	46.1	39.7	38.2	46.6	46.9	
Heavy Trucks:	48.6	48.0	39.0	40.2	48.6	48.7	
Vehicle Noise:	54.8	53.9	50.5	46.1	54.6	55.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	13	27	59
CNEL:	6	14	29	63

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Shady Canyon Drive  
 Road Segment: Culver Drive/Bonita Canyon Drive to Cloverfield

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,409 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 776 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.51	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-20.75	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-24.70	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.3	66.3	64.5	58.4	67.1	67.7	
Medium Trucks:	60.9	60.2	53.9	52.3	60.8	61.0	
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4	
Vehicle Noise:	69.0	68.1	65.1	60.3	68.8	69.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	145	313
CNEL:	34	73	156	337

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Shady Canyon Drive  
 Road Segment: Bommer Canyon Road to Sunnyhill

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,049 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	664 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	50.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 42.814				
Road Grade:	0.0%	Medium Trucks: 42.720				
Left View:	-90.0 degrees	Heavy Trucks: 42.814				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.19	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-21.42	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.38	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.7	62.9	56.8	65.5	66.1
Medium Trucks:	59.3	58.6	52.3	50.7	59.2	59.4
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8
Vehicle Noise:	67.4	66.5	63.5	58.7	67.2	67.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	70	152	326
CNEL:	35	76	163	351

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Skyhawk  
 Road Segment: Great Park Boulevard to Marine Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,431 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 861 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 25 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-0.05	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-17.29	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-21.24	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.4	55.4	53.6	47.6	56.2	56.8
Medium Trucks:	51.3	50.6	44.2	42.7	51.2	51.4
Heavy Trucks:	54.5	53.9	44.9	46.1	54.5	54.6
Vehicle Noise:	59.3	58.5	54.6	50.7	59.2	59.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	26	55	118
CNEL:	13	27	58	126

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Southwood  
 Road Segment: Yale Avenue to Colt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,054 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 252 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-6.85	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-24.08	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-28.04	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.1	57.0	55.3	49.2	57.8	58.4
Medium Trucks:	52.3	51.6	45.3	43.7	52.2	52.4
Heavy Trucks:	54.2	53.6	44.5	45.8	54.1	54.3
Vehicle Noise:	60.3	59.4	56.0	51.6	60.1	60.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	18	38	83
CNEL:	9	19	41	88

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Southwood  
 Road Segment: Challenger to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,909 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	240 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-7.06	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-24.30	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-28.25	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.9	56.8	55.0	49.0	57.6	58.2
Medium Trucks:	52.1	51.4	45.1	43.5	52.0	52.2
Heavy Trucks:	53.9	53.4	44.3	45.6	53.9	54.1
Vehicle Noise:	60.1	59.2	55.8	51.4	59.9	60.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	80
CNEL:	9	18	40	85



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Spectrum Center Drive (Fortune)  
 Road Segment: Pacifica to Quassar Drive (Spectrum )

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,853 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 978 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.53	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.48	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.2	58.2	56.4	50.3	59.0	59.6
Medium Trucks:	53.7	53.0	46.7	45.1	53.6	53.8
Heavy Trucks:	56.2	55.6	46.6	47.8	56.2	56.3
Vehicle Noise:	61.7	60.9	57.2	53.0	61.6	62.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	79	171
CNEL:	18	39	85	182

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Spectrum Center Drive (Fortune)  
 Road Segment: Quassar Drive (Spectrum ) to Gatewayb

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,277 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,095 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	0.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.03	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-20.99	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.7	58.6	56.9	50.8	59.4	60.1
Medium Trucks:	54.2	53.5	47.2	45.6	54.1	54.3
Heavy Trucks:	56.7	56.1	47.1	48.3	56.7	56.8
Vehicle Noise:	62.2	61.4	57.7	53.5	62.0	62.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	40	86	184
CNEL:	20	42	91	196

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Sunnyhill  
 Road Segment: Shady Canyon Drive to Turtle Rock Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,807 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	562 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-1.90	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-19.14	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-23.10	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.6	53.5	51.8	45.7	54.3	54.9
Medium Trucks:	49.4	48.7	42.4	40.8	49.3	49.5
Heavy Trucks:	52.6	52.0	43.0	44.3	52.6	52.7
Vehicle Noise:	57.5	56.6	52.7	48.8	57.3	57.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	41	89
CNEL:	9	20	44	95

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Technology Drive  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,564 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,769 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.47	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.72	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.9	59.8	68.4	69.0	
Medium Trucks:	62.4	61.8	55.4	53.9	62.3	62.6	
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4	
Vehicle Noise:	70.5	69.6	66.5	61.8	70.3	70.8	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	142	305	657
CNEL:	71	152	327	705

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative Project Name: Irvine GP  
 Road Name: Technology Drive Job Number: 15937  
 Road Segment: Old Laguna Canyon Road to I-5/SR-133 Undercrossing

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,455 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,100 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.97	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.92	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.4	64.7	58.6	67.2	67.8
Medium Trucks:	61.2	60.6	54.2	52.7	61.1	61.4
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	69.3	68.4	65.3	60.6	69.1	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	254	547
CNEL:	59	126	272	586

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Technology Drive  
 Road Segment: I-5/SR-133 to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,498 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,021 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.09	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.3	64.5	58.4	67.1	67.7
Medium Trucks:	61.1	60.4	54.0	52.5	61.0	61.2
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	69.2	68.2	65.1	60.4	69.0	69.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	115	247	533
CNEL:	57	123	265	572

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Technology Drive  
 Road Segment: Ada to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,550 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 540 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.62	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.86	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.82	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.6	60.5	58.8	52.7	61.3	61.9	
Medium Trucks:	55.3	54.7	48.3	46.8	55.2	55.5	
Heavy Trucks:	56.2	55.6	46.6	47.8	56.2	56.3	
Vehicle Noise:	63.4	62.5	59.4	54.7	63.2	63.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	48	103	221
CNEL:	24	51	110	237

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Toledo Way  
 Road Segment: Bake Parkway to City Limits

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,798 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 643 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-21.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-25.52	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.6	62.6	60.8	54.7	63.4	64.0	
Medium Trucks:	57.2	56.5	50.2	48.6	57.1	57.3	
Heavy Trucks:	57.6	57.0	48.0	49.2	57.6	57.7	
Vehicle Noise:	65.3	64.4	61.4	56.6	65.1	65.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	137	296
CNEL:	32	69	148	318



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Toledo Way  
 Road Segment: Goodyear to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,405 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	528 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.42	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.37	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.8	61.7	59.9	53.9	62.5	63.1
Medium Trucks:	56.3	55.7	49.3	47.8	56.2	56.5
Heavy Trucks:	56.8	56.2	47.1	48.4	56.7	56.9
Vehicle Noise:	64.5	63.6	60.5	55.7	64.3	64.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	56	120	260
CNEL:	28	60	129	279

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Toledo Way  
 Road Segment: Alton Parkway to Parker

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	5,994 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	494 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.47	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.71	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.66	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.5	61.4	59.7	53.6	62.2	62.8
Medium Trucks:	56.1	55.4	49.0	47.5	55.9	56.2
Heavy Trucks:	56.5	55.9	46.8	48.1	56.5	56.6
Vehicle Noise:	64.2	63.3	60.2	55.4	64.0	64.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	115	248
CNEL:	27	57	124	267

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Trabuco Road  
 Road Segment: Keystone to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,736 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,216 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.30	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.1	64.0	62.3	56.2	64.8	65.5	
Medium Trucks:	58.9	58.2	51.8	50.3	58.8	59.0	
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8	
Vehicle Noise:	66.9	66.0	62.9	58.2	66.8	67.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	176	380
CNEL:	41	88	189	407

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Trabuco Road  
 Road Segment: Jeffrey Road to Keystone

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,256 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,176 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.44	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.0	63.9	62.1	56.1	64.7	65.3	
Medium Trucks:	58.7	58.1	51.7	50.1	58.6	58.8	
Heavy Trucks:	59.6	59.0	49.9	51.2	59.5	59.7	
Vehicle Noise:	66.8	65.9	62.7	58.1	66.6	67.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	80	172	371
CNEL:	40	86	185	398

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Trabuco Road  
 Road Segment: Culver Drive to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,483 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,112 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.73	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.68	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.7	63.7	61.9	55.8	64.5	65.1	
Medium Trucks:	58.5	57.8	51.5	49.9	58.4	58.6	
Heavy Trucks:	59.3	58.7	49.7	51.0	59.3	59.4	
Vehicle Noise:	66.6	65.7	62.5	57.8	66.4	66.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	166	358
CNEL:	38	83	178	384

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Trabuco Road  
 Road Segment: Monroe to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,466 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,111 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.73	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.69	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.7	63.7	61.9	55.8	64.5	65.1
Medium Trucks:	58.5	57.8	51.4	49.9	58.4	58.6
Heavy Trucks:	59.3	58.7	49.7	50.9	59.3	59.4
Vehicle Noise:	66.6	65.6	62.5	57.8	66.4	66.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	166	358
CNEL:	38	83	178	384

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Trabuco Road  
 Road Segment: I-5 NB Off-Ramp to Monroe

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,135 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,084 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.84	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.80	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.5	61.8	55.7	64.4	65.0
Medium Trucks:	58.4	57.7	51.3	49.8	58.3	58.5
Heavy Trucks:	59.2	58.6	49.6	50.8	59.2	59.3
Vehicle Noise:	66.4	65.5	62.4	57.7	66.3	66.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	163	352
CNEL:	38	81	175	377

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Trabuco Road  
 Road Segment: Yale Avenue to Remington

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,278 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,013 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.90	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.09	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.3	61.5	55.4	64.1	64.7
Medium Trucks:	58.1	57.4	51.0	49.5	58.0	58.2
Heavy Trucks:	58.9	58.3	49.3	50.5	58.9	59.0
Vehicle Noise:	66.2	65.2	62.1	57.4	66.0	66.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	72	156	336
CNEL:	36	78	167	361



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Trabuco Road  
 Road Segment: Remington to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,518 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 950 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.41	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.37	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.0	63.0	61.2	55.2	63.8	64.4	
Medium Trucks:	57.8	57.1	50.8	49.2	57.7	57.9	
Heavy Trucks:	58.6	58.1	49.0	50.3	58.6	58.7	
Vehicle Noise:	65.9	65.0	61.8	57.1	65.7	66.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	150	322
CNEL:	35	74	160	346

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Turtle Ridge Drive  
 Road Segment: Federation Way to Bonita Canyon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,930 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,727 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.42	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.82	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.77	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.6	65.6	63.8	57.8	66.4	67.0	
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5	
Heavy Trucks:	61.2	60.6	51.6	52.9	61.2	61.3	
Vehicle Noise:	68.5	67.6	64.4	59.7	68.3	68.7	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	223	480
CNEL:	51	111	239	515

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Turtle Rock Drive  
 Road Segment: Ridgeline to Willowleaf

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,823 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	728 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.33	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-20.57	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-24.52	1.83	-1.20	-5.60	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.8	64.7	62.9	56.9	65.5	66.1	
Medium Trucks:	59.5	58.9	52.5	51.0	59.4	59.6	
Heavy Trucks:	60.4	59.8	50.7	52.0	60.3	60.5	
Vehicle Noise:	67.6	66.7	63.5	58.9	67.4	67.9	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	117	252
CNEL:	27	58	125	270

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Turtle Rock Drive  
 Road Segment: Silkwood to Sunnyhill

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,720 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	719 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.38	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-20.62	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-24.58	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.7	62.9	56.8	65.5	66.1
Medium Trucks:	59.5	58.8	52.4	50.9	59.4	59.6
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	67.6	66.6	63.5	58.8	67.4	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	116	250
CNEL:	27	58	124	268

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Turtle Rock Drive  
 Road Segment: Canyon Park to Ridgeline

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,353 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	607 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.12	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-21.36	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-25.32	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.0	63.9	62.1	56.1	64.7	65.3
Medium Trucks:	58.7	58.1	51.7	50.2	58.6	58.9
Heavy Trucks:	59.6	59.0	49.9	51.2	59.6	59.7
Vehicle Noise:	66.8	65.9	62.8	58.1	66.6	67.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	48	104	223
CNEL:	24	52	111	239

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Turtle Rock Drive  
 Road Segment: Sunnyhill to Southernwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,658 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	302 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-7.15	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-24.39	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-28.35	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	60.9	59.1	53.1	61.7	62.3
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8
Heavy Trucks:	56.5	56.0	46.9	48.2	56.5	56.6
Vehicle Noise:	63.8	62.9	59.7	55.0	63.6	64.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	30	65	140
CNEL:	15	32	70	150

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Turtle Rock Drive  
 Road Segment: Campus Drive to Hillgate

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,260 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	599 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.42	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.37	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.0	61.0	59.2	53.2	61.8	62.4
Medium Trucks:	55.8	55.1	48.8	47.2	55.7	55.9
Heavy Trucks:	56.6	56.0	47.0	48.3	56.6	56.7
Vehicle Noise:	63.9	63.0	59.8	55.1	63.7	64.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	51	110	237
CNEL:	25	55	118	254

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Turtle Rock Drive  
 Road Segment: Paseo Segovia to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,076 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 336 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 32.140 Medium Trucks: 32.016 Heavy Trucks: 32.141																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-6.68	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-23.92	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	84.25	-27.88	2.78	-1.20	-5.56	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.4	62.3	60.5	54.5	63.1	63.7
Medium Trucks:	57.1	56.5	50.1	48.5	57.0	57.2
Heavy Trucks:	57.9	57.4	48.3	49.6	57.9	58.1
Vehicle Noise:	65.2	64.3	61.1	56.5	65.0	65.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	40	86	186
CNEL:	20	43	92	199



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: University Drive  
 Road Segment: Golden Glow to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 43,009 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,548 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.09	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.15	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.10	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.0	70.0	68.2	62.2	70.8	71.4
Medium Trucks:	64.6	63.9	57.6	56.0	64.5	64.7
Heavy Trucks:	65.0	64.4	55.4	56.7	65.0	65.1
Vehicle Noise:	72.7	71.8	68.8	64.0	72.5	73.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	199	429	924
CNEL:	99	214	461	993

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: University Drive  
 Road Segment: Ridgeline to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 52,466 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,328 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 75.0 feet Centerline Dist. to Observer: 75.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 70.413 Medium Trucks: 70.356 Heavy Trucks: 70.413																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.95	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.28	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-17.24	-2.33	-1.20	-5.25	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	69.6	67.8	61.7	70.4	71.0
Medium Trucks:	64.2	63.5	57.2	55.6	64.1	64.3
Heavy Trucks:	64.6	64.0	55.0	56.2	64.6	64.7
Vehicle Noise:	72.3	71.4	68.4	63.6	72.1	72.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	104	224	482	1,039
CNEL:	112	240	518	1,116

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: University Drive  
 Road Segment: Culver Drive to Golden Glow

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 41,770 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,446 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.96	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.27	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.23	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.9	69.9	68.1	62.0	70.7	71.3
Medium Trucks:	64.5	63.8	57.5	55.9	64.4	64.6
Heavy Trucks:	64.9	64.3	55.3	56.5	64.9	65.0
Vehicle Noise:	72.6	71.7	68.7	63.9	72.4	72.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	195	421	906
CNEL:	97	210	452	974

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: University Drive  
 Road Segment: Yale Avenue to Ridgeline

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,097 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,061 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.45	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.79	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.74	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.4	69.3	67.6	61.5	70.1	70.8	
Medium Trucks:	64.0	63.3	56.9	55.4	63.9	64.1	
Heavy Trucks:	64.4	63.8	54.8	56.0	64.4	64.5	
Vehicle Noise:	72.1	71.2	68.1	63.4	71.9	72.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	180	389	837
CNEL:	90	194	418	900

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: University Drive  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 59,053 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,872 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.47	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-12.77	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-16.73	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.7	67.9	61.9	70.5	71.1
Medium Trucks:	64.3	63.7	57.3	55.8	64.2	64.5
Heavy Trucks:	64.8	64.2	55.1	56.4	64.7	64.9
Vehicle Noise:	72.5	71.6	68.5	63.7	72.3	72.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	119	256	553	1,190
CNEL:	128	276	594	1,279

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: University Drive  
 Road Segment: Mesa to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,247 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,733 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.31	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-13.93	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.88	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.6	71.5	69.7	63.7	72.3	72.9	
Medium Trucks:	66.1	65.5	59.1	57.6	66.0	66.3	
Heavy Trucks:	66.6	66.0	56.9	58.2	66.5	66.7	
Vehicle Noise:	74.3	73.3	70.3	65.5	74.1	74.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	112	241	520	1,120
CNEL:	120	259	559	1,204

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative	Project Name: Irvine GP
Road Name: University Drive	Job Number: 15937
Road Segment: MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,232 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 3,649 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 50 mph																					
Near/Far Lane Distance: 74 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 60.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 60.0 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 47.329																				
Left View: -90.0 degrees	Medium Trucks: 47.244																				
Right View: 90.0 degrees	Heavy Trucks: 47.329																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.21	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.03	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.98	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.5	71.4	69.6	63.6	72.2	72.8
Medium Trucks:	66.0	65.4	59.0	57.5	65.9	66.2
Heavy Trucks:	66.5	65.9	56.8	58.1	66.4	66.6
Vehicle Noise:	74.2	73.2	70.2	65.4	74.0	74.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	238	512	1,104
CNEL:	119	255	550	1,186

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: University Drive  
 Road Segment: California Avenue to Mesa

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,280 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,653 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.22	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.02	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.98	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.5	71.4	69.6	63.6	72.2	72.8
Medium Trucks:	66.0	65.4	59.0	57.5	65.9	66.2
Heavy Trucks:	66.5	65.9	56.8	58.1	66.4	66.6
Vehicle Noise:	74.2	73.3	70.2	65.4	74.0	74.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	238	513	1,104
CNEL:	119	256	551	1,186



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: University Drive  
 Road Segment: Campus Drive to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,107 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,061 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.45	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.79	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.74	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.3	61.6	55.3	53.7	62.2	62.4
Heavy Trucks:	62.7	62.2	53.1	54.4	62.7	62.8
Vehicle Noise:	70.5	69.5	66.5	61.7	70.3	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	188	405	873
CNEL:	94	202	436	938

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative Project Name: Irvine GP  
 Road Name: University Drive Job Number: 15937  
 Road Segment: SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,626 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,619 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 42.814				
Road Grade: 0.0%	Medium Trucks: 42.720				
Left View: -90.0 degrees	Heavy Trucks: 42.814				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.32	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-17.55	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-21.51	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.8	60.7	69.3	69.9
Medium Trucks:	63.2	62.5	56.1	54.6	63.1	63.3
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7
Vehicle Noise:	71.3	70.4	67.3	62.5	71.1	71.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	275	591
CNEL:	64	137	295	635

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative Project Name: Irvine GP  
 Road Name: University Drive Job Number: 15937  
 Road Segment: SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,890 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 2,713 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 50 mph																					
Near/Far Lane Distance: 78 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 84.0 feet	Heavy Trucks: 8.006 <span style="float:right">Grade Adjustment: 0.0</span>																				
Centerline Dist. to Observer: 84.0 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 74.458																				
Left View: -90.0 degrees	Medium Trucks: 74.404																				
Right View: 90.0 degrees	Heavy Trucks: 74.458																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.93	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.31	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.27	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.2	65.4	59.3	68.0	68.6
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	69.9	69.0	66.0	61.2	69.7	70.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	374	806
CNEL:	87	187	402	866

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: University Drive  
 Road Segment: San Joaquin to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 30,341 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,503 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.58	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.66	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.62	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.8	65.1	59.0	67.6	68.2
Medium Trucks:	61.4	60.8	54.4	52.9	61.3	61.6
Heavy Trucks:	61.9	61.3	52.2	53.5	61.8	62.0
Vehicle Noise:	69.6	68.7	65.6	60.8	69.4	69.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	165	354	764
CNEL:	82	177	381	820

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: University Drive  
 Road Segment: Harvard Avenue to San Joaquin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 30,225 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,494 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.56	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.68	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.63	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.9	66.8	65.0	59.0	67.6	68.2	
Medium Trucks:	61.4	60.8	54.4	52.9	61.3	61.5	
Heavy Trucks:	61.8	61.3	52.2	53.5	61.8	62.0	
Vehicle Noise:	69.6	68.6	65.6	60.8	69.4	69.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	164	354	762
CNEL:	82	176	380	818

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Valley Oak Drive  
 Road Segment: Hawkcreek to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,886 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,146 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.82	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.01	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.1	65.1	63.3	57.3	65.9	66.5	
Medium Trucks:	59.7	59.0	52.7	51.1	59.6	59.8	
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2	
Vehicle Noise:	67.8	66.9	63.9	59.1	67.6	68.1	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	94	202	435
CNEL:	47	101	217	467

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Valley Oak Drive  
 Road Segment: Irvine Center Drive to Oak Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,395 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,023 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 42.814				
Road Grade: 0.0%		Medium Trucks: 42.720				
Left View: -90.0 degrees		Heavy Trucks: 42.814				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.31	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-19.55	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-23.51	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.5	64.8	58.7	67.3	67.9
Medium Trucks:	61.2	60.5	54.1	52.6	61.1	61.3
Heavy Trucks:	61.6	61.0	52.0	53.2	61.6	61.7
Vehicle Noise:	69.3	68.4	65.3	60.5	69.1	69.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	94	202	435
CNEL:	47	101	217	468

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Valley Oak Drive  
 Road Segment: Barranca Parkway to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,075 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 914 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.80	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-20.04	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.99	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.2	64.1	62.3	56.3	64.9	65.5	
Medium Trucks:	58.7	58.1	51.7	50.1	58.6	58.8	
Heavy Trucks:	59.1	58.6	49.5	50.8	59.1	59.2	
Vehicle Noise:	66.9	65.9	62.9	58.1	66.7	67.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	81	174	374
CNEL:	40	87	186	402



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Valley Oak Drive  
 Road Segment: Alton Parkway to Hawkcreek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,689 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 552 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.99	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.18	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.0	61.9	60.1	54.1	62.7	63.3	
Medium Trucks:	56.5	55.9	49.5	48.0	56.4	56.6	
Heavy Trucks:	56.9	56.4	47.3	48.6	56.9	57.1	
Vehicle Noise:	64.7	63.7	60.7	55.9	64.5	64.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	124	267
CNEL:	29	62	133	287

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Marriott to Morse Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,254 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,908 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.69	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.55	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.51	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.8	66.1	60.0	68.6	69.2
Medium Trucks:	62.7	62.0	55.6	54.1	62.5	62.8
Heavy Trucks:	63.5	62.9	53.9	55.1	63.5	63.6
Vehicle Noise:	70.7	69.8	66.7	62.0	70.5	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	146	315	679
CNEL:	73	157	338	729

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Michelson Drive to Quartz

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,068 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,811 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.70	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.66	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6
Heavy Trucks:	63.3	62.8	53.7	55.0	63.3	63.5
Vehicle Noise:	70.6	69.7	66.5	61.9	70.4	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	143	308	664
CNEL:	71	153	331	712

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 33,488 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,763 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.46	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.78	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.73	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.8	59.8	68.4	69.0	
Medium Trucks:	62.4	61.8	55.4	53.9	62.3	62.5	
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4	
Vehicle Noise:	70.5	69.6	66.5	61.8	70.3	70.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	141	305	656
CNEL:	70	152	327	704

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 41,190 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,398 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.36	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.88	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	84.25	-17.83	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.2	65.5	59.4	68.0	68.6
Medium Trucks:	62.0	61.4	55.0	53.5	61.9	62.2
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0
Vehicle Noise:	70.1	69.2	66.1	61.4	69.9	70.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	344	742
CNEL:	80	172	369	796

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Main Street to Anchor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,693 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,697 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.36	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.88	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.84	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.7	59.7	68.3	68.9
Medium Trucks:	62.3	61.7	55.3	53.8	62.2	62.4
Heavy Trucks:	63.2	62.6	53.5	54.8	63.2	63.3
Vehicle Noise:	70.4	69.5	66.4	61.7	70.2	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	139	300	646
CNEL:	69	149	322	693

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Anchor to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,540 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,602 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.20	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.04	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.99	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.4	65.6	59.5	68.2	68.8
Medium Trucks:	62.2	61.5	55.1	53.6	62.1	62.3
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	70.3	69.3	66.2	61.5	70.1	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	293	631
CNEL:	68	146	314	677

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Morse to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,827 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,461 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.96	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.28	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.23	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.1	65.3	59.3	67.9	68.5
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.0
Heavy Trucks:	62.8	62.2	53.1	54.4	62.8	62.9
Vehicle Noise:	70.0	69.1	66.0	61.3	69.8	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	282	608
CNEL:	65	140	303	652



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Martin to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,714 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,121 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.92	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.88	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.5	64.7	58.6	67.3	67.9
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4
Heavy Trucks:	62.1	61.5	52.5	53.8	62.1	62.2
Vehicle Noise:	69.4	68.5	65.3	60.6	69.2	69.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	119	255	550
CNEL:	59	127	274	590

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Campus Drive to Martin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,190 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,078 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.01	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.97	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.4	64.6	58.6	67.2	67.8
Medium Trucks:	61.2	60.5	54.2	52.6	61.1	61.3
Heavy Trucks:	62.0	61.5	52.4	53.7	62.0	62.1
Vehicle Noise:	69.3	68.4	65.2	60.5	69.1	69.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	117	252	543
CNEL:	58	125	270	582

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Dupont Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,012 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,063 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.04	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.00	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.3	64.6	58.5	67.1	67.8
Medium Trucks:	61.2	60.5	54.1	52.6	61.0	61.3
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	69.2	68.3	65.2	60.5	69.1	69.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	251	540
CNEL:	58	125	269	580

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Jeffrey Road to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,871 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.63	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.61	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.56	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	63.4	62.9	53.8	55.1	63.4	63.6
Vehicle Noise:	70.7	69.8	66.6	61.9	70.5	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	145	313	673
CNEL:	72	156	335	722

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Myford Road to Jamboree Road SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,977 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,896 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.83	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.41	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.37	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	66.0	64.2	58.2	66.8	67.4
Medium Trucks:	60.8	60.1	53.8	52.2	60.7	60.9
Heavy Trucks:	61.6	61.1	52.0	53.3	61.6	61.7
Vehicle Noise:	68.9	68.0	64.8	60.1	68.7	69.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	110	237	511
CNEL:	55	118	254	548

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Walnut Avenue  
 Road Segment: The Mall Street to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,348 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,761 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.51	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.73	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.69	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.8	66.5	67.1
Medium Trucks:	60.5	59.8	53.4	51.9	60.4	60.6
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4
Vehicle Noise:	68.6	67.6	64.5	59.8	68.4	68.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	105	226	486
CNEL:	52	112	242	522

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Harvard Avenue to The Mall Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,283 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,756 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.74	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.70	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.6	63.9	57.8	66.4	67.1
Medium Trucks:	60.5	59.8	53.4	51.9	60.3	60.6
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4
Vehicle Noise:	68.5	67.6	64.5	59.8	68.4	68.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	105	225	485
CNEL:	52	112	242	521

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Franciscan Street to Ravenwood Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,627 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,619 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.05	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	60.1	59.4	53.1	51.5	60.0	60.2
Heavy Trucks:	61.0	60.4	51.3	52.6	60.9	61.1
Vehicle Noise:	68.2	67.3	64.1	59.5	68.0	68.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	99	213	460
CNEL:	49	106	229	493



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Ravenwood Street to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,787 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,632 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.02	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.4	65.3	63.6	57.5	66.1	66.7	
Medium Trucks:	60.1	59.5	53.1	51.6	60.0	60.3	
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1	
Vehicle Noise:	68.2	67.3	64.2	59.5	68.0	68.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	100	215	462
CNEL:	50	107	230	496

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Culver Drive to Franciscan Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,171 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,582 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.04	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.20	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.15	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.3	65.2	63.4	57.4	66.0	66.6	
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1	
Heavy Trucks:	60.9	60.3	51.2	52.5	60.8	61.0	
Vehicle Noise:	68.1	67.2	64.0	59.4	67.9	68.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	98	210	453
CNEL:	49	105	225	485

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Peters Canyon Road to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,108 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,154 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.38	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.86	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.81	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.9	64.9	63.1	57.1	65.7	66.3	
Medium Trucks:	59.7	59.0	52.7	51.1	59.6	59.8	
Heavy Trucks:	60.5	60.0	50.9	52.2	60.5	60.7	
Vehicle Noise:	67.8	66.9	63.7	59.0	67.6	68.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	269	580
CNEL:	62	134	289	622

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative Project Name: Irvine GP  
 Road Name: Walnut Avenue Job Number: 15937  
 Road Segment: Jamboree Road NB Off-Ramp to Peters Canyon Road

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,075 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,069 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.03	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.99	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.8	64.7	62.9	56.9	65.5	66.1
Medium Trucks:	59.5	58.9	52.5	50.9	59.4	59.6
Heavy Trucks:	60.4	59.8	50.7	52.0	60.3	60.5
Vehicle Noise:	67.6	66.7	63.5	58.9	67.4	67.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	122	262	565
CNEL:	61	130	281	606

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Yale Avenue to Kazan Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,945 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,233 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.04	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.28	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.24	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.2	64.1	62.3	56.3	64.9	65.5	
Medium Trucks:	58.9	58.3	51.9	50.4	58.8	59.0	
Heavy Trucks:	59.8	59.2	50.1	51.4	59.8	59.9	
Vehicle Noise:	67.0	66.1	63.0	58.3	66.8	67.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	83	178	383
CNEL:	41	89	191	411

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Wisteria to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,674 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,211 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.12	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.36	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.32	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.0	62.3	56.2	64.8	65.4
Medium Trucks:	58.9	58.2	51.8	50.3	58.7	59.0
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8
Vehicle Noise:	66.9	66.0	62.9	58.2	66.7	67.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	176	379
CNEL:	41	88	189	406

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative Project Name: Irvine GP  
 Road Name: Warner Avenue Job Number: 15937  
 Road Segment: Jamboree Road SB Off-ramp to Construction North

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,278 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,415 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.88	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.36	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.32	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.3	59.2	67.8	68.4
Medium Trucks:	61.9	61.2	54.8	53.3	61.7	62.0
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	69.9	69.0	65.9	61.2	69.7	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	279	600
CNEL:	64	139	299	644

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Warner Avenue  
 Road Segment: Construction North to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,424 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,685 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.31	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.92	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.88	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.5	65.5	63.7	57.6	66.3	66.9	
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4	
Heavy Trucks:	61.1	60.5	51.5	52.8	61.1	61.2	
Vehicle Noise:	68.4	67.5	64.3	59.6	68.2	68.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	102	219	472
CNEL:	51	109	235	506



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Warner Avenue  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,244 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,175 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.49	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.44	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.0	63.9	62.1	56.1	64.7	65.3	
Medium Trucks:	58.7	58.1	51.7	50.1	58.6	58.8	
Heavy Trucks:	59.6	59.0	49.9	51.2	59.5	59.7	
Vehicle Noise:	66.8	65.9	62.7	58.1	66.6	67.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	80	172	371
CNEL:	40	86	185	398

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Warner Avenue  
 Road Segment: Santa Ynez to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,546 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 953 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.16	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.40	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.36	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.1	63.0	61.2	55.2	63.8	64.4	
Medium Trucks:	57.8	57.1	50.8	49.2	57.7	57.9	
Heavy Trucks:	58.7	58.1	49.0	50.3	58.6	58.8	
Vehicle Noise:	65.9	65.0	61.8	57.2	65.7	66.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	70	150	323
CNEL:	35	75	161	346

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Warner Avenue  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,716 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 884 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.68	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.7	62.7	60.9	54.8	63.5	64.1
Medium Trucks:	57.5	56.8	50.5	48.9	57.4	57.6
Heavy Trucks:	58.3	57.7	48.7	50.0	58.3	58.4
Vehicle Noise:	65.6	64.7	61.5	56.8	65.4	65.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	66	143	307
CNEL:	33	71	153	329

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: West Yale Loop  
 Road Segment: Alton Parkway to Blue Lake North

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,475 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	782 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.51	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.75	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.70	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.8	60.7	58.9	52.9	61.5	62.1
Medium Trucks:	55.7	55.1	48.7	47.2	55.6	55.8
Heavy Trucks:	57.0	56.5	47.4	48.7	57.0	57.2
Vehicle Noise:	63.8	62.9	59.6	55.0	63.6	64.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	233
CNEL:	25	54	116	250

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: West Yale Loop  
 Road Segment: Eagle Run to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,135 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	754 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.67	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.91	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.86	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.6	60.5	58.8	52.7	61.3	61.9
Medium Trucks:	55.6	54.9	48.5	47.0	55.5	55.7
Heavy Trucks:	56.9	56.3	47.3	48.5	56.9	57.0
Vehicle Noise:	63.6	62.7	59.4	54.9	63.4	63.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	49	106	228
CNEL:	24	52	113	244

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: West Yale Loop  
 Road Segment: Thunder Run to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,371 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 773 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.75	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.7	60.6	58.9	52.8	61.4	62.1	
Medium Trucks:	55.7	55.0	48.6	47.1	55.6	55.8	
Heavy Trucks:	57.0	56.4	47.4	48.6	57.0	57.1	
Vehicle Noise:	63.7	62.8	59.5	55.0	63.5	64.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	107	231
CNEL:	25	53	115	248

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: West Yale Loop  
 Road Segment: Main Street to Timber Run

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,206 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	594 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.70	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.94	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.89	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.6	59.5	57.7	51.7	60.3	60.9
Medium Trucks:	54.5	53.9	47.5	46.0	54.4	54.7
Heavy Trucks:	55.9	55.3	46.2	47.5	55.8	56.0
Vehicle Noise:	62.6	61.7	58.4	53.9	62.4	62.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	42	90	194
CNEL:	21	45	97	208

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: West Yale Loop  
 Road Segment: Yale Avenue to Shorebird

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,821 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 645 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.58	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.54	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.9	59.9	58.1	52.0	60.7	61.3
Medium Trucks:	54.9	54.2	47.9	46.3	54.8	55.0
Heavy Trucks:	56.2	55.6	46.6	47.8	56.2	56.3
Vehicle Noise:	62.9	62.0	58.8	54.2	62.7	63.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	44	95	205
CNEL:	22	47	102	220



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: West Yale Loop  
 Road Segment: Warner Avenue to Stonecreek South

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,943 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 573 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.86	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.05	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.4	59.3	57.6	51.5	60.1	60.7	
Medium Trucks:	54.4	53.7	47.3	45.8	54.3	54.5	
Heavy Trucks:	55.7	55.1	46.1	47.3	55.7	55.8	
Vehicle Noise:	62.4	61.5	58.2	53.7	62.2	62.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	41	88	190
CNEL:	20	44	94	203

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: West Yale Loop  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,571 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 542 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.29	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.2	59.1	57.3	51.3	59.9	60.5	
Medium Trucks:	54.1	53.5	47.1	45.6	54.0	54.3	
Heavy Trucks:	55.5	54.9	45.8	47.1	55.4	55.6	
Vehicle Noise:	62.2	61.3	58.0	53.5	62.0	62.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	85	183
CNEL:	20	42	91	196

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: West Yale Loop  
 Road Segment: Stonecreek North to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,771 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	559 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.97	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.21	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.16	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.3	59.2	57.5	51.4	60.0	60.6
Medium Trucks:	54.3	53.6	47.2	45.7	54.2	54.4
Heavy Trucks:	55.6	55.0	46.0	47.2	55.6	55.7
Vehicle Noise:	62.3	61.4	58.1	53.6	62.1	62.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	40	87	186
CNEL:	20	43	93	200

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: West Yale Loop  
 Road Segment: Birdsong to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,532 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	539 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.12	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.36	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.32	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.1	59.1	57.3	51.3	59.9	60.5
Medium Trucks:	54.1	53.4	47.1	45.5	54.0	54.2
Heavy Trucks:	55.4	54.8	45.8	47.1	55.4	55.5
Vehicle Noise:	62.1	61.3	58.0	53.4	62.0	62.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	84	182
CNEL:	19	42	90	195

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Westwood  
 Road Segment: Yorktown to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,042 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	498 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-3.88	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-21.12	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-25.08	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.1	60.0	58.2	52.2	60.8	61.4
Medium Trucks:	55.3	54.6	48.2	46.7	55.2	55.4
Heavy Trucks:	57.1	56.5	47.5	48.8	57.1	57.2
Vehicle Noise:	63.3	62.4	59.0	54.6	63.1	63.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	13	28	60	130
CNEL:	14	30	64	139

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Westwood  
 Road Segment: Bryan Avenue to Leaf

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,912 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 323 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.77	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-23.01	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-26.97	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	59.2	58.1	56.3	50.3	58.9	59.5	
Medium Trucks:	53.4	52.7	46.4	44.8	53.3	53.5	
Heavy Trucks:	55.2	54.6	45.6	46.9	55.2	55.3	
Vehicle Noise:	61.4	60.5	57.1	52.7	61.2	61.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	10	21	45	97
CNEL:	10	22	48	104

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Yale Avenue  
 Road Segment: Deerfield Avenue to Winvale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,497 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 866 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.58	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-19.81	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-23.77	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.5	65.5	63.7	57.6	66.3	66.9	
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4	
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2	
Vehicle Noise:	68.4	67.4	64.3	59.6	68.2	68.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	131	283
CNEL:	30	65	141	303

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Yale Avenue  
 Road Segment: Hicks Canyon Drive to Meadowood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,806 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 644 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.86	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-21.10	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-25.06	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.2	62.4	56.3	65.0	65.6
Medium Trucks:	59.0	58.3	52.0	50.4	58.9	59.1
Heavy Trucks:	59.8	59.2	50.2	51.5	59.8	59.9
Vehicle Noise:	67.1	66.2	63.0	58.3	66.9	67.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	232
CNEL:	25	54	116	249



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Yale Avenue  
 Road Segment: Walnut Avenue to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,894 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,229 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 32.140 Medium Trucks: 32.016 Heavy Trucks: 32.141																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.06	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-18.29	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	84.25	-22.25	2.78	-1.20	-5.56	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.0	67.9	66.1	60.1	68.7	69.3	
Medium Trucks:	62.8	62.1	55.7	54.2	62.6	62.9	
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7	
Vehicle Noise:	70.8	69.9	66.8	62.1	70.6	71.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	95	204	440
CNEL:	47	102	219	472

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Yale Avenue  
 Road Segment: Roosevelt to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,285 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,179 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.43	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.0	63.9	62.1	56.1	64.7	65.3
Medium Trucks:	58.7	58.1	51.7	50.2	58.6	58.8
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7
Vehicle Noise:	66.8	65.9	62.8	58.1	66.6	67.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	80	173	372
CNEL:	40	86	185	399

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Yale Avenue  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,571 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,120 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.46	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.70	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.65	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.8	63.7	61.9	55.9	64.5	65.1	
Medium Trucks:	58.5	57.8	51.5	49.9	58.4	58.6	
Heavy Trucks:	59.4	58.8	49.7	51.0	59.3	59.5	
Vehicle Noise:	66.6	65.7	62.5	57.9	66.4	66.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	167	359
CNEL:	39	83	179	386

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Yale Avenue  
 Road Segment: West Yale Loop to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,463 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,028 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.83	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.02	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.3	61.6	55.5	64.1	64.7
Medium Trucks:	58.1	57.5	51.1	49.6	58.0	58.3
Heavy Trucks:	59.0	58.4	49.4	50.6	59.0	59.1
Vehicle Noise:	66.2	65.3	62.2	57.5	66.0	66.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	73	158	340
CNEL:	36	78	169	364

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Yale Avenue  
 Road Segment: Winvale Avenue to Karen Ann Lane

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,439 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 861 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.84	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.79	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.6	62.6	60.8	54.7	63.4	64.0	
Medium Trucks:	57.4	56.7	50.3	48.8	57.3	57.5	
Heavy Trucks:	58.2	57.6	48.6	49.8	58.2	58.3	
Vehicle Noise:	65.4	64.5	61.4	56.7	65.3	65.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	140	302
CNEL:	32	70	150	324

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Yale Avenue  
 Road Segment: Karen Ann Lane to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	10,439 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	861 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		57.786		
Left View:	-90.0 degrees	Medium Trucks:		57.717		
Right View:	90.0 degrees	Heavy Trucks:		57.787		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.84	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.79	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.6	62.6	60.8	54.7	63.4	64.0
Medium Trucks:	57.4	56.7	50.3	48.8	57.3	57.5
Heavy Trucks:	58.2	57.6	48.6	49.8	58.2	58.3
Vehicle Noise:	65.4	64.5	61.4	56.7	65.3	65.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	140	302
CNEL:	32	70	150	324

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Yale Avenue  
 Road Segment: Trabuco Road to Southwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,232 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 844 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.69	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.93	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.88	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.5	62.5	60.7	54.6	63.3	63.9
Medium Trucks:	57.3	56.6	50.3	48.7	57.2	57.4
Heavy Trucks:	58.1	57.5	48.5	49.8	58.1	58.2
Vehicle Noise:	65.4	64.5	61.3	56.6	65.2	65.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	298
CNEL:	32	69	148	319

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Yale Avenue  
 Road Segment: Southwood to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,703 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 801 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.92	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.16	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.11	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.3	62.2	60.5	54.4	63.0	63.6
Medium Trucks:	57.1	56.4	50.0	48.5	56.9	57.2
Heavy Trucks:	57.9	57.3	48.3	49.5	57.9	58.0
Vehicle Noise:	65.1	64.2	61.1	56.4	64.9	65.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	62	133	287
CNEL:	31	66	143	308



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Yale Avenue  
 Road Segment: Northwood to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,106 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	751 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.39	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.0	62.0	60.2	54.1	62.8	63.4
Medium Trucks:	56.8	56.1	49.7	48.2	56.7	56.9
Heavy Trucks:	57.6	57.0	48.0	49.2	57.6	57.7
Vehicle Noise:	64.9	63.9	60.8	56.1	64.7	65.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	59	128	276
CNEL:	30	64	137	296

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Yale Avenue  
 Road Segment: Bryan Avenue to Monticello

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,826 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	728 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.33	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.57	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.52	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.9	61.8	60.1	54.0	62.6	63.2
Medium Trucks:	56.6	56.0	49.6	48.1	56.5	56.8
Heavy Trucks:	57.5	56.9	47.9	49.1	57.5	57.6
Vehicle Noise:	64.7	63.8	60.7	56.0	64.5	65.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	125	270
CNEL:	29	62	134	289

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Yale Avenue  
 Road Segment: Irvine Boulevard to Park Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,442 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	614 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.07	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.31	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.26	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.1	61.1	59.3	53.3	61.9	62.5
Medium Trucks:	55.9	55.2	48.9	47.3	55.8	56.0
Heavy Trucks:	56.7	56.2	47.1	48.4	56.7	56.9
Vehicle Noise:	64.0	63.1	59.9	55.2	63.8	64.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	112	241
CNEL:	26	56	120	258

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Yale Avenue  
 Road Segment: University Drive to Royce

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,105 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	339 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	50.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 42.814				
Road Grade:	0.0%	Medium Trucks: 42.720				
Left View:	-90.0 degrees	Heavy Trucks: 42.814				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-6.65	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	79.45	-23.89	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	84.25	-27.85	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.5	60.5	58.7	52.6	61.3	61.9
Medium Trucks:	55.3	54.6	48.2	46.7	55.2	55.4
Heavy Trucks:	56.1	55.5	46.5	47.7	56.1	56.2
Vehicle Noise:	63.4	62.4	59.3	54.6	63.2	63.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	38	81	175
CNEL:	19	40	87	188

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Yale Court  
 Road Segment: Arborwood to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,458 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	533 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-2.13	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-19.37	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-23.33	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.2	56.2	54.4	48.4	57.0	57.6
Medium Trucks:	52.1	51.4	45.0	43.5	52.0	52.2
Heavy Trucks:	55.3	54.7	45.7	46.9	55.3	55.4
Vehicle Noise:	60.1	59.3	55.4	51.5	60.0	60.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	80
CNEL:	9	18	40	85

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Ada  
 Road Segment: Barranca Parway to Marine Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,117 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,907 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 37.138				
Road Grade: 0.0%		Medium Trucks: 37.030				
Left View: -90.0 degrees		Heavy Trucks: 37.139				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.36	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-15.87	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-19.83	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.7	59.6	68.2	68.9
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9
Vehicle Noise:	70.5	69.6	66.3	61.8	70.3	70.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	85	183	395
CNEL:	42	91	196	423

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Ada  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,720 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,617 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.74	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-14.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-18.46	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.0	65.9	64.2	58.1	66.7	67.3	
Medium Trucks:	61.0	60.3	53.9	52.4	60.9	61.1	
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4	
Vehicle Noise:	69.0	68.1	64.8	60.3	68.8	69.3	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	112	242	522
CNEL:	56	120	259	559

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Enterprise to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 81,648 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 6,736 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	5.88	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-11.36	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-15.32	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.2	71.1	69.4	63.3	71.9	72.5	
Medium Trucks:	65.7	65.1	58.7	57.2	65.6	65.9	
Heavy Trucks:	66.2	65.6	56.5	57.8	66.1	66.3	
Vehicle Noise:	73.9	73.0	69.9	65.1	73.7	74.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	148	318	686	1,478
CNEL:	159	342	737	1,587



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: I-5 NB Off-Ramp to Technology Drive West

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 86,442 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 7,131 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	6.12	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-11.12	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-15.07	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.8	71.8	70.0	64.0	72.6	73.2
Medium Trucks:	66.4	65.7	59.4	57.8	66.3	66.5
Heavy Trucks:	66.8	66.2	57.2	58.4	66.8	66.9
Vehicle Noise:	74.5	73.6	70.6	65.8	74.3	74.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	156	335	723	1,557
CNEL:	167	360	776	1,673

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: East Yale Loop to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,830 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,708 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.92	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.32	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.28	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	68.8	67.0	61.0	69.6	70.2
Medium Trucks:	63.4	62.8	56.4	54.9	63.3	63.6
Heavy Trucks:	63.9	63.3	54.2	55.5	63.8	64.0
Vehicle Noise:	71.6	70.7	67.6	62.8	71.4	71.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	358	772
CNEL:	83	179	385	829

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Gateway Boulevard to Enterprise

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 49,714 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,101 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.72	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.52	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.47	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	69.0	67.2	61.1	69.8	70.4
Medium Trucks:	63.6	62.9	56.6	55.0	63.5	63.7
Heavy Trucks:	64.0	63.4	54.4	55.6	64.0	64.1
Vehicle Noise:	71.7	70.8	67.8	63.0	71.5	72.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	229	493	1,061
CNEL:	114	246	529	1,140

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Jeffrey Road to Royal Oak

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,627 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,197 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.18	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	67.9	66.1	60.1	68.7	69.3
Medium Trucks:	62.5	61.9	55.5	54.0	62.4	62.6
Heavy Trucks:	62.9	62.4	53.3	54.6	62.9	63.1
Vehicle Noise:	70.7	69.7	66.7	61.9	70.5	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	145	312	671
CNEL:	72	155	335	721

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Daimler Street to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,127 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,073 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.76	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.44	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.7	65.9	59.8	68.5	69.1
Medium Trucks:	62.3	61.6	55.2	53.7	62.2	62.4
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.4	69.5	66.4	61.7	70.2	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	139	300	646
CNEL:	69	149	322	694

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,181 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,077 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.77	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.47	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.43	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.7	65.9	59.8	68.5	69.1
Medium Trucks:	62.3	61.6	55.3	53.7	62.2	62.4
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.4	69.5	66.5	61.7	70.2	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	139	300	647
CNEL:	69	150	322	695

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: West Yale Loop to Lake Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,249 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,083 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.78	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.46	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.42	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.3	61.6	55.3	53.7	62.2	62.4
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.4	69.5	66.5	61.7	70.2	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	140	301	648
CNEL:	70	150	323	696

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Technology Drive West to Ada

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 52,629 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,342 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	69.914			
Road Grade: 0.0%	Medium Trucks:	69.857			
Left View: -90.0 degrees	Heavy Trucks:	69.914			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.97	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.27	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.23	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.6	67.9	61.8	70.4	71.0
Medium Trucks:	64.2	63.6	57.2	55.7	64.1	64.4
Heavy Trucks:	64.7	64.1	55.0	56.3	64.6	64.8
Vehicle Noise:	72.4	71.5	68.4	63.6	72.2	72.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	112	241	519	1,118
CNEL:	120	259	558	1,201



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Creek Road to East Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,987 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,061 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.73	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.51	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.46	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.9	59.8	68.4	69.0
Medium Trucks:	62.3	61.6	55.2	53.7	62.1	62.4
Heavy Trucks:	62.7	62.1	53.0	54.3	62.7	62.8
Vehicle Noise:	70.4	69.5	66.4	61.6	70.2	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	139	299	643
CNEL:	69	149	321	691

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Red Hill Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,832 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,049 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.71	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.53	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.49	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.8	59.8	68.4	69.0	
Medium Trucks:	62.2	61.6	55.2	53.7	62.1	62.3	
Heavy Trucks:	62.6	62.1	53.0	54.3	62.6	62.8	
Vehicle Noise:	70.4	69.4	66.4	61.6	70.2	70.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	138	297	641
CNEL:	69	148	319	688

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Lake Road to Creek Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,753 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,960 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.51	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.73	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.68	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.6	59.6	68.2	68.8
Medium Trucks:	62.0	61.4	55.0	53.5	61.9	62.2
Heavy Trucks:	62.5	61.9	52.8	54.1	62.4	62.6
Vehicle Noise:	70.2	69.2	66.2	61.4	70.0	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	134	289	622
CNEL:	67	144	310	668

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Telemetry to Banting

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,832 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,966 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.71	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.67	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.4	65.7	59.6	68.2	68.8	
Medium Trucks:	62.1	61.4	55.0	53.5	61.9	62.2	
Heavy Trucks:	62.5	61.9	52.8	54.1	62.4	62.6	
Vehicle Noise:	70.2	69.3	66.2	61.4	70.0	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	134	289	623
CNEL:	67	144	311	670

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Irvine Boulevard to Commercentre

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 38,199 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,151 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.58	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.66	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.62	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.9	67.8	66.1	60.0	68.6	69.2	
Medium Trucks:	62.4	61.8	55.4	53.9	62.3	62.6	
Heavy Trucks:	62.9	62.3	53.2	54.5	62.8	63.0	
Vehicle Noise:	70.6	69.7	66.6	61.8	70.4	70.8	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	192	413	890
CNEL:	96	206	444	957

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Jenner to Telemetry

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,455 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,935 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.46	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.78	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.74	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.4	65.6	59.5	68.2	68.8	
Medium Trucks:	62.0	61.3	54.9	53.4	61.9	62.1	
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5	
Vehicle Noise:	70.1	69.2	66.2	61.4	69.9	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	286	617
CNEL:	66	143	308	663

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Irvine Center Drive to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 42,235 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,484 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.01	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.23	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.18	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.3	68.3	66.5	60.4	69.1	69.7	
Medium Trucks:	62.9	62.2	55.8	54.3	62.8	63.0	
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4	
Vehicle Noise:	71.0	70.1	67.1	62.3	70.8	71.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	95	205	442	952
CNEL:	102	220	475	1,023

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Sand Canyon Avenue to Hospital

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 37,175 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,067 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.46	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.78	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.74	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.7	70.7	68.9	62.8	71.5	72.1
Medium Trucks:	65.3	64.6	58.3	56.7	65.2	65.4
Heavy Trucks:	65.7	65.1	56.1	57.3	65.7	65.8
Vehicle Noise:	73.4	72.5	69.5	64.7	73.2	73.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	212	456	983
CNEL:	106	227	490	1,056



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Laguna Canyon Road to Jenner

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,971 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,895 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.83	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.3	65.5	59.4	68.1	68.7
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	282	608
CNEL:	65	141	303	653

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative Project Name: Irvine GP  
 Road Name: Alton Parkway Job Number: 15937  
 Road Segment: Technology Drive East to Barranca Pkwy/Muirlands Blvd

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 41,733 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,443 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.96	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.28	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.23	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.2	66.4	60.4	69.0	69.6
Medium Trucks:	62.8	62.2	55.8	54.3	62.7	62.9
Heavy Trucks:	63.2	62.7	53.6	54.9	63.2	63.4
Vehicle Noise:	71.0	70.0	67.0	62.2	70.8	71.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	94	203	438	945
CNEL:	101	219	471	1,015

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Royal Oak to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,072 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,821 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.04	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.00	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.1	65.3	59.3	67.9	68.5
Medium Trucks:	61.7	61.0	54.7	53.1	61.6	61.8
Heavy Trucks:	62.1	61.5	52.5	53.8	62.1	62.2
Vehicle Noise:	69.8	68.9	65.9	61.1	69.6	70.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	128	275	592
CNEL:	64	137	295	636

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Banting to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,772 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,796 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.13	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.06	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.3	59.2	67.8	68.4
Medium Trucks:	61.7	61.0	54.6	53.1	61.5	61.8
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	69.8	68.9	65.8	61.0	69.6	70.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	126	272	587
CNEL:	63	136	293	631

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative Project Name: Irvine GP  
 Road Name: Alton Parkway Job Number: 15937  
 Road Segment: Barranca Pkwy/Muirlands Blvd to Jeronimo Road

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,264 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,239 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.70	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.54	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.50	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	67.9	66.2	60.1	68.7	69.3
Medium Trucks:	62.6	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	70.7	69.8	66.7	62.0	70.5	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	195	421	907
CNEL:	97	210	452	974

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Ada to Technology Drive East

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,976 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,051 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.44	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.80	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.76	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.3	61.6	55.3	53.7	62.2	62.4
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.4	69.5	66.5	61.7	70.2	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	188	404	871
CNEL:	94	202	435	936

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,473 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,689 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.13	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.37	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.33	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.8	65.0	58.9	67.6	68.2
Medium Trucks:	61.4	60.7	54.4	52.8	61.3	61.5
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	69.5	68.6	65.6	60.8	69.3	69.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	121	261	563
CNEL:	61	130	281	605

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Jeronimo Road to Hughes

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,700 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,533 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.63	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.61	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.57	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.9	65.1	59.0	67.7	68.3
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	69.6	68.7	65.7	60.9	69.4	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	357	770
CNEL:	83	178	384	827



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Hughes to Morgan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,715 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,451 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.49	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.75	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.71	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	65.0	58.9	67.5	68.1
Medium Trucks:	61.4	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	69.5	68.6	65.5	60.7	69.3	69.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	350	753
CNEL:	81	174	376	809

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Morgan to Toledo Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,439 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,099 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.81	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.43	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.38	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.1	66.1	64.3	58.2	66.9	67.5	
Medium Trucks:	60.7	60.0	53.6	52.1	60.6	60.8	
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2	
Vehicle Noise:	68.8	67.9	64.9	60.1	68.6	69.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	146	315	679
CNEL:	73	157	339	730

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: San Marino to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,151 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,157 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.93	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.31	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.26	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.2	64.4	58.4	67.0	67.6
Medium Trucks:	60.8	60.1	53.8	52.2	60.7	60.9
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	68.9	68.0	65.0	60.2	68.7	69.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	149	321	692
CNEL:	74	160	345	743

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Jamboree Road to Murphy Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,387 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,177 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.97	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.27	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.22	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.3	66.2	64.4	58.4	67.0	67.6	
Medium Trucks:	60.8	60.2	53.8	52.3	60.7	61.0	
Heavy Trucks:	61.3	60.7	51.6	52.9	61.2	61.4	
Vehicle Noise:	69.0	68.1	65.0	60.2	68.8	69.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	150	323	696
CNEL:	75	161	347	748

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Hospital to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,755 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,125 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 47.329				
Road Grade: 0.0%	Medium Trucks: 47.244				
Left View: -90.0 degrees	Heavy Trucks: 47.329				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.86	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.37	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.33	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.1	69.1	67.3	61.2	69.9	70.5	
Medium Trucks:	63.7	63.0	56.7	55.1	63.6	63.8	
Heavy Trucks:	64.1	63.5	54.5	55.7	64.1	64.2	
Vehicle Noise:	71.8	70.9	67.9	63.1	71.6	72.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	357	769
CNEL:	83	178	384	827

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,481 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,020 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 47.329				
Road Grade: 0.0%	Medium Trucks: 47.244				
Left View: -90.0 degrees	Heavy Trucks: 47.329				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.64	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.59	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.55	0.25	-1.20	-5.34	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.9	68.8	67.1	61.0	69.6	70.2	
Medium Trucks:	63.5	62.8	56.4	54.9	63.4	63.6	
Heavy Trucks:	63.9	63.3	54.3	55.5	63.9	64.0	
Vehicle Noise:	71.6	70.7	67.6	62.9	71.4	71.9	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	345	744
CNEL:	80	172	371	799

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Murphy Avenue to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,087 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,070 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.75	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.49	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.44	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.0	64.2	58.2	66.8	67.4
Medium Trucks:	60.6	59.9	53.6	52.0	60.5	60.7
Heavy Trucks:	61.0	60.5	51.4	52.7	61.0	61.1
Vehicle Noise:	68.8	67.8	64.8	60.0	68.6	69.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	145	312	673
CNEL:	72	156	335	723

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Foster to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,532 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,941 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.47	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.77	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.72	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.3	59.7	53.3	51.8	60.2	60.5
Heavy Trucks:	60.8	60.2	51.1	52.4	60.7	60.9
Vehicle Noise:	68.5	67.6	64.5	59.7	68.3	68.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	139	299	645
CNEL:	69	149	321	693



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Fairbanks to Foster

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,575 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,862 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.29	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.95	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.90	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.5	63.8	57.7	66.3	66.9
Medium Trucks:	60.2	59.5	53.1	51.6	60.0	60.3
Heavy Trucks:	60.6	60.0	51.0	52.2	60.6	60.7
Vehicle Noise:	68.3	67.4	64.3	59.5	68.1	68.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	135	291	627
CNEL:	67	145	313	674

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Toledo Way to Bertea

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,840 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,802 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.05	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.4	63.6	57.6	66.2	66.8
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1
Heavy Trucks:	60.4	59.8	50.8	52.1	60.4	60.5
Vehicle Noise:	68.1	67.2	64.2	59.4	68.0	68.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	285	613
CNEL:	66	142	306	659

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Pacifica to Meridian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,780 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,962 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 47.329				
Road Grade: 0.0%	Medium Trucks: 47.244				
Left View: -90.0 degrees	Heavy Trucks: 47.329				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.52	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.72	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.68	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	66.9	60.9	69.5	70.1
Medium Trucks:	63.3	62.7	56.3	54.8	63.2	63.5
Heavy Trucks:	63.8	63.2	54.1	55.4	63.7	63.9
Vehicle Noise:	71.5	70.6	67.5	62.7	71.3	71.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	339	730
CNEL:	78	169	364	784

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Bertea to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,315 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,758 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.04	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.20	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.15	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0
Heavy Trucks:	60.3	59.7	50.7	52.0	60.3	60.4
Vehicle Noise:	68.0	67.1	64.1	59.3	67.8	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	280	604
CNEL:	65	140	301	648

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Meridian to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,241 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,752 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.21	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.17	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.3	63.5	57.4	66.1	66.7
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	68.0	67.1	64.1	59.3	67.8	68.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	279	602
CNEL:	65	139	300	647

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Paseo Westpark to San Marino

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,248 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,753 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.21	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.17	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	68.0	67.1	64.1	59.3	67.8	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	280	602
CNEL:	65	139	300	647

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,161 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,581 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.42	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.66	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.61	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.8	63.1	57.0	65.6	66.2
Medium Trucks:	59.4	58.8	52.4	50.9	59.3	59.6
Heavy Trucks:	59.9	59.3	50.2	51.5	59.8	60.0
Vehicle Noise:	67.6	66.7	63.6	58.8	67.4	67.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	121	261	562
CNEL:	60	130	280	604

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Astor  
 Road Segment: Lynx to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,650 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 37.138				
Road Grade: 0.0%		Medium Trucks: 37.030				
Left View: -90.0 degrees		Heavy Trucks: 37.139				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	1.98	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-15.25	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-19.21	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.3	61.5	55.5	64.1	64.7
Medium Trucks:	58.9	58.2	51.8	50.3	58.8	59.0
Heavy Trucks:	61.3	60.8	51.7	53.0	61.3	61.5
Vehicle Noise:	66.9	66.0	62.4	58.2	66.7	67.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	49	105	226
CNEL:	24	52	112	241



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Astor  
 Road Segment: Cadence to Lynx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,144 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,249 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 37.138				
Road Grade: 0.0%	Medium Trucks: 37.030				
Left View: -90.0 degrees	Heavy Trucks: 37.139				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	0.78	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-16.46	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-20.42	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.2	62.1	60.3	54.3	62.9	63.5
Medium Trucks:	57.7	57.0	50.6	49.1	57.6	57.8
Heavy Trucks:	60.1	59.6	50.5	51.8	60.1	60.2
Vehicle Noise:	65.7	64.8	61.2	57.0	65.5	65.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	40	87	188
CNEL:	20	43	93	200

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bake Parkway  
 Road Segment: I-5 NB Off-Ramp to Rockfield Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 98,423 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 8,120 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 56.593				
Road Grade: 0.0%	Medium Trucks: 56.522				
Left View: -90.0 degrees	Heavy Trucks: 56.593				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	6.69	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-10.55	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-14.51	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	74.8	73.7	72.0	65.9	74.5	75.1	
Medium Trucks:	68.3	67.7	61.3	59.8	68.2	68.5	
Heavy Trucks:	68.8	68.2	59.1	60.4	68.7	68.9	
Vehicle Noise:	76.5	75.6	72.5	67.7	76.3	76.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	262	565	1,217	2,621
CNEL:	282	607	1,307	2,816

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bake Parkway  
 Road Segment: Muirlands Boulevard to Jeronimo Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 63,562 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,244 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.79	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-12.45	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-16.41	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.1	70.0	68.3	62.2	70.8	71.4	
Medium Trucks:	64.7	64.0	57.6	56.1	64.5	64.8	
Heavy Trucks:	65.1	64.5	55.5	56.7	65.1	65.2	
Vehicle Noise:	72.8	71.9	68.8	64.0	72.6	73.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	125	269	580	1,250
CNEL:	134	289	624	1,343

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bake Parkway  
 Road Segment: Rockfield Boulevard to Muirlands Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 67,848 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,597 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	56.593			
Road Grade: 0.0%	Medium Trucks:	56.522			
Left View: -90.0 degrees	Heavy Trucks:	56.593			
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	5.07	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-12.17	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-16.12	-0.91	-1.20	-5.16	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.2	72.1	70.3	64.3	72.9	73.5	
Medium Trucks:	66.7	66.1	59.7	58.2	66.6	66.8	
Heavy Trucks:	67.1	66.6	57.5	58.8	67.1	67.3	
Vehicle Noise:	74.9	73.9	70.9	66.1	74.7	75.1	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	205	441	949	2,046
CNEL:	220	474	1,020	2,198

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bake Parkway  
 Road Segment: Jeronimo Road to Toledo Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 51,605 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,257 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.88	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.36	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.31	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	69.1	67.4	61.3	69.9	70.5
Medium Trucks:	63.8	63.1	56.7	55.2	63.6	63.9
Heavy Trucks:	64.2	63.6	54.5	55.8	64.2	64.3
Vehicle Noise:	71.9	71.0	67.9	63.1	71.7	72.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	109	234	505	1,088
CNEL:	117	252	543	1,169

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bake Parkway  
 Road Segment: Toledo Way to Cromwell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,916 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,871 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.47	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.77	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.72	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	66.9	60.9	69.5	70.1
Medium Trucks:	63.3	62.7	56.3	54.8	63.2	63.5
Heavy Trucks:	63.8	63.2	54.1	55.4	63.7	63.9
Vehicle Noise:	71.5	70.6	67.5	62.7	71.3	71.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	102	220	474	1,021
CNEL:	110	236	509	1,097

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bake Parkway  
 Road Segment: Cromwell to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,418 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,747 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.33	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.91	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.87	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.6	68.6	66.8	60.8	69.4	70.0	
Medium Trucks:	63.2	62.5	56.2	54.6	63.1	63.3	
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7	
Vehicle Noise:	71.3	70.4	67.4	62.6	71.1	71.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	215	464	999
CNEL:	107	231	498	1,074

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bake Parkway  
 Road Segment: Research Drive to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,328 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,420 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.43	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.81	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.77	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.7	66.7	64.9	58.9	67.5	68.1	
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4	
Heavy Trucks:	61.7	61.1	52.1	53.3	61.7	61.8	
Vehicle Noise:	69.4	68.5	65.5	60.7	69.2	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	347	747
CNEL:	80	173	372	802



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bake Parkway  
 Road Segment: Irvine Center Drive to Research Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,154 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 838 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.18	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-20.42	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-24.37	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.1	62.1	60.3	54.2	62.9	63.5
Medium Trucks:	56.7	56.0	49.7	48.1	56.6	56.8
Heavy Trucks:	57.1	56.5	47.5	48.7	57.1	57.2
Vehicle Noise:	64.8	63.9	60.9	56.1	64.6	65.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	171	368
CNEL:	40	85	184	396

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bake Parkway  
 Road Segment: Lake Forest Drive to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,404 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 611 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.55	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-21.79	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-25.74	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.8	60.7	58.9	52.9	61.5	62.1
Medium Trucks:	55.3	54.6	48.3	46.7	55.2	55.4
Heavy Trucks:	55.7	55.2	46.1	47.4	55.7	55.8
Vehicle Noise:	63.5	62.5	59.5	54.7	63.3	63.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	298
CNEL:	32	69	149	320

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Banting  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,549 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 458 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-4.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-21.49	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-25.45	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	57.8	56.7	55.0	48.9	57.5	58.1	
Medium Trucks:	52.0	51.3	45.0	43.4	51.9	52.1	
Heavy Trucks:	53.9	53.3	44.3	45.5	53.9	54.0	
Vehicle Noise:	60.0	59.1	55.7	51.3	59.8	60.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	13	28	61	132
CNEL:	14	30	65	141

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Pacifica to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,249 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,991 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.93	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-15.30	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.26	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.4	68.6	62.6	71.2	71.8
Medium Trucks:	64.9	64.2	57.8	56.3	64.7	65.0
Heavy Trucks:	64.9	64.3	55.3	56.5	64.9	65.0
Vehicle Noise:	73.0	72.1	69.2	64.3	72.8	73.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	208	449	967
CNEL:	104	224	483	1,041

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Banting to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,424 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,675 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.45	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-15.79	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.74	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.0	69.9	68.2	62.1	70.7	71.3
Medium Trucks:	64.4	63.7	57.3	55.8	64.3	64.5
Heavy Trucks:	64.4	63.8	54.8	56.0	64.4	64.5
Vehicle Noise:	72.6	71.6	68.7	63.8	72.4	72.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	194	417	898
CNEL:	97	208	448	966

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: I-5 HOV Ramp to Technology Drive West

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,665 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,777 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.61	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-15.62	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.58	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	70.1	68.3	62.3	70.9	71.5
Medium Trucks:	64.5	63.9	57.5	56.0	64.4	64.7
Heavy Trucks:	64.6	64.0	54.9	56.2	64.6	64.7
Vehicle Noise:	72.7	71.8	68.8	64.0	72.5	73.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	427	921
CNEL:	99	213	460	991

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Technology Drive West to Ada

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,494 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,598 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-15.91	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.87	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.9	69.8	68.0	62.0	70.6	71.2	
Medium Trucks:	64.3	63.6	57.2	55.7	64.1	64.4	
Heavy Trucks:	64.3	63.7	54.7	55.9	64.3	64.4	
Vehicle Noise:	72.4	71.5	68.6	63.7	72.2	72.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	190	409	881
CNEL:	95	204	440	948

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Irvine Center Drive to I-5 HOV Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,886 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,548 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.00	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.95	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.7	67.9	61.9	70.5	71.1
Medium Trucks:	64.2	63.5	57.1	55.6	64.0	64.3
Heavy Trucks:	64.2	63.6	54.6	55.8	64.2	64.3
Vehicle Noise:	72.4	71.4	68.5	63.6	72.2	72.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	187	404	870
CNEL:	94	202	434	935



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,530 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,354 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.90	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.30	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	69.4	67.6	61.5	70.2	70.8
Medium Trucks:	63.8	63.1	56.8	55.2	63.7	63.9
Heavy Trucks:	63.9	63.3	54.2	55.5	63.8	64.0
Vehicle Noise:	72.0	71.1	68.1	63.3	71.8	72.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	178	383	825
CNEL:	89	191	412	887

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: East Yale Loop to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,336 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,338 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.87	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.37	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.33	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	69.3	67.6	61.5	70.1	70.7
Medium Trucks:	63.8	63.1	56.8	55.2	63.7	63.9
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9
Vehicle Noise:	72.0	71.1	68.1	63.2	71.8	72.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	381	821
CNEL:	88	190	410	883

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: West Yale Loop to Lake Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,246 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,248 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.70	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.54	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.50	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	69.2	67.4	61.3	70.0	70.6
Medium Trucks:	63.6	62.9	56.6	55.0	63.5	63.7
Heavy Trucks:	63.7	63.1	54.0	55.3	63.6	63.8
Vehicle Noise:	71.8	70.9	67.9	63.1	71.6	72.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	172	371	800
CNEL:	86	185	399	860

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Ada to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,756 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,290 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.78	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.46	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.42	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.2	67.5	61.4	70.0	70.7
Medium Trucks:	63.7	63.0	56.7	55.1	63.6	63.8
Heavy Trucks:	63.7	63.1	54.1	55.4	63.7	63.8
Vehicle Noise:	71.9	71.0	68.0	63.1	71.7	72.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	376	810
CNEL:	87	188	404	871

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Lake Road to Creek Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,599 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,112 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.42	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.81	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.77	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	68.9	67.1	61.1	69.7	70.3
Medium Trucks:	63.4	62.7	56.3	54.8	63.2	63.5
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	71.5	70.6	67.7	62.8	71.3	71.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	356	767
CNEL:	83	178	383	825

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Red Hill Avenue to Armstrong Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 49,503 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,084 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.29	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.95	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.91	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.0	71.9	70.1	64.1	72.7	73.3	
Medium Trucks:	66.4	65.7	59.3	57.8	66.2	66.5	
Heavy Trucks:	66.4	65.8	56.8	58.0	66.4	66.5	
Vehicle Noise:	74.5	73.6	70.7	65.8	74.3	74.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	195	419	903	1,946
CNEL:	209	451	972	2,093

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Discovery/Herchel to Banting

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,817 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,047 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.90	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.8	67.0	60.9	69.6	70.2
Medium Trucks:	63.2	62.5	56.2	54.6	63.1	63.3
Heavy Trucks:	63.2	62.7	53.6	54.9	63.2	63.4
Vehicle Noise:	71.4	70.5	67.5	62.6	71.2	71.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	349	752
CNEL:	81	174	375	808

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Lyon to East Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,364 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,010 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.03	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.98	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.7	66.9	60.9	69.5	70.1
Medium Trucks:	63.1	62.5	56.1	54.6	63.0	63.3
Heavy Trucks:	63.2	62.6	53.5	54.8	63.1	63.3
Vehicle Noise:	71.3	70.4	67.4	62.6	71.1	71.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	345	742
CNEL:	80	172	371	799



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Creek Road to Lyon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,971 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,978 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.06	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.8	60.8	69.4	70.0
Medium Trucks:	63.1	62.4	56.0	54.5	62.9	63.2
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	71.3	70.3	67.4	62.5	71.1	71.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	158	341	734
CNEL:	79	170	367	790

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 42,568 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,512 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.63	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.61	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.56	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.9	69.9	68.1	62.0	70.7	71.3
Medium Trucks:	64.3	63.6	57.3	55.7	64.2	64.4
Heavy Trucks:	64.3	63.8	54.7	56.0	64.3	64.5
Vehicle Noise:	72.5	71.6	68.6	63.7	72.3	72.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	245	529	1,139
CNEL:	123	264	569	1,226

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Sand Canyon Avenue to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,968 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,812 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.43	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.2	66.5	60.4	69.0	69.6
Medium Trucks:	62.7	62.0	55.7	54.1	62.6	62.8
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.9	69.9	67.0	62.1	70.7	71.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	149	322	693
CNEL:	75	161	346	745

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Armstrong Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,050 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,304 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.37	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.87	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.83	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.6	67.8	61.8	70.4	71.0
Medium Trucks:	64.1	63.4	57.0	55.5	63.9	64.2
Heavy Trucks:	64.1	63.5	54.5	55.7	64.1	64.2
Vehicle Noise:	72.2	71.3	68.4	63.5	72.0	72.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	109	236	508	1,094
CNEL:	118	254	546	1,177

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,406 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,683 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.75	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	67.9	66.1	60.1	68.7	69.3
Medium Trucks:	62.4	61.7	55.3	53.8	62.2	62.5
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	70.6	69.6	66.7	61.8	70.4	70.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	142	306	660
CNEL:	71	153	329	710

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Jamboree Road to Construction Circle

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,325 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,667 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.44	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.80	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.76	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.3	66.5	60.4	69.1	69.7
Medium Trucks:	62.7	62.0	55.7	54.1	62.6	62.8
Heavy Trucks:	62.7	62.2	53.1	54.4	62.7	62.9
Vehicle Noise:	70.9	70.0	67.0	62.1	70.7	71.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	201	434	935
CNEL:	101	217	467	1,006

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Santa Rosa to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,498 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,599 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.32	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.91	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.87	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.1	66.4	60.3	68.9	69.6
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	62.6	62.0	53.0	54.3	62.6	62.7
Vehicle Noise:	70.8	69.9	66.9	62.0	70.6	71.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	426	919
CNEL:	99	213	459	988

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: FedEx to Discovery/Herchel

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,158 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,581 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.83	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.03	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.9	59.8	68.4	69.0	
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2	
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2	
Vehicle Noise:	70.3	69.4	66.4	61.5	70.1	70.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	294	632
CNEL:	68	147	316	680



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Jeffrey Road to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,899 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,559 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.89	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.09	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.6	67.6	65.8	59.8	68.4	69.0	
Medium Trucks:	62.0	61.4	55.0	53.5	61.9	62.1	
Heavy Trucks:	62.1	61.5	52.4	53.7	62.0	62.2	
Vehicle Noise:	70.2	69.3	66.3	61.5	70.0	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	135	291	627
CNEL:	67	145	313	674

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Laguna Canyon Road to FedEx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 18,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,534 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.96	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.20	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.16	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.7	59.7	68.3	68.9
Medium Trucks:	62.0	61.3	54.9	53.4	61.8	62.1
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	70.2	69.2	66.3	61.4	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	134	288	620
CNEL:	67	144	310	667

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Pullman Street to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,853 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,123 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.12	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-15.12	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-19.07	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.8	70.7	69.0	62.9	71.5	72.1	
Medium Trucks:	65.2	64.5	58.2	56.6	65.1	65.3	
Heavy Trucks:	65.2	64.6	55.6	56.8	65.2	65.3	
Vehicle Noise:	73.4	72.4	69.5	64.6	73.2	73.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	163	351	755	1,627
CNEL:	175	377	812	1,750

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Construction Circle to Fire Station

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,571 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,357 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.90	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.34	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.29	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.8	67.7	66.0	59.9	68.5	69.1	
Medium Trucks:	62.2	61.5	55.1	53.6	62.1	62.3	
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3	
Vehicle Noise:	70.4	69.4	66.5	61.6	70.2	70.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	400	861
CNEL:	93	200	430	926

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Fire Station to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,571 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,357 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.90	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.34	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.29	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	66.0	59.9	68.5	69.1
Medium Trucks:	62.2	61.5	55.1	53.6	62.1	62.3
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	70.4	69.4	66.5	61.6	70.2	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	400	861
CNEL:	93	200	430	926

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Paseo Westpark to Santa Rosa

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,602 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,360 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.91	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.33	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.29	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.8	67.7	66.0	59.9	68.5	69.1	
Medium Trucks:	62.2	61.5	55.1	53.6	62.1	62.3	
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3	
Vehicle Noise:	70.4	69.4	66.5	61.6	70.2	70.6	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	186	400	862
CNEL:	93	200	430	927

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,663 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,200 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.60	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.64	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.59	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.7	59.6	68.2	68.8
Medium Trucks:	61.9	61.2	54.8	53.3	61.8	62.0
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	70.1	69.1	66.2	61.3	69.9	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	382	822
CNEL:	88	191	411	885

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Bay Tree  
 Road Segment: Trabuco Road to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,681 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	221 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-7.41	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-24.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-28.61	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.6	53.6	51.8	45.8	54.4	55.0
Medium Trucks:	48.9	48.2	41.8	40.3	48.7	49.0
Heavy Trucks:	50.7	50.1	41.1	42.3	50.7	50.8
Vehicle Noise:	56.9	56.0	52.6	48.2	56.7	57.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	38	81
CNEL:	9	19	40	87



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Beacon  
 Road Segment: Ridge Valley to Benchmark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,641 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 300 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-5.41	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-22.65	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-26.61	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	57.0	55.9	54.1	48.1	56.7	57.3	
Medium Trucks:	51.5	50.8	44.4	42.9	51.4	51.6	
Heavy Trucks:	53.9	53.4	44.3	45.6	53.9	54.1	
Vehicle Noise:	59.5	58.6	55.0	50.8	59.3	59.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	16	34	73
CNEL:	8	17	36	77

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Benchmark (LN Street)  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,729 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 143 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-8.65	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-25.89	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-29.84	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.7	52.7	50.9	44.9	53.5	54.1
Medium Trucks:	48.2	47.6	41.2	39.7	48.1	48.4
Heavy Trucks:	50.7	50.1	41.1	42.3	50.7	50.8
Vehicle Noise:	56.2	55.4	51.7	47.6	56.1	56.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	10	21	44
CNEL:	5	10	22	47

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Bison Avenue  
 Road Segment: SR-73 NB Off-Ramp to California Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,007 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,146 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.36	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.83	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.5	64.7	58.7	67.3	67.9
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	69.4	68.5	65.4	60.7	69.2	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	119	257	555
CNEL:	59	128	276	595

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bonita Canyon Drive  
 Road Segment: MacArthur Boulevard to SR-73

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 30,956 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,554 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 75.0 feet Centerline Dist. to Observer: 75.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 70.413 Medium Trucks: 70.356 Heavy Trucks: 70.413																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.66	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.57	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-19.53	-2.33	-1.20	-5.25	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.3	65.5	59.4	68.1	68.7
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	339	731
CNEL:	79	169	364	785

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Bonita Canyon Drive  
 Road Segment: Turtle Ridge to Shady Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,905 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,725 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.04	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.28	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-21.24	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.6	63.8	57.7	66.4	67.0
Medium Trucks:	60.2	59.5	53.2	51.6	60.1	60.3
Heavy Trucks:	60.6	60.0	51.0	52.2	60.6	60.7
Vehicle Noise:	68.3	67.4	64.4	59.6	68.1	68.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	121	261	562
CNEL:	60	130	281	604

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bonita Canyon Drive  
 Road Segment: Newport Coast Drive to Turtle Ridge

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,301 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,592 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 75.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	70.413			
Road Grade: 0.0%	Medium Trucks:	70.356			
Left View: -90.0 degrees	Heavy Trucks:	70.413			
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.39	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.63	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-21.58	-2.33	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.3	65.2	63.5	57.4	66.0	66.6	
Medium Trucks:	59.8	59.2	52.8	51.3	59.7	60.0	
Heavy Trucks:	60.3	59.7	50.6	51.9	60.2	60.4	
Vehicle Noise:	68.0	67.1	64.0	59.2	67.8	68.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	115	248	533
CNEL:	57	123	266	573

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Bonita Canyon Drive  
 Road Segment: SR-73 NB Off-Ramp to Newport Coast Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,474 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,524 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.58	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.82	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-21.77	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	65.0	63.3	57.2	65.8	66.4
Medium Trucks:	59.7	59.0	52.6	51.1	59.5	59.8
Heavy Trucks:	60.1	59.5	50.4	51.7	60.1	60.2
Vehicle Noise:	67.8	66.9	63.8	59.0	67.6	68.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	112	240	518
CNEL:	56	120	258	557

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bosque  
 Road Segment: Cadence to Great Park Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,932 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,067 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 37.138				
Road Grade: 0.0%	Medium Trucks: 37.030				
Left View: -90.0 degrees	Heavy Trucks: 37.139				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	0.09	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-17.15	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-21.10	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.5	61.4	59.6	53.6	62.2	62.8
Medium Trucks:	57.0	56.3	50.0	48.4	56.9	57.1
Heavy Trucks:	59.5	58.9	49.8	51.1	59.4	59.6
Vehicle Noise:	65.0	64.1	60.5	56.3	64.8	65.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	36	79	169
CNEL:	18	39	84	180



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bosque  
 Road Segment: Irvine Boulevard to Benchmark (LN Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,882 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 733 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-1.54	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-18.78	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-22.73	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.8	59.8	58.0	52.0	60.6	61.2	
Medium Trucks:	55.4	54.7	48.3	46.8	55.2	55.5	
Heavy Trucks:	57.8	57.2	48.2	49.4	57.8	57.9	
Vehicle Noise:	63.4	62.5	58.8	54.7	63.2	63.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	13	28	61	132
CNEL:	14	30	65	140

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bosque  
 Road Segment: Benchmark to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,107 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 669 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-1.94	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-19.18	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-23.13	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.4	59.4	57.6	51.6	60.2	60.8
Medium Trucks:	55.0	54.3	47.9	46.4	54.8	55.1
Heavy Trucks:	57.4	56.8	47.8	49.1	57.4	57.5
Vehicle Noise:	63.0	62.1	58.5	54.3	62.8	63.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	27	58	124
CNEL:	13	28	61	132

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bosque  
 Road Segment: Great Park Boulevard to Beacon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,843 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 152 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-8.37	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-25.61	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-29.56	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	54.0	53.0	51.2	45.1	53.8	54.4	
Medium Trucks:	48.5	47.9	41.5	39.9	48.4	48.6	
Heavy Trucks:	51.0	50.4	41.4	42.6	51.0	51.1	
Vehicle Noise:	56.5	55.7	52.0	47.8	56.4	56.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	10	21	46
CNEL:	5	11	23	49

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Bosque  
 Road Segment: Beacon to S 5th Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1,609 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	133 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-8.96	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-26.20	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-30.15	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.4	52.4	50.6	44.5	53.2	53.8
Medium Trucks:	47.9	47.3	40.9	39.4	47.8	48.0
Heavy Trucks:	50.4	49.8	40.8	42.0	50.4	50.5
Vehicle Noise:	55.9	55.1	51.4	47.2	55.8	56.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	20	42
CNEL:	4	10	21	45

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bryan Avenue  
 Road Segment: Jamboree Road to Market Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,671 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,870 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.77	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.47	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.43	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.0	65.9	64.2	58.1	66.7	67.3	
Medium Trucks:	60.7	60.1	53.7	52.2	60.6	60.9	
Heavy Trucks:	61.6	61.0	52.0	53.2	61.6	61.7	
Vehicle Noise:	68.8	67.9	64.8	60.1	68.6	69.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	109	235	506
CNEL:	54	117	252	543

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bryan Avenue  
 Road Segment: Market Place to El Camino Real

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,480 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,772 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.70	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.66	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	61.3	60.8	51.7	53.0	61.3	61.5
Vehicle Noise:	68.6	67.7	64.5	59.8	68.4	68.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	105	227	488
CNEL:	52	113	243	524

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bryan Avenue  
 Road Segment: Rubicon to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,726 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,792 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.58	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.61	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	64.0	57.9	66.5	67.1
Medium Trucks:	60.6	59.9	53.5	52.0	60.4	60.7
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5
Vehicle Noise:	68.6	67.7	64.6	59.9	68.4	68.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	106	228	492
CNEL:	53	114	245	528

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bryan Avenue  
 Road Segment: El Camino Real to Rubicon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,533 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,776 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.69	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.65	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	61.4	60.8	51.7	53.0	61.3	61.5
Vehicle Noise:	68.6	67.7	64.5	59.9	68.4	68.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	105	227	489
CNEL:	52	113	243	525



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bryan Avenue  
 Road Segment: Eastwood to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,724 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,215 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.30	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.1	64.0	62.3	56.2	64.8	65.5	
Medium Trucks:	58.9	58.2	51.8	50.3	58.7	59.0	
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8	
Vehicle Noise:	66.9	66.0	62.9	58.2	66.8	67.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	176	380
CNEL:	41	88	189	407

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Bryan Avenue  
 Road Segment: Westwood to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,412 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,106 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.51	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.75	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.71	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.7	63.6	61.9	55.8	64.4	65.0
Medium Trucks:	58.5	57.8	51.4	49.9	58.3	58.6
Heavy Trucks:	59.3	58.7	49.7	50.9	59.3	59.4
Vehicle Noise:	66.5	65.6	62.5	57.8	66.3	66.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	166	357
CNEL:	38	82	178	383

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bryan Avenue  
 Road Segment: Culver Drive to Westwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,139 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,084 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.84	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.80	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.6	61.8	55.7	64.4	65.0
Medium Trucks:	58.4	57.7	51.3	49.8	58.3	58.5
Heavy Trucks:	59.2	58.6	49.6	50.8	59.2	59.3
Vehicle Noise:	66.4	65.5	62.4	57.7	66.3	66.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	163	352
CNEL:	38	81	175	377

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bryan Avenue  
 Road Segment: Yale Avenue to Eastwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,268 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,095 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.75	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.7	63.6	61.8	55.8	64.4	65.0
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5
Heavy Trucks:	59.3	58.7	49.6	50.9	59.2	59.4
Vehicle Noise:	66.5	65.6	62.4	57.8	66.3	66.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	164	354
CNEL:	38	82	176	380

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Cadence  
 Road Segment: Pusan to Chinon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,074 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 584 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.78	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-21.02	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-24.97	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.4	62.3	60.5	54.5	63.1	63.7	
Medium Trucks:	57.4	56.7	50.3	48.8	57.2	57.5	
Heavy Trucks:	58.7	58.1	49.0	50.3	58.6	58.8	
Vehicle Noise:	65.4	64.5	61.2	56.7	65.2	65.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	83	179
CNEL:	19	41	89	192

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Cadence  
 Road Segment: Bosque to Pusan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,540 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 540 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.12	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-21.36	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-25.31	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.0	62.0	60.2	54.1	62.8	63.4
Medium Trucks:	57.0	56.3	50.0	48.4	56.9	57.1
Heavy Trucks:	58.3	57.7	48.7	49.9	58.3	58.4
Vehicle Noise:	65.0	64.1	60.9	56.3	64.8	65.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	79	170
CNEL:	18	39	85	182

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Cadence  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,864 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 401 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.40	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-22.64	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-26.60	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.7	60.7	58.9	52.9	61.5	62.1	
Medium Trucks:	55.7	55.1	48.7	47.1	55.6	55.8	
Heavy Trucks:	57.0	56.4	47.4	48.7	57.0	57.1	
Vehicle Noise:	63.7	62.9	59.6	55.0	63.6	64.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	30	65	140
CNEL:	15	32	69	149

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Cadence  
 Road Segment: Chinon to Merit

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,333 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 275 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-7.05	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-24.28	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-28.24	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.1	59.0	57.3	51.2	59.8	60.4	
Medium Trucks:	54.1	53.4	47.0	45.5	54.0	54.2	
Heavy Trucks:	55.4	54.8	45.8	47.0	55.4	55.5	
Vehicle Noise:	62.1	61.2	57.9	53.4	61.9	62.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	23	50	109
CNEL:	12	25	54	116



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Cadence  
 Road Segment: Merit to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,688 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 139 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-10.00	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-27.24	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-31.19	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	57.1	56.1	54.3	48.3	56.9	57.5	
Medium Trucks:	51.1	50.5	44.1	42.6	51.0	51.2	
Heavy Trucks:	52.4	51.8	42.8	44.1	52.4	52.5	
Vehicle Noise:	59.2	58.3	55.0	50.4	59.0	59.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	15	32	69
CNEL:	7	16	34	74

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: California Avenue  
 Road Segment: University Drive to Academy Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,650 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.74	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.46	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.0	63.9	62.2	56.1	64.7	65.3
Medium Trucks:	59.0	58.3	51.9	50.4	58.9	59.1
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	67.0	66.1	62.8	58.3	66.8	67.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	83	178	384
CNEL:	41	89	191	411

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: California Avenue  
 Road Segment: Campus Drive to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,868 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	814 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.33	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.57	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.53	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	60.9	59.1	53.0	61.7	62.3
Medium Trucks:	55.9	55.2	48.9	47.3	55.8	56.0
Heavy Trucks:	57.2	56.6	47.6	48.8	57.2	57.3
Vehicle Noise:	63.9	63.0	59.8	55.2	63.8	64.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	111	240
CNEL:	26	55	119	257

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: California Avenue  
 Road Segment: Theory to Bison Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,414 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 777 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.78	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.73	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.7	60.7	58.9	52.8	61.5	62.1	
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8	
Heavy Trucks:	57.0	56.4	47.4	48.6	57.0	57.1	
Vehicle Noise:	63.7	62.8	59.6	55.0	63.5	64.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	232
CNEL:	25	54	115	249

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Campus Drive  
 Road Segment: Carlson Avenue to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,529 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,436 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.46	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-15.78	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-19.74	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.4	70.3	68.5	62.5	71.1	71.7	
Medium Trucks:	64.9	64.3	57.9	56.4	64.8	65.1	
Heavy Trucks:	65.3	64.8	55.7	57.0	65.3	65.5	
Vehicle Noise:	73.1	72.1	69.1	64.3	72.9	73.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	167	360	777
CNEL:	83	180	387	834

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Campus Drive  
 Road Segment: University Drive to Bridge Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,395 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,673 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.86	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.33	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.8	67.0	60.9	69.6	70.2
Medium Trucks:	63.4	62.7	56.4	54.8	63.3	63.5
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9
Vehicle Noise:	71.5	70.6	67.6	62.8	71.3	71.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	165	355	765
CNEL:	82	177	381	822

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Campus Drive  
 Road Segment: Jamboree Road to Carlson Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,090 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,565 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.68	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.51	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.6	66.8	60.8	69.4	70.0
Medium Trucks:	63.2	62.5	56.2	54.6	63.1	63.3
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7
Vehicle Noise:	71.3	70.4	67.4	62.6	71.1	71.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	345	744
CNEL:	80	172	371	800

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Campus Drive  
 Road Segment: Stanford Court to Berkeley Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,465 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,266 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.09	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.05	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.3	60.2	68.8	69.4
Medium Trucks:	62.7	62.0	55.6	54.1	62.5	62.8
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	70.8	69.9	66.8	62.1	70.6	71.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	148	318	685
CNEL:	74	159	342	736



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Campus Drive  
 Road Segment: California Avenue to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,506 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,187 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos:	77.5%	12.9%	9.6%	97.42%
	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
	<b>Noise Source Elevations (in feet)</b>				
	Autos:	2.000			
	Medium Trucks:	4.000			
	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos:	57.786			
	Medium Trucks:	57.717			
	Heavy Trucks:	57.787			

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.99	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.25	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.20	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.9	67.9	66.1	60.1	68.7	69.3	
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6	
Heavy Trucks:	62.9	62.3	53.3	54.6	62.9	63.0	
Vehicle Noise:	70.6	69.7	66.7	61.9	70.4	70.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	311	669
CNEL:	72	155	334	719

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Campus Drive  
 Road Segment: Berkeley Avenue to Cornell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,170 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,747 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.18	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	66.9	65.1	59.1	67.7	68.3
Medium Trucks:	61.5	60.9	54.5	53.0	61.4	61.7
Heavy Trucks:	62.0	61.4	52.3	53.6	61.9	62.1
Vehicle Noise:	69.7	68.7	65.7	60.9	69.5	69.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	124	267	576
CNEL:	62	133	287	619

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Campus Drive  
 Road Segment: Martin to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,979 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,483 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.70	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.93	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.89	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.3	66.2	64.4	58.4	67.0	67.6	
Medium Trucks:	60.8	60.2	53.8	52.2	60.7	60.9	
Heavy Trucks:	61.2	60.7	51.6	52.9	61.2	61.4	
Vehicle Noise:	69.0	68.0	65.0	60.2	68.8	69.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	111	240	517
CNEL:	55	120	258	555

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative Project Name: Irvine GP  
 Road Name: Campus Drive Job Number: 15937  
 Road Segment: Culver Drive to Paseo Montoya (Turtle Rock Drive)

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,071 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,326 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos:	77.5%	12.9%	9.6%	97.42%
	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
	<b>Noise Source Elevations (in feet)</b>				
	Autos:	2.000			
	Medium Trucks:	4.000			
	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos:	57.786			
	Medium Trucks:	57.717			
	Heavy Trucks:	57.787			

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.42	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.38	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.3	59.7	53.3	51.8	60.2	60.5
Heavy Trucks:	60.8	60.2	51.1	52.4	60.7	60.9
Vehicle Noise:	68.5	67.6	64.5	59.7	68.3	68.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	222	479
CNEL:	52	111	239	515

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Campus Drive  
 Road Segment: Von Karman Avenue to Teller Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,306 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,263 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.40	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.63	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.59	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.6	65.5	63.7	57.7	66.3	66.9	
Medium Trucks:	60.1	59.5	53.1	51.5	60.0	60.2	
Heavy Trucks:	60.5	60.0	50.9	52.2	60.5	60.7	
Vehicle Noise:	68.3	67.3	64.3	59.5	68.1	68.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	100	215	464
CNEL:	50	107	231	499

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Campus Drive  
 Road Segment: MacArthur Boulevard to Martin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,566 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,202 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.61	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.85	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.80	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0
Heavy Trucks:	60.3	59.7	50.7	52.0	60.3	60.4
Vehicle Noise:	68.0	67.1	64.1	59.3	67.8	68.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	97	208	449
CNEL:	48	104	224	482

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Campus Drive  
 Road Segment: Teller Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,374 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,021 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.51	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.6	62.8	56.8	65.4	66.0
Medium Trucks:	59.2	58.5	52.2	50.6	59.1	59.3
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7
Vehicle Noise:	67.3	66.4	63.4	58.6	67.1	67.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	87	187	403
CNEL:	43	93	201	433

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Carlson Avenue  
 Road Segment: Michelson Drive to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,352 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,102 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.99	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.18	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.1	57.1	65.7	66.3
Medium Trucks:	59.5	58.9	52.5	51.0	59.4	59.6
Heavy Trucks:	59.9	59.4	50.3	51.6	59.9	60.1
Vehicle Noise:	67.7	66.7	63.7	58.9	67.5	67.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	91	197	424
CNEL:	46	98	211	455



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Chinon  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,475 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 369 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-3.73	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-20.96	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-24.92	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	55.6	54.6	52.8	46.8	55.4	56.0	
Medium Trucks:	50.5	49.8	43.5	41.9	50.4	50.6	
Heavy Trucks:	53.7	53.1	44.1	45.3	53.7	53.8	
Vehicle Noise:	58.5	57.7	53.8	49.9	58.4	58.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	14	29	63
CNEL:	7	14	31	67

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Creek Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,892 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 404 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-3.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-20.58	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-24.53	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	53.1	52.1	50.3	44.3	52.9	53.5	
Medium Trucks:	48.0	47.3	40.9	39.4	47.9	48.1	
Heavy Trucks:	51.2	50.6	41.6	42.8	51.2	51.3	
Vehicle Noise:	56.0	55.2	51.3	47.4	55.9	56.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	15	33	71
CNEL:	8	16	35	76

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 61,019 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,034 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.20	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.04	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.00	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.1	71.0	69.3	63.2	71.8	72.4	
Medium Trucks:	65.5	64.8	58.4	56.9	65.4	65.6	
Heavy Trucks:	65.5	64.9	55.9	57.1	65.5	65.6	
Vehicle Noise:	73.7	72.7	69.8	64.9	73.5	73.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	308	663	1,428
CNEL:	154	331	713	1,536

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 59,692 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,925 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.10	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.14	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.09	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.0	70.9	69.2	63.1	71.7	72.3	
Medium Trucks:	65.4	64.7	58.3	56.8	65.3	65.5	
Heavy Trucks:	65.4	64.8	55.8	57.0	65.4	65.5	
Vehicle Noise:	73.6	72.6	69.7	64.8	73.4	73.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	141	303	653	1,407
CNEL:	151	326	703	1,514

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 61,103 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,041 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.20	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.04	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-16.99	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.1	71.0	69.3	63.2	71.8	72.4
Medium Trucks:	65.5	64.8	58.4	56.9	65.4	65.6
Heavy Trucks:	65.5	64.9	55.9	57.1	65.5	65.6
Vehicle Noise:	73.7	72.7	69.8	64.9	73.5	73.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	308	663	1,429
CNEL:	154	331	714	1,538

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Scottsdale Drive to I-5 SB Off- Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 59,478 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,907 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.09	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.15	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.11	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.0	70.9	69.1	63.1	71.7	72.3
Medium Trucks:	65.4	64.7	58.3	56.8	65.2	65.5
Heavy Trucks:	65.4	64.8	55.8	57.0	65.4	65.5
Vehicle Noise:	73.5	72.6	69.7	64.8	73.3	73.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	140	302	652	1,404
CNEL:	151	325	701	1,510

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: I-405 NB Off-Ramp to San Leandro

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 56,681 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,676 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.88	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.36	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.32	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.8	70.7	68.9	62.9	71.5	72.1	
Medium Trucks:	65.1	64.5	58.1	56.6	65.0	65.3	
Heavy Trucks:	65.2	64.6	55.6	56.8	65.2	65.3	
Vehicle Noise:	73.3	72.4	69.5	64.6	73.1	73.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	136	293	631	1,359
CNEL:	146	315	679	1,462

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: San Leandro to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 52,972 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,370 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.58	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.66	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.61	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.4	68.6	62.6	71.2	71.8
Medium Trucks:	64.9	64.2	57.8	56.3	64.7	65.0
Heavy Trucks:	64.9	64.3	55.3	56.5	64.9	65.0
Vehicle Noise:	73.0	72.1	69.2	64.3	72.8	73.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	130	280	603	1,299
CNEL:	140	301	649	1,398



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Harvard Avenue to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 53,363 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,402 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.61	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.62	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.58	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.4	68.7	62.6	71.2	71.8
Medium Trucks:	64.9	64.2	57.9	56.3	64.8	65.0
Heavy Trucks:	64.9	64.3	55.3	56.5	64.9	65.0
Vehicle Noise:	73.1	72.1	69.2	64.3	72.9	73.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	131	281	606	1,306
CNEL:	140	303	652	1,405

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Trabuco Road to Farwell Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 59,139 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,879 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.06	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.18	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.13	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.4	71.3	69.5	63.5	72.1	72.7	
Medium Trucks:	65.7	65.1	58.7	57.2	65.6	65.9	
Heavy Trucks:	65.8	65.2	56.2	57.4	65.8	65.9	
Vehicle Noise:	73.9	73.0	70.1	65.2	73.7	74.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	142	306	658	1,418
CNEL:	153	329	708	1,526

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 51,467 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,246 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.46	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.78	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.74	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.3	70.3	68.5	62.5	71.1	71.7	
Medium Trucks:	64.7	64.1	57.7	56.2	64.6	64.8	
Heavy Trucks:	64.8	64.2	55.1	56.4	64.7	64.9	
Vehicle Noise:	72.9	72.0	69.0	64.2	72.7	73.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	127	275	592	1,275
CNEL:	137	295	637	1,371

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Main Street to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 50,023 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,127 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.33	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.90	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.86	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.2	70.2	68.4	62.3	71.0	71.6
Medium Trucks:	64.6	63.9	57.6	56.0	64.5	64.7
Heavy Trucks:	64.6	64.1	55.0	56.3	64.6	64.7
Vehicle Noise:	72.8	71.9	68.9	64.0	72.6	73.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	125	269	581	1,251
CNEL:	135	290	625	1,346

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Warner Avenue to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 49,242 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,063 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.27	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.97	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.93	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	70.1	68.3	62.3	70.9	71.5
Medium Trucks:	64.5	63.9	57.5	56.0	64.4	64.7
Heavy Trucks:	64.6	64.0	54.9	56.2	64.6	64.7
Vehicle Noise:	72.7	71.8	68.8	64.0	72.5	73.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	124	267	574	1,238
CNEL:	133	287	618	1,332

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Walnut Avenue to Scottsdale Dive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 47,556 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,923 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.11	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.12	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.08	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.0	69.9	68.2	62.1	70.7	71.3
Medium Trucks:	64.4	63.7	57.4	55.8	64.3	64.5
Heavy Trucks:	64.4	63.8	54.8	56.0	64.4	64.5
Vehicle Noise:	72.6	71.6	68.7	63.8	72.4	72.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	261	561	1,209
CNEL:	130	280	604	1,301

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,883 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,950 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.14	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.05	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.0	70.0	68.2	62.1	70.8	71.4	
Medium Trucks:	64.4	63.7	57.4	55.8	64.3	64.5	
Heavy Trucks:	64.4	63.9	54.8	56.1	64.4	64.6	
Vehicle Noise:	72.6	71.7	68.7	63.9	72.4	72.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	262	564	1,215
CNEL:	131	282	607	1,307

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Shady Canyon Drive to Palo Verde

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,477 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,184 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.67	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.62	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.1	69.0	67.3	61.2	69.8	70.4	
Medium Trucks:	63.5	62.8	56.5	54.9	63.4	63.6	
Heavy Trucks:	63.5	62.9	53.9	55.2	63.5	63.6	
Vehicle Noise:	71.7	70.8	67.8	62.9	71.5	72.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	169	364	785
CNEL:	84	182	392	844



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Deerfield Avenue to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,131 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,641 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.79	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.45	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.40	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.6	67.8	61.8	70.4	71.0
Medium Trucks:	64.1	63.4	57.0	55.5	63.9	64.2
Heavy Trucks:	64.1	63.5	54.5	55.7	64.1	64.2
Vehicle Noise:	72.3	71.3	68.4	63.5	72.0	72.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	248	534	1,150
CNEL:	124	267	574	1,238

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Sandburg Way to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,162 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,643 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.79	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.45	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.40	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.6	67.8	61.8	70.4	71.0
Medium Trucks:	64.1	63.4	57.0	55.5	63.9	64.2
Heavy Trucks:	64.1	63.5	54.5	55.7	64.1	64.2
Vehicle Noise:	72.3	71.3	68.4	63.5	72.1	72.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	248	534	1,151
CNEL:	124	267	575	1,238

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 43,318 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,574 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.49	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.6	69.5	67.8	61.7	70.3	70.9	
Medium Trucks:	64.0	63.3	56.9	55.4	63.9	64.1	
Heavy Trucks:	64.0	63.4	54.4	55.6	64.0	64.1	
Vehicle Noise:	72.2	71.2	68.3	63.4	72.0	72.4	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	245	527	1,136
CNEL:	122	263	567	1,222

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Palo Verde to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,255 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,001 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.00	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.7	66.9	60.8	69.5	70.1
Medium Trucks:	63.1	62.4	56.1	54.5	63.0	63.2
Heavy Trucks:	63.1	62.6	53.5	54.8	63.1	63.3
Vehicle Noise:	71.3	70.4	67.4	62.5	71.1	71.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	344	740
CNEL:	80	172	370	796

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: University Drive to Sandburg Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,821 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,368 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.45	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.79	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.74	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.3	67.5	61.5	70.1	70.7
Medium Trucks:	63.7	63.1	56.7	55.1	63.6	63.8
Heavy Trucks:	63.8	63.2	54.1	55.4	63.7	63.9
Vehicle Noise:	71.9	71.0	68.0	63.2	71.7	72.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	109	235	507	1,092
CNEL:	118	253	545	1,175

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Farwell Avenue to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 46,846 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,865 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.05	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.19	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.15	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.3	70.3	68.5	62.5	71.1	71.7	
Medium Trucks:	64.7	64.1	57.7	56.2	64.6	64.8	
Heavy Trucks:	64.8	64.2	55.1	56.4	64.7	64.9	
Vehicle Noise:	72.9	72.0	69.0	64.2	72.7	73.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	262	564	1,214
CNEL:	131	281	606	1,306

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Campus Drive to High School

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 40,099 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,308 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.37	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.86	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.82	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.2	67.4	61.4	70.0	70.6
Medium Trucks:	63.6	63.0	56.6	55.1	63.5	63.8
Heavy Trucks:	63.7	63.1	54.1	55.3	63.7	63.8
Vehicle Noise:	71.8	70.9	68.0	63.1	71.6	72.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	108	233	501	1,079
CNEL:	116	250	539	1,161

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: High School to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,155 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,230 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.27	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.97	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.92	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	69.1	67.3	61.3	69.9	70.5
Medium Trucks:	63.5	62.9	56.5	55.0	63.4	63.7
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7
Vehicle Noise:	71.7	70.8	67.9	63.0	71.5	72.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	229	493	1,062
CNEL:	114	246	530	1,143



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Bryan Avenue to Florence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,248 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,073 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.05	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.19	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.14	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	68.9	67.1	61.1	69.7	70.3
Medium Trucks:	63.3	62.7	56.3	54.7	63.2	63.4
Heavy Trucks:	63.4	62.8	53.7	55.0	63.3	63.5
Vehicle Noise:	71.5	70.6	67.6	62.8	71.3	71.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	103	221	477	1,028
CNEL:	111	238	513	1,105

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Portola Parkway to Settlers

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,848 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.16	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.35	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.4	68.3	66.5	60.5	69.1	69.7
Medium Trucks:	62.8	62.1	55.7	54.2	62.7	62.9
Heavy Trucks:	62.8	62.2	53.2	54.4	62.8	62.9
Vehicle Noise:	71.0	70.0	67.1	62.2	70.8	71.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	151	326	702
CNEL:	76	163	350	755

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Florence to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 36,395 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,003 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.95	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.29	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.24	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.8	67.0	61.0	69.6	70.2
Medium Trucks:	63.2	62.6	56.2	54.6	63.1	63.3
Heavy Trucks:	63.3	62.7	53.6	54.9	63.2	63.4
Vehicle Noise:	71.4	70.5	67.5	62.7	71.2	71.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	218	470	1,012
CNEL:	109	235	505	1,088

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Irvine Boulevard to Viewpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,820 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,295 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.79	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.45	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.41	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.1	61.4	55.0	53.5	61.9	62.2
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	70.2	69.3	66.4	61.5	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	182	393	846
CNEL:	91	196	422	910

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Viewpark to Meadowood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,773 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,209 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.62	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.62	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.58	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.7	59.6	68.2	68.8
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0
Heavy Trucks:	61.9	61.3	52.3	53.6	61.9	62.0
Vehicle Noise:	70.1	69.2	66.2	61.3	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	178	383	824
CNEL:	89	191	412	887

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Settlers to Furrow

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,153 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,003 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-20.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-24.01	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.8	66.5	67.1
Medium Trucks:	60.1	59.4	53.1	51.5	60.0	60.2
Heavy Trucks:	60.1	59.6	50.5	51.8	60.1	60.3
Vehicle Noise:	68.3	67.4	64.4	59.5	68.1	68.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	101	217	467
CNEL:	50	108	233	502

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Meadowood to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,447 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,604 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.77	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-18.01	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.96	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.1	64.3	58.2	66.9	67.5
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	60.5	59.9	50.9	52.2	60.5	60.6
Vehicle Noise:	68.7	67.8	64.8	59.9	68.5	69.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	309	666
CNEL:	72	154	333	717

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Discovery Drive  
 Road Segment: Irvine Center Drive to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,351 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,101 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.21	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.2	62.2	60.4	54.4	63.0	63.6
Medium Trucks:	57.2	56.5	50.2	48.6	57.1	57.3
Heavy Trucks:	58.5	57.9	48.9	50.2	58.5	58.6
Vehicle Noise:	65.3	64.4	61.1	56.5	65.1	65.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	136	293
CNEL:	31	68	146	314



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Discovery Drive  
 Road Segment: Waterworks Way to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,669 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 715 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.90	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.09	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.4	60.3	58.5	52.5	61.1	61.7	
Medium Trucks:	55.3	54.7	48.3	46.8	55.2	55.5	
Heavy Trucks:	56.7	56.1	47.0	48.3	56.6	56.8	
Vehicle Noise:	63.4	62.5	59.2	54.7	63.2	63.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	102	220
CNEL:	24	51	109	235

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: East Yale Loop  
 Road Segment: Alton Parkway to Witherspoon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,632 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,125 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.93	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.17	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.12	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.3	62.3	60.5	54.5	63.1	63.7	
Medium Trucks:	57.3	56.6	50.3	48.7	57.2	57.4	
Heavy Trucks:	58.6	58.0	49.0	50.3	58.6	58.7	
Vehicle Noise:	65.3	64.4	61.2	56.6	65.2	65.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	297
CNEL:	32	69	148	318

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: East Yale Loop  
 Road Segment: Osborn Street to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,986 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,071 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.33	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.1	62.1	60.3	54.2	62.9	63.5	
Medium Trucks:	57.1	56.4	50.1	48.5	57.0	57.2	
Heavy Trucks:	58.4	57.8	48.8	50.0	58.4	58.5	
Vehicle Noise:	65.1	64.2	61.0	56.4	64.9	65.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	62	134	288
CNEL:	31	66	143	308

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: East Yale Loop  
 Road Segment: Yale Avenue to Springbrook South

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,997 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 990 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.48	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.68	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.8	61.7	60.0	53.9	62.5	63.1	
Medium Trucks:	56.8	56.1	49.7	48.2	56.6	56.9	
Heavy Trucks:	58.1	57.5	48.4	49.7	58.1	58.2	
Vehicle Noise:	64.8	63.9	60.6	56.1	64.6	65.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	59	127	273
CNEL:	29	63	136	292

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: East Yale Loop  
 Road Segment: Springbrook North to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,626 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 712 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.92	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.16	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.11	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.3	60.3	58.5	52.5	61.1	61.7	
Medium Trucks:	55.3	54.6	48.3	46.7	55.2	55.4	
Heavy Trucks:	56.6	56.1	47.0	48.3	56.6	56.7	
Vehicle Noise:	63.4	62.5	59.2	54.6	63.2	63.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	102	219
CNEL:	23	51	109	235

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: East Yale Loop  
 Road Segment: Woodspring to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,261 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 599 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
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	VehicleType	Day	Evening	Night	Daily																
	Autos:	77.5%	12.9%	9.6%	97.42%																
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<b>Noise Source Elevations (in feet)</b>																					
<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>Autos:</td> <td>2.000</td> <td></td> </tr> <tr> <td>Medium Trucks:</td> <td>4.000</td> <td></td> </tr> <tr> <td>Heavy Trucks:</td> <td>8.006</td> <td>Grade Adjustment: 0.0</td> </tr> </tbody> </table>	Autos:	2.000		Medium Trucks:	4.000		Heavy Trucks:	8.006	Grade Adjustment: 0.0												
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<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>Autos:</td> <td>57.786</td> </tr> <tr> <td>Medium Trucks:</td> <td>57.717</td> </tr> <tr> <td>Heavy Trucks:</td> <td>57.787</td> </tr> </tbody> </table>	Autos:	57.786	Medium Trucks:	57.717	Heavy Trucks:	57.787															
Autos:	57.786																				
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Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees																					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.67	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.86	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.6	59.5	57.8	51.7	60.3	60.9
Medium Trucks:	54.6	53.9	47.5	46.0	54.5	54.7
Heavy Trucks:	55.9	55.3	46.3	47.5	55.9	56.0
Vehicle Noise:	62.6	61.7	58.4	53.9	62.4	62.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	42	91	195
CNEL:	21	45	97	209

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: East Yale Loop  
 Road Segment: Barranca Parkway to Eastshore

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,685 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	552 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.22	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.2	59.2	57.4	51.4	60.0	60.6
Medium Trucks:	54.2	53.5	47.2	45.6	54.1	54.3
Heavy Trucks:	55.5	54.9	45.9	47.2	55.5	55.6
Vehicle Noise:	62.2	61.4	58.1	53.5	62.1	62.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	40	86	185
CNEL:	20	43	92	198

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Eastwood  
 Road Segment: Bryan Avenue to Monticello

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,260 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 269 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-6.56	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-23.80	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-27.76	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	58.4	57.3	55.5	49.5	58.1	58.7	
Medium Trucks:	52.6	51.9	45.6	44.0	52.5	52.7	
Heavy Trucks:	54.4	53.9	44.8	46.1	54.4	54.6	
Vehicle Noise:	60.6	59.7	56.3	51.9	60.4	60.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	40	86
CNEL:	9	20	43	92



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Eastwood  
 Road Segment: Columbus to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,057 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	170 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-8.56	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-25.80	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-29.76	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.4	55.3	53.5	47.5	56.1	56.7
Medium Trucks:	50.6	49.9	43.6	42.0	50.5	50.7
Heavy Trucks:	52.4	51.9	42.8	44.1	52.4	52.6
Vehicle Noise:	58.6	57.7	54.3	49.9	58.4	58.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	14	29	63
CNEL:	7	15	31	68

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: El Camino Real  
 Road Segment: Jamboree Road to Alliance (SR-261 Bridge)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,548 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,613 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.64	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.60	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.56	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.9	63.8	62.1	56.0	64.6	65.2	
Medium Trucks:	58.9	58.2	51.8	50.3	58.8	59.0	
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3	
Vehicle Noise:	66.9	66.0	62.7	58.2	66.7	67.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	175	378
CNEL:	40	87	188	405

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: El Camino Real North  
 Road Segment: El Camino Real to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,459 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	533 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.41	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.37	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.1	59.0	57.3	51.2	59.8	60.4
Medium Trucks:	54.1	53.4	47.0	45.5	53.9	54.2
Heavy Trucks:	55.4	54.8	45.8	47.0	55.4	55.5
Vehicle Noise:	62.1	61.2	57.9	53.4	61.9	62.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	84	181
CNEL:	19	42	90	193

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Fairbanks  
 Road Segment: Alton Parkway to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,795 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,551 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 37.138				
Road Grade: 0.0%		Medium Trucks: 37.030				
Left View: -90.0 degrees		Heavy Trucks: 37.139				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.47	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-16.77	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-20.73	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.5	64.8	58.7	67.3	68.0
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0
Vehicle Noise:	69.6	68.7	65.4	60.9	69.4	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	160	344
CNEL:	37	79	171	368

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Fairbanks  
 Road Segment: Irvine Boulevard to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,507 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 784 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.49	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-19.73	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-23.69	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.7	63.6	61.8	55.8	64.4	65.0	
Medium Trucks:	58.6	58.0	51.6	50.1	58.5	58.7	
Heavy Trucks:	59.9	59.4	50.3	51.6	59.9	60.0	
Vehicle Noise:	66.7	65.8	62.5	57.9	66.5	66.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	101	218
CNEL:	23	50	108	234

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Fairchild Road  
 Road Segment: MacArthur Boulevard to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,094 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 585 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.47	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.9	60.9	59.1	53.1	61.7	62.3	
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8	
Heavy Trucks:	56.5	55.9	46.9	48.2	56.5	56.6	
Vehicle Noise:	63.8	62.9	59.7	55.0	63.6	64.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	233
CNEL:	25	54	116	250

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Gateway Boulevard  
 Road Segment: Alton Parkway to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,817 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,387 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos: 77.5% 12.9% 9.6% 97.42% Medium Trucks: 84.8% 4.9% 10.3% 1.84% Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
	<b>Noise Source Elevations (in feet)</b>				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0				
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	1.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-16.01	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-19.96	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.7	59.7	57.9	51.9	60.5	61.1	
Medium Trucks:	55.2	54.6	48.2	46.7	55.1	55.3	
Heavy Trucks:	57.7	57.1	48.1	49.3	57.7	57.8	
Vehicle Noise:	63.2	62.4	58.7	54.6	63.1	63.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	46	100	216
CNEL:	23	50	107	230

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative Project Name: Irvine GP  
 Road Name: Gateway Boulevard Job Number: 15937  
 Road Segment: Spectrum Center Drive (Fortune Drive) to Alton Parkway

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,537 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,034 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.04	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.28	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.24	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.5	58.4	56.6	50.6	59.2	59.8
Medium Trucks:	54.0	53.3	46.9	45.4	53.8	54.1
Heavy Trucks:	56.4	55.9	46.8	48.1	56.4	56.5
Vehicle Noise:	62.0	61.1	57.5	53.3	61.8	62.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	38	82	177
CNEL:	19	41	88	189



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Gateway Boulevard  
 Road Segment: Irvine Center Drive to Meridian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,264 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 517 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-3.06	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-20.30	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-24.25	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.4	55.4	53.6	47.6	56.2	56.8
Medium Trucks:	50.9	50.3	43.9	42.4	50.8	51.1
Heavy Trucks:	53.4	52.8	43.8	45.1	53.4	53.5
Vehicle Noise:	59.0	58.1	54.5	50.3	58.8	59.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	112
CNEL:	12	26	55	119

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Great Park Boulevard  
 Road Segment: Sand Canyon to Ridge Valley

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,662 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,767 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.35	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-13.89	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.84	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.6	71.5	69.8	63.7	72.3	73.0	
Medium Trucks:	66.2	65.5	59.1	57.6	66.1	66.3	
Heavy Trucks:	66.6	66.0	57.0	58.2	66.6	66.7	
Vehicle Noise:	74.3	73.4	70.3	65.6	74.1	74.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	243	523	1,127
CNEL:	121	261	562	1,211

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Great Park Boulevard  
 Road Segment: Ridge Valley (O Street) to Bosque (LY Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,409 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,931 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.45	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.79	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.74	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.8
Medium Trucks:	62.0	61.3	54.9	53.4	61.9	62.1
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	70.1	69.2	66.1	61.4	69.9	70.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	286	616
CNEL:	66	143	307	662

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Great Park Boulevard (EB)  
 Road Segment: Bosque to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,050 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 747 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.68	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-20.92	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-24.87	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.1	64.3	58.3	66.9	67.5
Medium Trucks:	60.7	60.1	53.7	52.2	60.6	60.9
Heavy Trucks:	61.1	60.6	51.5	52.8	61.1	61.2
Vehicle Noise:	68.9	67.9	64.9	60.1	68.7	69.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	66	142	305
CNEL:	33	71	152	328

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Great Park Boulevard (WB)  
 Road Segment: Bosque to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,680 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 634 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.39	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-21.63	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-25.58	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.4	65.4	63.6	57.6	66.2	66.8	
Medium Trucks:	60.0	59.4	53.0	51.4	59.9	60.1	
Heavy Trucks:	60.4	59.8	50.8	52.1	60.4	60.5	
Vehicle Noise:	68.1	67.2	64.2	59.4	67.9	68.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	59	127	274
CNEL:	29	63	136	294

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: University Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,172 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,912 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height:	0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.86	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-16.38	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-20.33	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	68.9	67.1	61.1	69.7	70.3
Medium Trucks:	63.7	63.1	56.7	55.1	63.6	63.8
Heavy Trucks:	64.6	64.0	54.9	56.2	64.5	64.7
Vehicle Noise:	71.8	70.9	67.7	63.1	71.6	72.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	223	480
CNEL:	51	111	239	514

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Michelson Drive to Coronado

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,339 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,585 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.02	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	62.1	61.5	55.1	53.6	62.0	62.3
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	70.2	69.3	66.2	61.5	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	135	292	628
CNEL:	67	145	313	674

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: San Marino to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,801 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,459 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.96	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.28	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.24	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.1	65.3	59.3	67.9	68.5
Medium Trucks:	61.9	61.3	54.9	53.3	61.8	62.0
Heavy Trucks:	62.8	62.2	53.1	54.4	62.8	62.9
Vehicle Noise:	70.0	69.1	65.9	61.3	69.8	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	282	607
CNEL:	65	140	302	651



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Coronado to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,155 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,405 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.86	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.33	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.1	67.0	65.2	59.2	67.8	68.4	
Medium Trucks:	61.8	61.2	54.8	53.3	61.7	61.9	
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8	
Vehicle Noise:	69.9	69.0	65.9	61.2	69.7	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	278	599
CNEL:	64	138	298	642

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: San Carlo to San Marino

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,022 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,394 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.84	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.40	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.35	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.2	59.2	67.8	68.4
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	62.7	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	69.9	69.0	65.8	61.2	69.7	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	277	597
CNEL:	64	138	297	640

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Main Street to San Carlo

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,489 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,350 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">VehicleType</th> <th style="text-align: center;">Day</th> <th style="text-align: center;">Evening</th> <th style="text-align: center;">Night</th> <th style="text-align: center;">Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td style="text-align: center;">77.5%</td> <td style="text-align: center;">12.9%</td> <td style="text-align: center;">9.6%</td> <td style="text-align: center;">97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td style="text-align: center;">84.8%</td> <td style="text-align: center;">4.9%</td> <td style="text-align: center;">10.3%</td> <td style="text-align: center;">1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td style="text-align: center;">86.5%</td> <td style="text-align: center;">2.7%</td> <td style="text-align: center;">10.8%</td> <td style="text-align: center;">0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.76	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.43	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.0	66.9	65.1	59.1	67.7	68.3	
Medium Trucks:	61.7	61.1	54.7	53.2	61.6	61.8	
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7	
Vehicle Noise:	69.8	68.9	65.8	61.1	69.6	70.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	274	589
CNEL:	63	136	293	632

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Alton Parkway to San Leon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,284 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,673 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.91	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.4	63.7	57.6	66.2	66.8
Medium Trucks:	60.3	59.6	53.2	51.7	60.1	60.4
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2
Vehicle Noise:	68.3	67.4	64.3	59.6	68.1	68.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	101	218	470
CNEL:	50	109	234	504

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: San Juan to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,554 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,696 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.85	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.5	63.7	57.7	66.3	66.9
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4
Heavy Trucks:	61.2	60.6	51.5	52.8	61.1	61.3
Vehicle Noise:	68.4	67.5	64.3	59.7	68.2	68.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	102	220	474
CNEL:	51	110	236	509

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: San Leon to San Juan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,160 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,663 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.94	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.4	63.6	57.6	66.2	66.8
Medium Trucks:	60.2	59.6	53.2	51.7	60.1	60.3
Heavy Trucks:	61.1	60.5	51.4	52.7	61.1	61.2
Vehicle Noise:	68.3	67.4	64.3	59.6	68.1	68.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	101	217	468
CNEL:	50	108	233	502

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,703 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,296 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.83	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.02	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.4	64.3	62.6	56.5	65.1	65.7
Medium Trucks:	59.1	58.5	52.1	50.6	59.0	59.3
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1
Vehicle Noise:	67.2	66.3	63.2	58.5	67.0	67.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	85	184	396
CNEL:	43	92	197	425

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Deerfield Avenue to Poplar Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,436 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,273 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.90	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.14	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.10	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.3	64.3	62.5	56.4	65.1	65.7	
Medium Trucks:	59.1	58.4	52.0	50.5	59.0	59.2	
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0	
Vehicle Noise:	67.1	66.2	63.1	58.4	67.0	67.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	182	392
CNEL:	42	91	195	420



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,252 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,423 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.42	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.66	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.61	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.8	64.7	63.0	56.9	65.5	66.1
Medium Trucks:	59.6	58.9	52.5	51.0	59.4	59.7
Heavy Trucks:	60.4	59.8	50.8	52.0	60.4	60.5
Vehicle Noise:	67.6	66.7	63.6	58.9	67.4	67.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	91	196	422
CNEL:	45	97	210	453

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Bridge Road to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 16,993 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,402 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.48	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.68	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.7	64.7	62.9	56.8	65.5	66.1	
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6	
Heavy Trucks:	60.3	59.7	50.7	52.0	60.3	60.4	
Vehicle Noise:	67.6	66.7	63.5	58.8	67.4	67.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	90	194	418
CNEL:	45	97	208	448

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Paseo Westpark to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 16,907 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,395 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.51	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.74	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.70	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.6	62.9	56.8	65.4	66.1
Medium Trucks:	59.5	58.8	52.4	50.9	59.3	59.6
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	67.5	66.6	63.5	58.8	67.4	67.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	90	193	416
CNEL:	45	96	207	446

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Poplar Street to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,736 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,133 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 42.814				
Road Grade: 0.0%		Medium Trucks: 42.720				
Left View: -90.0 degrees		Heavy Trucks: 42.814				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.41	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	79.45	-18.65	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	84.25	-22.60	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.5	59.9	53.5	51.9	60.4	60.6
Heavy Trucks:	61.4	60.8	51.7	53.0	61.3	61.5
Vehicle Noise:	68.6	67.7	64.5	59.9	68.4	68.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	182	391
CNEL:	42	90	195	420

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: California Avenue to Berkeley Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,147 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,250 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.98	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.22	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.18	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.2	62.4	56.3	65.0	65.6
Medium Trucks:	59.0	58.3	52.0	50.4	58.9	59.1
Heavy Trucks:	59.8	59.2	50.2	51.5	59.8	59.9
Vehicle Noise:	67.1	66.2	63.0	58.3	66.9	67.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	83	180	387
CNEL:	41	89	193	415

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Culver Drive to California Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,914 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,230 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.05	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.29	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.24	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.1	62.3	56.3	64.9	65.5
Medium Trucks:	58.9	58.2	51.9	50.3	58.8	59.0
Heavy Trucks:	59.8	59.2	50.1	51.4	59.7	59.9
Vehicle Noise:	67.0	66.1	62.9	58.3	66.8	67.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	178	383
CNEL:	41	88	191	411

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Berkeley to Bridge Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,559 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,201 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.16	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.35	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.1	64.0	62.2	56.2	64.8	65.4	
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9	
Heavy Trucks:	59.7	59.1	50.0	51.3	59.6	59.8	
Vehicle Noise:	66.9	66.0	62.8	58.2	66.7	67.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	175	377
CNEL:	40	87	188	404

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Warner Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,284 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,096 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.55	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.79	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.75	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.7	63.6	61.8	55.8	64.4	65.0	
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5	
Heavy Trucks:	59.3	58.7	49.6	50.9	59.2	59.4	
Vehicle Noise:	66.5	65.6	62.4	57.8	66.3	66.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	164	354
CNEL:	38	82	176	380



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Hicks Canyon Drive  
 Road Segment: Delamesa to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,212 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	182 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	50.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 42.814				
Road Grade:	0.0%	Medium Trucks: 42.720				
Left View:	-90.0 degrees	Heavy Trucks: 42.814				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-8.25	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	75.75	-25.49	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	81.57	-29.44	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.8	54.7	52.9	46.9	55.5	56.1
Medium Trucks:	50.0	49.3	43.0	41.4	49.9	50.1
Heavy Trucks:	51.8	51.2	42.2	43.5	51.8	51.9
Vehicle Noise:	58.0	57.1	53.7	49.3	57.8	58.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	36	77
CNEL:	8	18	38	82

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Hornet (5th St)  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,323 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 274 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-5.02	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-22.26	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-26.21	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	54.4	53.3	51.5	45.5	54.1	54.7	
Medium Trucks:	49.2	48.5	42.2	40.6	49.1	49.3	
Heavy Trucks:	52.4	51.8	42.8	44.0	52.4	52.5	
Vehicle Noise:	57.2	56.4	52.5	48.6	57.1	57.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	11	24	52
CNEL:	5	12	25	55

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Hubble  
 Road Segment: Irvine Center Drive to Bunsen

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,420 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 200 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-6.40	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-23.63	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-27.59	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	53.0	51.9	50.1	44.1	52.7	53.3	
Medium Trucks:	47.8	47.1	40.8	39.2	47.7	47.9	
Heavy Trucks:	51.0	50.4	41.4	42.6	51.0	51.1	
Vehicle Noise:	55.9	55.0	51.1	47.2	55.7	56.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	19	42
CNEL:	4	10	21	44

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: SR-133 NB Off- Ramp to Ridge Valley (O Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 41,517 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,425 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.52	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.71	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.67	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	69.3	67.6	61.5	70.1	70.8
Medium Trucks:	63.8	63.1	56.8	55.2	63.7	63.9
Heavy Trucks:	63.8	63.2	54.2	55.5	63.8	63.9
Vehicle Noise:	72.0	71.1	68.1	63.2	71.8	72.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	238	513	1,105
CNEL:	119	256	552	1,188

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: SR-133 SB Off-Ramp to SR-133 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 41,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,382 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.47	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.77	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.72	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	69.3	67.5	61.5	70.1	70.7
Medium Trucks:	63.7	63.1	56.7	55.2	63.6	63.9
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9
Vehicle Noise:	71.9	71.0	68.1	63.2	71.7	72.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	236	508	1,095
CNEL:	118	254	547	1,178

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Sand Canyon to SR-133 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,181 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,727 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.89	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.35	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.30	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.2	70.1	68.4	62.3	70.9	71.5
Medium Trucks:	64.6	63.9	57.5	56.0	64.5	64.7
Heavy Trucks:	64.6	64.0	55.0	56.2	64.6	64.7
Vehicle Noise:	72.8	71.8	68.9	64.0	72.6	73.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	119	255	550	1,185
CNEL:	128	275	592	1,275

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Merit to Alton

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,805 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,954 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.88	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.36	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.31	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	66.9	60.9	69.5	70.1
Medium Trucks:	63.2	62.5	56.1	54.6	63.0	63.3
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3
Vehicle Noise:	71.3	70.4	67.5	62.6	71.1	71.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	465	1,001
CNEL:	108	232	500	1,077

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Journey to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 36,637 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,023 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.98	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.26	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.21	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.9	68.8	67.0	61.0	69.6	70.2	
Medium Trucks:	63.3	62.6	56.2	54.7	63.1	63.4	
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4	
Vehicle Noise:	71.4	70.5	67.6	62.7	71.2	71.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	102	219	472	1,016
CNEL:	109	236	507	1,093



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Ridge Valley (O Street) to Bosque (LY Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,240 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,660 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.43	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.81	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.77	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.3	68.2	66.5	60.4	69.0	69.7	
Medium Trucks:	62.7	62.0	55.7	54.1	62.6	62.8	
Heavy Trucks:	62.7	62.1	53.1	54.4	62.7	62.8	
Vehicle Noise:	70.9	70.0	67.0	62.1	70.7	71.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	201	433	933
CNEL:	100	216	466	1,004

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Pusan Way to Chinon (B Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,080 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,564 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.27	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.97	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.93	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.1	66.3	60.3	68.9	69.5
Medium Trucks:	62.5	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	62.6	62.0	52.9	54.2	62.6	62.7
Vehicle Noise:	70.7	69.8	66.8	62.0	70.5	71.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	196	423	911
CNEL:	98	211	455	980

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Palo Lado to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,664 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,777 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.61	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.62	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.58	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.5	68.4	66.7	60.6	69.2	69.8	
Medium Trucks:	62.9	62.2	55.9	54.3	62.8	63.0	
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0	
Vehicle Noise:	71.1	70.1	67.2	62.3	70.9	71.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	96	207	446	960
CNEL:	103	223	480	1,033

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Culver Drive to Palo Lado

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,323 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,749 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.57	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.67	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.62	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.5	68.4	66.6	60.6	69.2	69.8
Medium Trucks:	62.8	62.2	55.8	54.3	62.7	63.0
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0
Vehicle Noise:	71.0	70.1	67.1	62.3	70.8	71.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	95	206	443	954
CNEL:	103	221	476	1,026

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: SR-261 SB Off-Ramp to SR-261 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,007 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,641 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.39	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.84	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.80	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.3	68.2	66.4	60.4	69.0	69.6	
Medium Trucks:	62.7	62.0	55.6	54.1	62.5	62.8	
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8	
Vehicle Noise:	70.9	69.9	67.0	62.1	70.7	71.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	200	431	929
CNEL:	100	215	464	999

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Old Myford Road to Market Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,352 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,669 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.44	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.80	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.75	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.3	66.5	60.4	69.1	69.7
Medium Trucks:	62.7	62.0	55.7	54.1	62.6	62.8
Heavy Trucks:	62.7	62.2	53.1	54.4	62.7	62.9
Vehicle Noise:	70.9	70.0	67.0	62.1	70.7	71.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	94	202	434	935
CNEL:	101	217	467	1,006

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Bosque (LY Street) to Modjeska

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,429 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,675 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.45	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.79	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.74	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.3	66.5	60.5	69.1	69.7
Medium Trucks:	62.7	62.1	55.7	54.1	62.6	62.8
Heavy Trucks:	62.8	62.2	53.1	54.4	62.7	62.9
Vehicle Noise:	70.9	70.0	67.0	62.2	70.7	71.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	94	202	435	937
CNEL:	101	217	468	1,008

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Jamboree Road to Old Myford Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,680 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,614 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.35	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.89	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.84	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.2	68.2	66.4	60.3	69.0	69.6	
Medium Trucks:	62.6	62.0	55.6	54.0	62.5	62.7	
Heavy Trucks:	62.7	62.1	53.0	54.3	62.6	62.8	
Vehicle Noise:	70.8	69.9	66.9	62.1	70.6	71.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	199	428	922
CNEL:	99	214	461	992



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Market Place to SR-261 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,554 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,603 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.33	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.91	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.86	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.2	66.4	60.3	69.0	69.6
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	62.6	62.1	53.0	54.3	62.6	62.7
Vehicle Noise:	70.8	69.9	66.9	62.0	70.6	71.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	427	920
CNEL:	99	213	459	990

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Jeffrey Road to Groveland

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,022 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,642 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.40	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.84	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.80	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.2	66.5	60.4	69.0	69.6
Medium Trucks:	62.7	62.0	55.6	54.1	62.6	62.8
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.9	69.9	67.0	62.1	70.7	71.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	200	431	929
CNEL:	100	215	464	999

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Bake Parkway to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,197 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,326 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.84	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.39	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.35	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.7	65.9	59.8	68.5	69.1	
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2	
Heavy Trucks:	62.1	61.6	52.5	53.8	62.1	62.3	
Vehicle Noise:	70.3	69.4	66.4	61.6	70.1	70.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	184	396	853
CNEL:	92	198	426	918

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative      Project Name: Irvine GP  
 Road Name: Irvine Boulevard      Job Number: 15937  
 Road Segment: Independence Way (The Groves)/The Groves to Jeffrey Road

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,427 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,428 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.21	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.16	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.8	66.1	60.0	68.7	69.3
Medium Trucks:	62.3	61.6	55.3	53.7	62.2	62.4
Heavy Trucks:	62.3	61.7	52.7	54.0	62.3	62.4
Vehicle Noise:	70.5	69.6	66.6	61.7	70.3	70.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	189	408	878
CNEL:	94	204	438	945

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Chinon (B Street) to Merit

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,405 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,261 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.72	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.52	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.47	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.6	67.5	65.8	59.7	68.3	68.9	
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1	
Heavy Trucks:	62.0	61.4	52.4	53.7	62.0	62.1	
Vehicle Noise:	70.2	69.3	66.3	61.4	70.0	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	180	389	837
CNEL:	90	194	418	901

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: SR-261 NB Off-Ramp to Central Park

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,707 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,368 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.92	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.32	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.27	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	66.0	59.9	68.5	69.1
Medium Trucks:	62.2	61.5	55.2	53.6	62.1	62.3
Heavy Trucks:	62.2	61.6	52.6	53.9	62.2	62.3
Vehicle Noise:	70.4	69.5	66.5	61.6	70.2	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	186	401	864
CNEL:	93	200	431	929

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative      Project Name: Irvine GP  
 Road Name: Irvine Boulevard      Job Number: 15937  
 Road Segment: Pueblo Norte to Independence Way (The Groves)/ Parkwood

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,114 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,319 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.83	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.41	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.36	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.7	65.9	59.8	68.5	69.1
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2
Heavy Trucks:	62.1	61.5	52.5	53.8	62.1	62.2
Vehicle Noise:	70.3	69.4	66.4	61.5	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	184	395	852
CNEL:	92	197	425	916

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Yale Avenue to Pueblo Norte

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,924 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,304 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.80	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.44	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.39	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.9	59.8	68.4	69.0	
Medium Trucks:	62.1	61.4	55.0	53.5	62.0	62.2	
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2	
Vehicle Noise:	70.3	69.3	66.4	61.5	70.1	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	183	394	848
CNEL:	91	197	423	912



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Modjeska to Pusan Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,040 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,148 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.50	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.74	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.70	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	61.8	61.1	54.7	53.2	61.7	61.9
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	70.0	69.0	66.1	61.2	69.8	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	376	809
CNEL:	87	188	404	871

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Central Park Avenue to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,842 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,049 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.29	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.94	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.90	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	67.1	65.3	59.3	67.9	68.5	
Medium Trucks:	61.6	60.9	54.5	53.0	61.4	61.7	
Heavy Trucks:	61.6	61.0	52.0	53.2	61.6	61.7	
Vehicle Noise:	69.8	68.8	65.9	61.0	69.6	70.0	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	169	364	784
CNEL:	84	182	392	844

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Parker to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,962 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,894 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.05	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.29	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.24	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	66.8	65.0	59.0	67.6	68.2	
Medium Trucks:	61.2	60.6	54.2	52.6	61.1	61.3	
Heavy Trucks:	61.3	60.7	51.6	52.9	61.2	61.4	
Vehicle Noise:	69.4	68.5	65.5	60.7	69.2	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	345	744
CNEL:	80	173	372	801

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Alton Parkway to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,955 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,481 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
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	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-18.35	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-22.31	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.2	59.5	53.1	51.6	60.0	60.3
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3
Vehicle Noise:	68.3	67.4	64.5	59.6	68.1	68.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	293	632
CNEL:	68	146	315	680

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative      Project Name: Irvine GP  
 Road Name: Irvine Center Drive      Job Number: 15937  
 Road Segment: Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 53,953 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,451 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.08	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.16	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.12	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.7	68.0	61.9	70.5	71.1
Medium Trucks:	64.4	63.7	57.3	55.8	64.2	64.5
Heavy Trucks:	64.8	64.2	55.2	56.4	64.8	64.9
Vehicle Noise:	72.5	71.6	68.5	63.7	72.3	72.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	245	528	1,137
CNEL:	122	263	567	1,222

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Orange Tree to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 50,142 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,137 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.76	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.48	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.44	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.1	69.0	67.2	61.2	69.8	70.4	
Medium Trucks:	63.6	63.0	56.6	55.0	63.5	63.7	
Heavy Trucks:	64.0	63.5	54.4	55.7	64.0	64.2	
Vehicle Noise:	71.8	70.8	67.8	63.0	71.6	72.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	107	230	495	1,067
CNEL:	115	247	532	1,147

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: I-405 SB Off-Ramp to Research

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 48,675 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,016 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.63	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.61	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.57	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.3	67.5	61.5	70.1	70.7
Medium Trucks:	63.9	63.2	56.9	55.3	63.8	64.0
Heavy Trucks:	64.3	63.7	54.7	56.0	64.3	64.4
Vehicle Noise:	72.0	71.1	68.1	63.3	71.8	72.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	229	493	1,062
CNEL:	114	246	529	1,141

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Irvine Valley College to Orange Tree

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 49,177 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,057 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.56	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.52	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.0	68.9	67.2	61.1	69.7	70.3	
Medium Trucks:	63.5	62.9	56.5	55.0	63.4	63.7	
Heavy Trucks:	64.0	63.4	54.3	55.6	63.9	64.1	
Vehicle Noise:	71.7	70.8	67.7	62.9	71.5	71.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	105	227	489	1,054
CNEL:	113	244	525	1,132



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Fontaine Avenue to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 46,660 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,849 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.45	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.79	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.75	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	66.9	60.9	69.5	70.1
Medium Trucks:	63.3	62.6	56.3	54.7	63.2	63.4
Heavy Trucks:	63.7	63.1	54.1	55.4	63.7	63.8
Vehicle Noise:	71.4	70.5	67.5	62.7	71.2	71.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	102	219	472	1,017
CNEL:	109	236	507	1,093

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Culver Drive to Deerwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,919 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,788 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.38	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.86	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.82	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.7	68.6	66.9	60.8	69.4	70.0	
Medium Trucks:	63.2	62.6	56.2	54.7	63.1	63.4	
Heavy Trucks:	63.7	63.1	54.0	55.3	63.6	63.8	
Vehicle Noise:	71.4	70.5	67.4	62.6	71.2	71.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	217	467	1,007
CNEL:	108	233	502	1,082

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Deerwood to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,516 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,755 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.34	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.90	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.86	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.6	66.8	60.8	69.4	70.0
Medium Trucks:	63.2	62.5	56.2	54.6	63.1	63.3
Heavy Trucks:	63.6	63.0	54.0	55.3	63.6	63.7
Vehicle Noise:	71.3	70.4	67.4	62.6	71.1	71.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	465	1,001
CNEL:	108	232	499	1,075

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Yale Avenue to Fontaine Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,236 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,814 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.41	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.83	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.79	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.9	60.8	69.5	70.1
Medium Trucks:	63.3	62.6	56.2	54.7	63.2	63.4
Heavy Trucks:	63.7	63.1	54.1	55.3	63.7	63.8
Vehicle Noise:	71.4	70.5	67.4	62.7	71.2	71.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	218	469	1,011
CNEL:	109	234	504	1,087

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Jeffrey Road to Irvine Valley College

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,688 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,687 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.26	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.98	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.94	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.6	68.5	66.7	60.7	69.3	69.9	
Medium Trucks:	63.1	62.5	56.1	54.5	63.0	63.2	
Heavy Trucks:	63.5	63.0	53.9	55.2	63.5	63.7	
Vehicle Noise:	71.3	70.3	67.3	62.5	71.1	71.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	99	213	459	989
CNEL:	106	229	493	1,062

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Alton Parkway to Spectrum

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 42,966 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,545 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.09	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.15	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.11	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.4	68.3	66.6	60.5	69.1	69.7
Medium Trucks:	63.0	62.3	55.9	54.4	62.8	63.1
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	71.1	70.2	67.1	62.3	70.9	71.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	96	207	447	963
CNEL:	103	223	480	1,035

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Spectrum to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 42,370 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,496 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.21	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.17	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.3	66.5	60.4	69.1	69.7
Medium Trucks:	62.9	62.2	55.9	54.3	62.8	63.0
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4
Vehicle Noise:	71.0	70.1	67.1	62.3	70.8	71.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	95	206	443	954
CNEL:	103	221	476	1,025

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Hearthstone to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,645 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,271 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.74	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.50	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.46	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	68.0	66.2	60.2	68.8	69.4
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	63.0	62.4	53.4	54.7	63.0	63.1
Vehicle Noise:	70.7	69.8	66.8	62.0	70.5	71.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	197	424	913
CNEL:	98	211	455	981



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Charter to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,266 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,239 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.70	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.54	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.50	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	67.9	66.2	60.1	68.7	69.3
Medium Trucks:	62.6	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	70.7	69.8	66.7	62.0	70.5	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	195	421	907
CNEL:	97	210	452	974

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Jamboree Road to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,938 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,965 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.31	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.93	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.88	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.6	65.8	59.7	68.4	69.0
Medium Trucks:	62.2	61.5	55.1	53.6	62.1	62.3
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	70.3	69.4	66.4	61.6	70.1	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	184	397	855
CNEL:	92	198	426	919

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Pacifica to Entertainment (Enterprise/Fortune)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 37,251 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,073 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.47	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.77	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.73	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.3	61.7	55.3	53.8	62.2	62.5
Heavy Trucks:	62.8	62.2	53.1	54.4	62.7	62.9
Vehicle Noise:	70.5	69.6	66.5	61.7	70.3	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	189	406	876
CNEL:	94	203	437	941

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 37,095 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,060 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.45	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.79	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.75	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.3	61.6	55.3	53.7	62.2	62.4
Heavy Trucks:	62.7	62.1	53.1	54.4	62.7	62.8
Vehicle Noise:	70.4	69.5	66.5	61.7	70.3	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	188	405	873
CNEL:	94	202	435	938

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Harvard Avenue to Hearthstone

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 34,007 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,806 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.07	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.17	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.12	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.1
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5
Vehicle Noise:	70.1	69.2	66.1	61.3	69.9	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	178	382	824
CNEL:	89	191	411	885

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Research to Hubble

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,287 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,581 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.48	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.0	67.0	65.2	59.1	67.8	68.4	
Medium Trucks:	61.6	60.9	54.5	53.0	61.5	61.7	
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1	
Vehicle Noise:	69.7	68.8	65.8	61.0	69.5	70.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	168	362	779
CNEL:	84	180	389	837

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Barranca Parkway to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,542 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,685 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.88	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.36	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.31	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	67.1	65.4	59.3	67.9	68.5	
Medium Trucks:	61.7	61.1	54.7	53.2	61.6	61.9	
Heavy Trucks:	62.2	61.6	52.5	53.8	62.1	62.3	
Vehicle Noise:	69.9	69.0	65.9	61.1	69.7	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	172	371	800
CNEL:	86	185	399	860

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Bake Parkway to Muller

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,258 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,496 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.56	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.67	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.63	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.8	65.0	59.0	67.6	68.2
Medium Trucks:	61.4	60.8	54.4	52.9	61.3	61.5
Heavy Trucks:	61.9	61.3	52.2	53.5	61.8	62.0
Vehicle Noise:	69.6	68.6	65.6	60.8	69.4	69.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	164	354	762
CNEL:	82	176	380	819



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Discovery to Charter

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,253 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,743 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.97	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.26	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.22	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.2	65.5	59.4	68.0	68.6
Medium Trucks:	61.8	61.2	54.8	53.3	61.7	62.0
Heavy Trucks:	62.3	61.7	52.6	53.9	62.2	62.4
Vehicle Noise:	70.0	69.1	66.0	61.2	69.8	70.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	175	377	812
CNEL:	87	188	405	872

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Hubble to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,520 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,353 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.31	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.93	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.89	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.6	64.8	58.7	67.4	68.0
Medium Trucks:	61.2	60.5	54.1	52.6	61.1	61.3
Heavy Trucks:	61.6	61.0	52.0	53.2	61.6	61.7
Vehicle Noise:	69.3	68.4	65.3	60.6	69.1	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	158	340	733
CNEL:	79	170	365	787

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Muller to Tesla

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,303 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,252 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.12	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.08	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.4	66.4	64.6	58.5	67.2	67.8	
Medium Trucks:	61.0	60.3	54.0	52.4	60.9	61.1	
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5	
Vehicle Noise:	69.1	68.2	65.2	60.4	68.9	69.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	153	330	712
CNEL:	76	165	355	765

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Sand Canyon Avenue to Odyssey

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,449 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,265 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
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	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.14	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.10	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.05	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.4	64.6	58.6	67.2	67.8
Medium Trucks:	61.0	60.3	54.0	52.4	60.9	61.1
Heavy Trucks:	61.4	60.8	51.8	53.1	61.4	61.5
Vehicle Noise:	69.1	68.2	65.2	60.4	68.9	69.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	154	332	714
CNEL:	77	165	356	768

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Tesla to Scientific Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,259 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,084 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.78	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.46	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.41	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.1	66.0	64.3	58.2	66.8	67.4	
Medium Trucks:	60.6	60.0	53.6	52.1	60.5	60.8	
Heavy Trucks:	61.1	60.5	51.4	52.7	61.0	61.2	
Vehicle Noise:	68.8	67.9	64.8	60.0	68.6	69.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	146	314	676
CNEL:	73	156	337	726

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Scientific Way to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,211 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,997 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.60	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.64	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.60	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.9	65.8	64.1	58.0	66.6	67.2	
Medium Trucks:	60.5	59.8	53.4	51.9	60.3	60.6	
Heavy Trucks:	60.9	60.3	51.3	52.5	60.9	61.0	
Vehicle Noise:	68.6	67.7	64.6	59.9	68.4	68.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	142	305	657
CNEL:	71	152	328	706

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Gateway Boulevard to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,509 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,022 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.65	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.59	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.54	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	65.9	64.1	58.1	66.7	67.3
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	60.9	60.3	51.3	52.6	60.9	61.0
Vehicle Noise:	68.7	67.7	64.7	59.9	68.5	68.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	143	307	662
CNEL:	71	153	330	712

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Laguna Canyon Road to Discovery

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,356 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,009 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.62	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.62	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.57	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.9	65.9	64.1	58.0	66.7	67.3
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	60.9	60.3	51.3	52.5	60.9	61.0
Vehicle Noise:	68.6	67.7	64.7	59.9	68.4	68.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	142	306	660
CNEL:	71	153	329	709



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Odyssey to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,191 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,996 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.59	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.65	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.60	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.9	65.8	64.1	58.0	66.6	67.2	
Medium Trucks:	60.5	59.8	53.4	51.9	60.3	60.6	
Heavy Trucks:	60.9	60.3	51.3	52.5	60.9	61.0	
Vehicle Noise:	68.6	67.7	64.6	59.8	68.4	68.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	141	305	657
CNEL:	71	152	327	705

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive (Edinger)  
 Road Segment: Redhill Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 40,036 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,303 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.78	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.46	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.41	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.1	68.0	66.3	60.2	68.8	69.4	
Medium Trucks:	62.6	62.0	55.6	54.1	62.5	62.8	
Heavy Trucks:	63.1	62.5	53.4	54.7	63.0	63.2	
Vehicle Noise:	70.8	69.9	66.8	62.0	70.6	71.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	426	919
CNEL:	99	213	458	987

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: I-5 SB Off-Ramp to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 69,825 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,761 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.78	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-12.46	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-16.41	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.7	71.6	69.8	63.8	72.4	73.0
Medium Trucks:	66.1	65.4	59.0	57.5	65.9	66.2
Heavy Trucks:	66.1	65.5	56.5	57.7	66.1	66.2
Vehicle Noise:	74.2	73.3	70.4	65.5	74.0	74.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	156	337	725	1,562
CNEL:	168	362	780	1,681

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 82,589 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 6,814 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.51	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-11.73	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-15.68	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.8	72.7	71.0	64.9	73.5	74.1
Medium Trucks:	67.2	66.5	60.2	58.6	67.1	67.3
Heavy Trucks:	67.2	66.6	57.6	58.9	67.2	67.3
Vehicle Noise:	75.4	74.5	71.5	66.6	75.2	75.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	177	382	823	1,772
CNEL:	191	411	885	1,906

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Walnut Avenue to Michelle Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 60,520 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,993 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.16	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.08	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.03	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.0	71.0	69.2	63.2	71.8	72.4	
Medium Trucks:	65.4	64.8	58.4	56.9	65.3	65.5	
Heavy Trucks:	65.5	64.9	55.8	57.1	65.4	65.6	
Vehicle Noise:	73.6	72.7	69.7	64.9	73.4	73.9	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	142	306	659	1,420
CNEL:	153	329	709	1,528

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: I-405 NB Off-Ramp to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 82,134 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 6,776 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.49	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-11.75	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-15.71	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	75.2	74.1	72.3	66.3	74.9	75.5	
Medium Trucks:	68.6	67.9	61.5	60.0	68.4	68.7	
Heavy Trucks:	68.6	68.0	59.0	60.2	68.6	68.7	
Vehicle Noise:	76.7	75.8	72.9	68.0	76.5	77.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	273	587	1,266	2,727
CNEL:	293	632	1,362	2,933

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Michelle Drive to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 56,389 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,652 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.85	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.38	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.34	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.7	70.7	68.9	62.9	71.5	72.1	
Medium Trucks:	65.1	64.5	58.1	56.5	65.0	65.2	
Heavy Trucks:	65.2	64.6	55.5	56.8	65.1	65.3	
Vehicle Noise:	73.3	72.4	69.4	64.6	73.1	73.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	135	292	629	1,355
CNEL:	146	314	676	1,457

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Main Street to Kelvin Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 71,714 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,916 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.90	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.34	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.30	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.6	73.5	71.7	65.7	74.3	74.9
Medium Trucks:	68.0	67.3	60.9	59.4	67.8	68.1
Heavy Trucks:	68.0	67.4	58.4	59.6	68.0	68.1
Vehicle Noise:	76.1	75.2	72.3	67.4	75.9	76.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	249	537	1,156	2,491
CNEL:	268	577	1,244	2,680



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 88,960 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 7,339 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 130 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 88.792 Medium Trucks: 88.747 Heavy Trucks: 88.792																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.83	-3.84	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-11.40	-3.84	-1.20	-4.96	0.000	0.000
Heavy Trucks:	86.40	-15.36	-3.84	-1.20	-5.14	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.6	71.5	69.7	63.7	72.3	72.9
Medium Trucks:	66.0	65.3	58.9	57.4	65.8	66.1
Heavy Trucks:	66.0	65.4	56.4	57.6	66.0	66.1
Vehicle Noise:	74.1	73.2	70.3	65.4	73.9	74.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	202	434	936	2,016
CNEL:	217	467	1,007	2,169

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Kelvin Avenue to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 66,488 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,485 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 56.593				
Road Grade: 0.0%	Medium Trucks: 56.522				
Left View: -90.0 degrees	Heavy Trucks: 56.593				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.57	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.67	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.62	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	74.2	73.2	71.4	65.4	74.0	74.6	
Medium Trucks:	67.6	67.0	60.6	59.1	67.5	67.7	
Heavy Trucks:	67.7	67.1	58.0	59.3	67.6	67.8	
Vehicle Noise:	75.8	74.9	71.9	67.1	75.6	76.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	237	510	1,099	2,368
CNEL:	255	549	1,183	2,548

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 65,760 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,425 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.52	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.72	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.67	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.2	73.1	71.4	65.3	73.9	74.5
Medium Trucks:	67.6	66.9	60.6	59.0	67.5	67.7
Heavy Trucks:	67.6	67.0	58.0	59.2	67.6	67.7
Vehicle Noise:	75.8	74.8	71.9	67.0	75.6	76.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	235	507	1,091	2,351
CNEL:	253	545	1,174	2,529

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Birch Street to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 50,222 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,143 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.35	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.89	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.84	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.2	70.2	68.4	62.4	71.0	71.6
Medium Trucks:	64.6	64.0	57.6	56.0	64.5	64.7
Heavy Trucks:	64.7	64.1	55.0	56.3	64.6	64.8
Vehicle Noise:	72.8	71.9	68.9	64.1	72.6	73.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	125	270	582	1,254
CNEL:	135	291	626	1,349

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Dupont Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 56,292 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,644 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.85	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.39	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.35	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.1	71.1	69.3	63.3	71.9	72.5
Medium Trucks:	65.5	64.9	58.5	57.0	65.4	65.6
Heavy Trucks:	65.6	65.0	55.9	57.2	65.5	65.7
Vehicle Noise:	73.7	72.8	69.8	65.0	73.5	74.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	137	296	637	1,372
CNEL:	148	318	685	1,477

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Alton Parkway to Beckman

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 60,116 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,960 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 56.593				
Road Grade: 0.0%	Medium Trucks: 56.522				
Left View: -90.0 degrees	Heavy Trucks: 56.593				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.13	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.11	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.06	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.8	72.7	71.0	64.9	73.5	74.1
Medium Trucks:	67.2	66.5	60.2	58.6	67.1	67.3
Heavy Trucks:	67.2	66.6	57.6	58.9	67.2	67.3
Vehicle Noise:	75.4	74.5	71.5	66.6	75.2	75.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	221	477	1,028	2,215
CNEL:	238	513	1,106	2,382

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Fairchild Road to Birch Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 51,524 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,251 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.46	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.78	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.73	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.8	70.7	68.9	62.9	71.5	72.1
Medium Trucks:	65.1	64.5	58.1	56.6	65.0	65.3
Heavy Trucks:	65.2	64.6	55.6	56.8	65.2	65.3
Vehicle Noise:	73.3	72.4	69.5	64.6	73.1	73.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	129	279	601	1,294
CNEL:	139	300	646	1,392

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Beckman to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 55,530 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,581 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.79	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.45	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.41	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.5	72.4	70.6	64.6	73.2	73.8
Medium Trucks:	66.9	66.2	59.8	58.3	66.7	67.0
Heavy Trucks:	66.9	66.3	57.3	58.5	66.9	67.0
Vehicle Noise:	75.0	74.1	71.2	66.3	74.8	75.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	210	453	975	2,100
CNEL:	226	487	1,049	2,260



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: I-5 NB Off-Ramp to El Camino Real

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 52,710 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,349 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.56	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.68	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.63	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.2	72.2	70.4	64.3	73.0	73.6	
Medium Trucks:	66.6	66.0	59.6	58.0	66.5	66.7	
Heavy Trucks:	66.7	66.1	57.0	58.3	66.6	66.8	
Vehicle Noise:	74.8	73.9	70.9	66.1	74.6	75.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	203	437	942	2,029
CNEL:	218	470	1,013	2,182

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Campus Drive to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 47,220 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,896 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.08	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.16	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.11	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.4	70.3	68.5	62.5	71.1	71.7
Medium Trucks:	64.8	64.1	57.7	56.2	64.6	64.9
Heavy Trucks:	64.8	64.2	55.2	56.4	64.8	64.9
Vehicle Noise:	73.0	72.0	69.1	64.2	72.8	73.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	122	263	567	1,221
CNEL:	131	283	610	1,313

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: El Camino Real to West Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 50,741 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,186 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.40	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.84	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.80	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.1	72.0	70.2	64.2	72.8	73.4
Medium Trucks:	66.5	65.8	59.4	57.9	66.3	66.6
Heavy Trucks:	66.5	65.9	56.9	58.1	66.5	66.6
Vehicle Noise:	74.6	73.7	70.8	65.9	74.4	74.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	198	426	918	1,978
CNEL:	213	458	988	2,128

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: West Drive to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 50,973 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,205 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.42	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.82	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.78	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.1	72.0	70.3	64.2	72.8	73.4
Medium Trucks:	66.5	65.8	59.4	57.9	66.4	66.6
Heavy Trucks:	66.5	65.9	56.9	58.1	66.5	66.6
Vehicle Noise:	74.7	73.7	70.8	65.9	74.5	74.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	198	427	921	1,984
CNEL:	213	460	991	2,134

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Bryan Avenue to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,016 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,879 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.06	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-14.17	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-18.13	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.7	71.7	69.9	63.9	72.5	73.1
Medium Trucks:	66.1	65.5	59.1	57.5	66.0	66.2
Heavy Trucks:	66.2	65.6	56.5	57.8	66.1	66.3
Vehicle Noise:	74.3	73.4	70.4	65.6	74.1	74.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	188	405	873	1,880
CNEL:	202	436	939	2,022

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Koll Center to Fairchild Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 43,783 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,612 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.76	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.48	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.44	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.0	70.0	68.2	62.2	70.8	71.4
Medium Trucks:	64.4	63.8	57.4	55.9	64.3	64.6
Heavy Trucks:	64.5	63.9	54.8	56.1	64.5	64.6
Vehicle Noise:	72.6	71.7	68.7	63.9	72.4	72.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	116	250	539	1,161
CNEL:	125	269	580	1,249

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: MacArthur Boulevard to Koll Center

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 43,209 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,565 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.70	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.54	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.50	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.0	69.9	68.2	62.1	70.7	71.3
Medium Trucks:	64.4	63.7	57.3	55.8	64.3	64.5
Heavy Trucks:	64.4	63.8	54.8	56.0	64.4	64.5
Vehicle Noise:	72.6	71.6	68.7	63.8	72.4	72.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	248	534	1,151
CNEL:	124	267	575	1,238

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Irvine Boulevard to Portola Pakway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,920 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,386 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.95	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.28	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.24	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	62.2	61.6	55.2	53.6	62.1	62.3
Heavy Trucks:	62.3	61.7	52.6	53.9	62.2	62.4
Vehicle Noise:	70.4	69.5	66.5	61.7	70.2	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	187	403	868
CNEL:	93	201	433	934



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Warner Avenue to Edinger Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 87,609 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 7,228 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 96 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 64.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 64.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	42.438			
Road Grade: 0.0%	Medium Trucks:	42.344			
Left View: -90.0 degrees	Heavy Trucks:	42.439			
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.77	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-11.47	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-15.43	0.96	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	77.3	76.3	74.5	68.4	77.1	77.7	
Medium Trucks:	70.7	70.0	63.7	62.1	70.6	70.8	
Heavy Trucks:	70.7	70.1	61.1	62.4	70.7	70.8	
Vehicle Noise:	78.9	78.0	75.0	70.1	78.7	79.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	243	523	1,128	2,430
CNEL:	261	563	1,213	2,614

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 72,728 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 6,000 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 96 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.438 Medium Trucks: 42.344 Heavy Trucks: 42.439																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.96	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-12.28	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-16.24	0.96	-1.20	-5.31	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.5	75.4	73.7	67.6	76.2	76.8
Medium Trucks:	69.9	69.2	62.9	61.3	69.8	70.0
Heavy Trucks:	69.9	69.3	60.3	61.6	69.9	70.0
Vehicle Noise:	78.1	77.2	74.2	69.3	77.9	78.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	215	462	996	2,146
CNEL:	231	497	1,072	2,309

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Edinger Avenue to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 66,731 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,505 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 96 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 64.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 64.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 42.438				
Road Grade: 0.0%	Medium Trucks: 42.344				
Left View: -90.0 degrees	Heavy Trucks: 42.439				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.59	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-12.65	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-16.61	0.96	-1.20	-5.31	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.1	75.1	73.3	67.2	75.9	76.5
Medium Trucks:	69.5	68.9	62.5	61.0	69.4	69.6
Heavy Trucks:	69.6	69.0	59.9	61.2	69.5	69.7
Vehicle Noise:	77.7	76.8	73.8	69.0	77.5	78.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	203	437	941	2,027
CNEL:	218	470	1,012	2,180

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Walnut Avenue to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 56,825 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,688 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.76	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.48	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.44	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.3	66.5	60.4	69.1	69.7
Medium Trucks:	63.1	62.4	56.0	54.5	63.0	63.2
Heavy Trucks:	63.9	63.3	54.3	55.5	63.9	64.0
Vehicle Noise:	71.2	70.2	67.1	62.4	71.0	71.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	210	452	974
CNEL:	104	225	485	1,045

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jeffrey Road  
 Road Segment: I-5 NB Off-Ramp to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 63,919 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,273 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	5.27	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-11.97	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-15.92	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.2	69.2	67.4	61.4	70.0	70.6	
Medium Trucks:	64.0	63.3	57.0	55.4	63.9	64.1	
Heavy Trucks:	64.8	64.3	55.2	56.5	64.8	65.0	
Vehicle Noise:	72.1	71.2	68.0	63.3	71.9	72.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	107	230	496	1,069
CNEL:	115	247	532	1,146

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Poplar (Meadows) to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 51,048 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,211 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.29	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.95	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.90	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	63.5	62.9	53.8	55.1	63.4	63.6
Vehicle Noise:	70.7	69.8	66.6	62.0	70.5	71.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	195	421	907
CNEL:	97	210	452	973

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 50,925 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,201 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.28	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.96	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.91	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	63.4	62.9	53.8	55.1	63.4	63.6
Vehicle Noise:	70.7	69.8	66.6	61.9	70.5	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	195	420	905
CNEL:	97	209	451	971

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Center Drive to Poplar (Meadows)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 48,837 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,029 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.10	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.14	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.09	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5
Heavy Trucks:	63.3	62.7	53.6	54.9	63.2	63.4
Vehicle Noise:	70.5	69.6	66.4	61.8	70.3	70.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	190	409	880
CNEL:	94	203	438	944



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jeffrey Road  
 Road Segment: I-405 NB Off-Ramp to Quail Creek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 51,159 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,221 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.30	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.94	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.89	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.9	67.8	66.0	60.0	68.6	69.2	
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7	
Heavy Trucks:	63.5	62.9	53.8	55.1	63.4	63.6	
Vehicle Noise:	70.7	69.8	66.6	62.0	70.5	71.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	196	422	908
CNEL:	97	210	452	974

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Barranca Parkway to Irvine Valley College

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 48,058 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,965 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.21	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.16	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.6	67.5	65.8	59.7	68.3	68.9	
Medium Trucks:	62.3	61.7	55.3	53.8	62.2	62.5	
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3	
Vehicle Noise:	70.4	69.5	66.4	61.7	70.2	70.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	188	404	871
CNEL:	93	201	434	934

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Quail Creek to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 49,376 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,073 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.05	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.9	59.8	68.4	69.1
Medium Trucks:	62.5	61.8	55.4	53.9	62.3	62.6
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4
Vehicle Noise:	70.5	69.6	66.5	61.8	70.4	70.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	191	412	887
CNEL:	95	205	442	951

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Valley College to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,568 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,759 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.80	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.44	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.39	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2
Heavy Trucks:	63.0	62.4	53.3	54.6	62.9	63.1
Vehicle Noise:	70.2	69.3	66.1	61.5	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	390	841
CNEL:	90	194	419	902

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Trabuco Road to Hideaway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 38,141 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,147 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.21	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.17	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.5	64.8	58.7	67.3	67.9
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	69.4	68.5	65.4	60.7	69.2	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	347	747
CNEL:	80	173	372	801

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Hideaway to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 38,123 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,145 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.21	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.17	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.5	64.8	58.7	67.3	67.9
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	69.4	68.5	65.4	60.7	69.2	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	346	746
CNEL:	80	173	372	801

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Roosevelt to Grove

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 41,043 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,386 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.35	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.89	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.85	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.3	65.5	59.4	68.1	68.7
Medium Trucks:	62.1	61.4	55.0	53.5	62.0	62.2
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0
Vehicle Noise:	70.2	69.2	66.1	61.4	70.0	70.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	171	369	795
CNEL:	85	184	396	853

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Grove to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 38,887 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,208 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.11	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.13	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.08	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.3	59.2	67.8	68.4
Medium Trucks:	61.8	61.2	54.8	53.3	61.7	62.0
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	69.9	69.0	65.9	61.2	69.7	70.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	356	767
CNEL:	82	177	382	823



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Bryan Avenue to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,374 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,423 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.89	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.35	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.30	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.5	65.4	63.6	57.6	66.2	66.8	
Medium Trucks:	60.2	59.5	53.2	51.6	60.1	60.3	
Heavy Trucks:	61.1	60.5	51.4	52.7	61.0	61.2	
Vehicle Noise:	68.3	67.4	64.2	59.6	68.1	68.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	135	291	627
CNEL:	67	145	312	673

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Encore to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,548 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,200 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.16	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-18.40	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-22.35	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.4	62.3	60.6	54.5	63.1	63.7
Medium Trucks:	57.2	56.5	50.1	48.6	57.0	57.3
Heavy Trucks:	58.0	57.4	48.4	49.6	58.0	58.1
Vehicle Noise:	65.2	64.3	61.2	56.5	65.0	65.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	85	182	393
CNEL:	42	91	196	421

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Boulevard to Encore

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,094 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,163 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.30	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-18.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-22.49	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.3	62.2	60.4	54.4	63.0	63.6
Medium Trucks:	57.0	56.3	50.0	48.4	56.9	57.1
Heavy Trucks:	57.9	57.3	48.2	49.5	57.8	58.0
Vehicle Noise:	65.1	64.2	61.0	56.4	64.9	65.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	83	178	384
CNEL:	41	89	191	412

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Jeronimo Road  
 Road Segment: Goodyear to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,085 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	667 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.71	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.90	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.5	61.4	59.7	53.6	62.2	62.8
Medium Trucks:	56.3	55.6	49.2	47.7	56.1	56.4
Heavy Trucks:	57.1	56.5	47.5	48.7	57.1	57.2
Vehicle Noise:	64.3	63.4	60.3	55.6	64.1	64.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	55	118	255
CNEL:	27	59	127	273

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jeronimo Road  
 Road Segment: Alton Parkway to Goodyear

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,560 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 624 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.20	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.2	61.1	59.4	53.3	62.0	62.6
Medium Trucks:	56.0	55.3	48.9	47.4	55.9	56.1
Heavy Trucks:	56.8	56.2	47.2	48.4	56.8	56.9
Vehicle Noise:	64.0	63.1	60.0	55.3	63.9	64.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	113	243
CNEL:	26	56	121	261

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Old Laguna Canyon Road to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 53,702 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,430 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.64	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.60	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.55	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.5	68.7	62.6	71.3	71.9
Medium Trucks:	64.9	64.2	57.9	56.3	64.8	65.0
Heavy Trucks:	64.9	64.4	55.3	56.6	64.9	65.1
Vehicle Noise:	73.1	72.2	69.2	64.3	72.9	73.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	131	283	609	1,311
CNEL:	141	304	655	1,411

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Laguna Canyon Freeway to Quail Hill Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 16,770 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,384 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.41	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.61	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.1	67.1	65.3	59.2	67.9	68.5	
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6	
Heavy Trucks:	61.5	61.0	51.9	53.2	61.5	61.7	
Vehicle Noise:	69.7	68.8	65.8	60.9	69.5	70.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	269	579
CNEL:	62	134	289	623

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Discovery to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,177 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,252 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.85	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.08	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.04	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.6	64.9	58.8	67.4	68.0
Medium Trucks:	61.1	60.4	54.0	52.5	61.0	61.2
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2
Vehicle Noise:	69.3	68.3	65.4	60.5	69.1	69.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	117	251	541
CNEL:	58	125	270	583



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: I-405 Overcrossing to Pasteur

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,634 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	712 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	50.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 42.814				
Road Grade:	0.0%	Medium Trucks: 42.720				
Left View:	-90.0 degrees	Heavy Trucks: 42.814				
Right View:	90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.88	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-21.12	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.08	0.91	-1.20	-5.43	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.0	65.0	63.2	57.1	65.8	66.4	
Medium Trucks:	59.6	58.9	52.6	51.0	59.5	59.7	
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1	
Vehicle Noise:	67.7	66.8	63.8	59.0	67.5	68.0	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	342
CNEL:	37	79	171	368

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Irvine Center Drive to Discovery

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,313 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,098 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.42	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.61	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.1	64.3	58.2	66.9	67.5
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	60.5	60.0	50.9	52.2	60.5	60.7
Vehicle Noise:	68.7	67.8	64.8	59.9	68.5	69.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	107	230	496
CNEL:	53	115	248	534

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Quail Hill Parkway to I-405 Overcrossing

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,634 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 712 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.88	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-21.12	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.08	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.0	65.0	63.2	57.1	65.8	66.4	
Medium Trucks:	59.6	58.9	52.6	51.0	59.5	59.7	
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1	
Vehicle Noise:	67.7	66.8	63.8	59.0	67.5	68.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	342
CNEL:	37	79	171	368

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Pasteur to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 8,608 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 710 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-4.31	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-21.55	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-25.50	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.2	62.4	56.3	65.0	65.6
Medium Trucks:	58.6	57.9	51.6	50.0	58.5	58.7
Heavy Trucks:	58.6	58.1	49.0	50.3	58.6	58.8
Vehicle Noise:	66.8	65.9	62.9	58.0	66.6	67.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	80	172	371
CNEL:	40	86	185	399

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Waterworks to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,469 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	781 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-3.90	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-21.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-25.09	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.6	62.8	56.8	65.4	66.0
Medium Trucks:	59.0	58.4	52.0	50.5	58.9	59.1
Heavy Trucks:	59.1	58.5	49.4	50.7	59.0	59.2
Vehicle Noise:	67.2	66.3	63.3	58.5	67.0	67.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	85	183	395
CNEL:	43	92	197	425

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,308 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 603 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-5.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-22.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-26.21	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.5	63.5	61.7	55.6	64.3	64.9
Medium Trucks:	57.9	57.2	50.9	49.3	57.8	58.0
Heavy Trucks:	57.9	57.3	48.3	49.6	57.9	58.0
Vehicle Noise:	66.1	65.2	62.2	57.3	65.9	66.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	72	154	333
CNEL:	36	77	166	358

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Barranca Parkway to Waterworks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,148 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 590 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-5.12	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-22.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-26.31	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.4	63.4	61.6	55.5	64.2	64.8	
Medium Trucks:	57.8	57.1	50.8	49.2	57.7	57.9	
Heavy Trucks:	57.8	57.3	48.2	49.5	57.8	57.9	
Vehicle Noise:	66.0	65.1	62.1	57.2	65.8	66.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	152	328
CNEL:	35	76	164	353

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Lake Forest Drive  
 Road Segment: Hidden Canyon to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,408 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,601 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.36	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.60	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.56	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.5	64.8	58.7	67.3	67.9
Medium Trucks:	61.2	60.5	54.1	52.6	61.0	61.3
Heavy Trucks:	61.6	61.0	52.0	53.2	61.6	61.7
Vehicle Noise:	69.3	68.4	65.3	60.5	69.1	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	117	252	544
CNEL:	58	126	271	584



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Lake Forest Drive  
 Road Segment: Bake Parkway to Hidden Canyon (Romano)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,213 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,585 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.41	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.60	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.5	64.7	58.7	67.3	67.9
Medium Trucks:	61.1	60.4	54.1	52.5	61.0	61.2
Heavy Trucks:	61.5	60.9	51.9	53.2	61.5	61.6
Vehicle Noise:	69.2	68.3	65.3	60.5	69.0	69.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	251	540
CNEL:	58	125	269	580

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Lake Forest Drive  
 Road Segment: Tesla to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,514 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,197 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.63	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-18.86	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-22.82	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.7	63.6	61.9	55.8	64.4	65.0
Medium Trucks:	58.2	57.6	51.2	49.7	58.1	58.4
Heavy Trucks:	58.7	58.1	49.0	50.3	58.6	58.8
Vehicle Noise:	66.4	65.5	62.4	57.6	66.2	66.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	101	217	467
CNEL:	50	108	233	502

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Lake Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,204 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 512 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-2.31	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	70.80	-19.55	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	77.97	-23.50	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.1	55.1	53.3	47.3	55.9	56.5
Medium Trucks:	51.0	50.3	43.9	42.4	50.9	51.1
Heavy Trucks:	54.2	53.6	44.6	45.8	54.2	54.3
Vehicle Noise:	59.0	58.2	54.3	50.4	58.9	59.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	42	90
CNEL:	10	21	45	96

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Lynx  
 Road Segment: Irvine Boulevard to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1,244 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	103 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-9.28	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-26.52	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-30.48	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	50.1	49.0	47.3	41.2	49.8	50.4
Medium Trucks:	44.9	44.3	37.9	36.3	44.8	45.0
Heavy Trucks:	48.1	47.5	38.5	39.8	48.1	48.2
Vehicle Noise:	53.0	52.1	48.2	44.3	52.8	53.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	3	6	12	27
CNEL:	3	6	13	28

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: I-405 SB Off-Ramp to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 62,587 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,163 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.93	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-13.31	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-17.27	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	75.0	74.0	72.2	66.2	74.8	75.4	
Medium Trucks:	68.3	67.6	61.2	59.7	68.2	68.4	
Heavy Trucks:	68.0	67.4	58.3	59.6	67.9	68.1	
Vehicle Noise:	76.5	75.6	72.7	67.8	76.3	76.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	264	568	1,223	2,636
CNEL:	284	612	1,318	2,839

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Main Street to I-405 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 61,233 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,052 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 60 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.83	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-13.40	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-17.36	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.9	73.9	72.1	66.1	74.7	75.3
Medium Trucks:	68.2	67.5	61.1	59.6	68.1	68.3
Heavy Trucks:	67.9	67.3	58.2	59.5	67.8	68.0
Vehicle Noise:	76.4	75.5	72.6	67.7	76.2	76.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	260	560	1,206	2,598
CNEL:	280	603	1,299	2,798

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: I-405 NB Off-Ramp and I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 60,411 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,984 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.78	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-13.46	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-17.42	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.9	73.8	72.1	66.0	74.6	75.2
Medium Trucks:	68.1	67.4	61.1	59.5	68.0	68.2
Heavy Trucks:	67.8	67.2	58.2	59.4	67.8	67.9
Vehicle Noise:	76.4	75.4	72.6	67.6	76.2	76.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	257	555	1,195	2,574
CNEL:	277	597	1,287	2,773

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Jamboree Road to Fairchild Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,795 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,283 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.03	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.98	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	64.9	58.9	67.5	68.1
Medium Trucks:	61.5	60.9	54.5	53.0	61.4	61.6
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	69.6	68.7	65.6	60.9	69.4	69.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	357	768
CNEL:	82	178	382	824



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Fairchild Road to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,243 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,238 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.04	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.7	64.9	58.8	67.5	68.1
Medium Trucks:	61.5	60.8	54.4	52.9	61.4	61.6
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	69.5	68.6	65.5	60.8	69.4	69.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	164	353	761
CNEL:	82	176	379	816

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Fitch to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 42,124 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,475 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.46	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.78	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.74	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.4	65.6	59.5	68.2	68.8
Medium Trucks:	62.2	61.5	55.2	53.6	62.1	62.3
Heavy Trucks:	63.0	62.4	53.4	54.7	63.0	63.1
Vehicle Noise:	70.3	69.4	66.2	61.5	70.1	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	376	809
CNEL:	87	187	403	868

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Michelson Drive to Douglas

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 46,388 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,827 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.88	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-13.36	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-17.32	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	69.2	67.4	61.3	70.0	70.6
Medium Trucks:	64.0	63.3	57.0	55.4	63.9	64.1
Heavy Trucks:	64.8	64.2	55.2	56.5	64.8	64.9
Vehicle Noise:	72.1	71.2	68.0	63.3	71.9	72.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	133	287	619	1,333
CNEL:	143	308	664	1,430

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Douglas to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,645 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,766 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 56.593				
Road Grade: 0.0%	Medium Trucks: 56.522				
Left View: -90.0 degrees	Heavy Trucks: 56.593				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.81	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-13.43	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-17.39	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	69.1	67.3	61.3	69.9	70.5
Medium Trucks:	63.9	63.2	56.9	55.3	63.8	64.0
Heavy Trucks:	64.8	64.2	55.1	56.4	64.7	64.9
Vehicle Noise:	72.0	71.1	67.9	63.3	71.8	72.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	132	284	612	1,318
CNEL:	141	305	656	1,414

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Skypark to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,482 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,762 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.46	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.78	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.73	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.4	64.6	58.6	67.2	67.8
Medium Trucks:	61.2	60.5	54.2	52.6	61.1	61.3
Heavy Trucks:	62.0	61.4	52.4	53.7	62.0	62.1
Vehicle Noise:	69.3	68.4	65.2	60.5	69.1	69.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	150	322	694
CNEL:	74	160	346	745

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Redhill Avenue to Skypark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,170 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,324 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.48	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.2	63.4	57.4	66.0	66.6
Medium Trucks:	60.0	59.4	53.0	51.5	59.9	60.1
Heavy Trucks:	60.9	60.3	51.3	52.5	60.9	61.0
Vehicle Noise:	68.1	67.2	64.1	59.4	67.9	68.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	283	610
CNEL:	65	141	304	654

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Birch Street to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,485 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,773 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.53	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.70	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.66	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.0	62.3	56.2	64.8	65.4
Medium Trucks:	58.9	58.2	51.8	50.3	58.7	59.0
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8
Vehicle Noise:	66.9	66.0	62.9	58.2	66.7	67.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	110	236	509
CNEL:	55	118	254	546

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Campus Drive to Birch Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,205 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,997 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.05	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-16.19	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-20.14	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.3	64.6	58.5	67.1	67.7
Medium Trucks:	61.2	60.5	54.1	52.6	61.0	61.3
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	69.2	68.3	65.2	60.5	69.0	69.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	186	401	864
CNEL:	93	200	430	927



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Main Street  
 Road Segment: Gillette Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 46,084 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,802 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.85	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.39	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.35	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.8	66.0	59.9	68.6	69.2
Medium Trucks:	62.6	61.9	55.5	54.0	62.5	62.7
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	70.7	69.7	66.6	61.9	70.5	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	399	859
CNEL:	92	199	428	922

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Main Street  
 Road Segment: MacArthur Boulevard to Mercantile

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,229 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,319 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.26	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.98	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.94	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.2	65.4	59.3	68.0	68.6
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.8	62.2	53.2	54.5	62.8	62.9
Vehicle Noise:	70.1	69.2	66.0	61.3	69.9	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	169	364	785
CNEL:	84	181	391	842

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Main Street  
 Road Segment: Executive Park to MacArthur Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,777 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,374 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.80	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.43	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.39	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	60.1	59.4	53.1	51.5	60.0	60.2
Heavy Trucks:	61.0	60.4	51.3	52.6	60.9	61.1
Vehicle Noise:	68.2	67.3	64.1	59.5	68.0	68.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	287	619
CNEL:	66	143	308	664

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Main Street  
 Road Segment: Von Karman Avenue to Cartwright

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,808 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,377 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.81	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.43	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.39	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	60.1	59.5	53.1	51.5	60.0	60.2
Heavy Trucks:	61.0	60.4	51.3	52.6	61.0	61.1
Vehicle Noise:	68.2	67.3	64.2	59.5	68.0	68.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	287	619
CNEL:	66	143	308	664

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Main Street  
 Road Segment: McDermott to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,518 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,188 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.45	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.79	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.75	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.0	64.9	63.2	57.1	65.8	66.4	
Medium Trucks:	59.8	59.1	52.7	51.2	59.6	59.9	
Heavy Trucks:	60.6	60.0	51.0	52.2	60.6	60.7	
Vehicle Noise:	67.8	66.9	63.8	59.1	67.7	68.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	126	272	586
CNEL:	63	135	292	629

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Main Street  
 Road Segment: Red Hill Avenue to Executive Circle

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,974 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,143 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.36	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.88	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.84	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.9	63.1	57.0	65.7	66.3
Medium Trucks:	59.7	59.0	52.6	51.1	59.6	59.8
Heavy Trucks:	60.5	59.9	50.9	52.1	60.5	60.6
Vehicle Noise:	67.8	66.8	63.7	59.0	67.6	68.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	268	578
CNEL:	62	134	288	620

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Main Street  
 Road Segment: Jamboree Road to Union

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,130 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,073 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.22	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.02	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.98	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.8	64.7	62.9	56.9	65.5	66.1
Medium Trucks:	59.5	58.9	52.5	51.0	59.4	59.6
Heavy Trucks:	60.4	59.8	50.8	52.0	60.4	60.5
Vehicle Noise:	67.6	66.7	63.6	58.9	67.4	67.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	122	262	565
CNEL:	61	131	282	606

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Main Street  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,660 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,209 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.12	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.36	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.32	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.1	64.0	62.3	56.2	64.8	65.4	
Medium Trucks:	58.8	58.2	51.8	50.3	58.7	59.0	
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8	
Vehicle Noise:	66.9	66.0	62.9	58.2	66.7	67.2	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	176	378
CNEL:	41	87	188	406



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Main Street  
 Road Segment: Siglo to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,322 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,007 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.07	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.16	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.12	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.6	64.6	62.8	56.8	65.4	66.0	
Medium Trucks:	59.4	58.7	52.4	50.8	59.3	59.5	
Heavy Trucks:	60.2	59.6	50.6	51.9	60.2	60.3	
Vehicle Noise:	67.5	66.6	63.4	58.7	67.3	67.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	119	257	553
CNEL:	59	128	275	593

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Main Street  
 Road Segment: Veneto to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,421 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,932 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.91	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.33	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.28	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.5	64.4	62.6	56.6	65.2	65.8
Medium Trucks:	59.2	58.6	52.2	50.6	59.1	59.3
Heavy Trucks:	60.1	59.5	50.4	51.7	60.1	60.2
Vehicle Noise:	67.3	66.4	63.3	58.6	67.1	67.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	250	539
CNEL:	58	125	269	579

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Main Street  
 Road Segment: Paseo Westpark to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,129 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,001 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.95	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.19	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.14	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.2	61.4	55.4	64.0	64.6
Medium Trucks:	58.0	57.4	51.0	49.4	57.9	58.1
Heavy Trucks:	58.9	58.3	49.2	50.5	58.8	59.0
Vehicle Noise:	66.1	65.2	62.0	57.4	65.9	66.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	72	155	334
CNEL:	36	77	166	358

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Main Street  
 Road Segment: Harvard Avenue to San Mateo

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,988 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 989 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.19	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.2	63.2	61.4	55.3	64.0	64.6	
Medium Trucks:	58.0	57.3	50.9	49.4	57.9	58.1	
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9	
Vehicle Noise:	66.1	65.1	62.0	57.3	65.9	66.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	154	331
CNEL:	36	76	165	355

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Marine Way  
 Road Segment: Sand Canyon Avenue to Ridge Valley (O Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,977 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,381 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 42.814				
Road Grade: 0.0%		Medium Trucks: 42.720				
Left View: -90.0 degrees		Heavy Trucks: 42.814				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.85	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	77.72	-13.39	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	82.99	-17.34	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.0	67.2	61.2	69.8	70.4
Medium Trucks:	64.0	63.4	57.0	55.5	63.9	64.2
Heavy Trucks:	65.4	64.8	55.7	57.0	65.3	65.5
Vehicle Noise:	72.1	71.2	67.9	63.4	71.9	72.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	310	668
CNEL:	72	154	332	716

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Marine Way  
 Road Segment: Alton Parkway to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,132 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,733 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.93	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-14.31	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-18.27	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.1	64.4	58.3	66.9	67.5
Medium Trucks:	61.2	60.5	54.1	52.6	61.0	61.3
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	69.2	68.3	65.0	60.5	69.0	69.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	249	537
CNEL:	58	124	267	575

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Marine Way  
 Road Segment: Lynx to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,174 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,654 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.80	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-14.44	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-18.39	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.0	64.2	58.2	66.8	67.4
Medium Trucks:	61.0	60.4	54.0	52.5	60.9	61.2
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5
Vehicle Noise:	69.1	68.2	64.9	60.4	68.9	69.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	113	245	527
CNEL:	56	122	262	564

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Marine Way  
 Road Segment: County Access to Treble

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,495 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,186 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.96	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.28	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.24	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.2	65.2	63.4	57.3	66.0	66.6	
Medium Trucks:	60.2	59.5	53.2	51.6	60.1	60.3	
Heavy Trucks:	61.5	60.9	51.9	53.1	61.5	61.6	
Vehicle Noise:	68.2	67.3	64.1	59.5	68.0	68.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	100	215	463
CNEL:	50	107	230	496



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Marine Way  
 Road Segment: Ridge Valley (O Street) to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,478 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,102 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.79	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.41	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.1	65.0	63.2	57.2	65.8	66.4	
Medium Trucks:	60.0	59.4	53.0	51.4	59.9	60.1	
Heavy Trucks:	61.3	60.8	51.7	53.0	61.3	61.4	
Vehicle Noise:	68.1	67.2	63.9	59.3	67.9	68.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	97	209	451
CNEL:	48	104	224	483

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Marine Way  
 Road Segment: Skyhawk to County Access

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,553 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,696 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.85	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.34	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.1	62.3	56.2	64.9	65.5
Medium Trucks:	59.1	58.4	52.1	50.5	59.0	59.2
Heavy Trucks:	60.4	59.8	50.8	52.0	60.4	60.5
Vehicle Noise:	67.1	66.2	63.0	58.4	66.9	67.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	181	391
CNEL:	42	90	194	418

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Marine Way  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,922 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,479 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.94	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.5	63.5	61.7	55.6	64.3	64.9	
Medium Trucks:	58.5	57.8	51.5	49.9	58.4	58.6	
Heavy Trucks:	59.8	59.2	50.2	51.4	59.8	59.9	
Vehicle Noise:	66.5	65.6	62.4	57.8	66.3	66.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	166	357
CNEL:	38	82	177	382

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Marine Way  
 Road Segment: Treble to Lynx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,993 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,402 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.03	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.21	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.17	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.2	61.5	55.4	64.0	64.6
Medium Trucks:	58.3	57.6	51.2	49.7	58.1	58.4
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7
Vehicle Noise:	66.3	65.4	62.1	57.6	66.1	66.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	160	344
CNEL:	37	79	171	369

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: McGaw Avenue  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,638 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,208 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-0.04	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-17.28	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-21.23	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.0	61.0	59.2	53.1	61.8	62.4	
Medium Trucks:	56.2	55.6	49.2	47.7	56.1	56.3	
Heavy Trucks:	58.1	57.5	48.5	49.7	58.1	58.2	
Vehicle Noise:	64.2	63.4	59.9	55.5	64.1	64.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	117	251
CNEL:	27	58	125	268

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: McGaw Avenue  
 Road Segment: Red Hill Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,434 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,191 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 35 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-0.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-17.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-21.30	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.0	60.9	59.1	53.1	61.7	62.3
Medium Trucks:	56.2	55.5	49.1	47.6	56.1	56.3
Heavy Trucks:	58.0	57.4	48.4	49.7	58.0	58.1
Vehicle Noise:	64.2	63.3	59.9	55.5	64.0	64.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	115	249
CNEL:	27	57	123	266

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: McGaw Avenue  
 Road Segment: Daimler to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,107 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	751 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-2.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-19.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-23.30	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.0	58.9	57.1	51.1	59.7	60.3
Medium Trucks:	54.2	53.5	47.1	45.6	54.1	54.3
Heavy Trucks:	56.0	55.4	46.4	47.7	56.0	56.1
Vehicle Noise:	62.2	61.3	57.9	53.5	62.0	62.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	85	183
CNEL:	20	42	91	196

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: McGaw Avenue  
 Road Segment: Jamboree Road to Murphy Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,648 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 383 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-22.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-26.22	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	57.0	56.0	54.2	48.1	56.8	57.4	
Medium Trucks:	51.3	50.6	44.2	42.7	51.1	51.4	
Heavy Trucks:	53.1	52.5	43.5	44.7	53.1	53.2	
Vehicle Noise:	59.3	58.4	54.9	50.6	59.1	59.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	25	54	117
CNEL:	12	27	58	125



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Meadowood  
 Road Segment: Culver Drive to Canyonwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	10,668 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	880 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		57.786		
Left View:	-90.0 degrees	Medium Trucks:		57.717		
Right View:	90.0 degrees	Heavy Trucks:		57.787		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	0.05	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-17.19	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-21.15	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.5	55.5	53.7	47.7	56.3	56.9
Medium Trucks:	51.4	50.7	44.3	42.8	51.2	51.5
Heavy Trucks:	54.6	54.0	45.0	46.2	54.6	54.7
Vehicle Noise:	59.4	58.6	54.7	50.8	59.3	59.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	26	56	120
CNEL:	13	27	59	128

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Meridian  
 Road Segment: Spectrum to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,808 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 232 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-6.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-23.78	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-27.74	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	53.0	51.9	50.1	44.1	52.7	53.3	
Medium Trucks:	47.5	46.8	40.4	38.9	47.3	47.6	
Heavy Trucks:	49.9	49.4	40.3	41.6	49.9	50.0	
Vehicle Noise:	55.5	54.6	51.0	46.8	55.3	55.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	14	30	65
CNEL:	7	15	32	70

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Meridian  
 Road Segment: Alton Parkway to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,259 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 186 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-7.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-24.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-28.68	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	52.0	51.0	49.2	43.1	51.8	52.4	
Medium Trucks:	46.5	45.8	39.5	37.9	46.4	46.6	
Heavy Trucks:	49.0	48.4	39.4	40.6	49.0	49.1	
Vehicle Noise:	54.5	53.7	50.0	45.8	54.4	54.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	12	26	57
CNEL:	6	13	28	60

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Merit  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,772 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 311 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-4.47	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-21.71	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-25.66	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.9	53.8	52.1	46.0	54.6	55.2
Medium Trucks:	49.7	49.1	42.7	41.2	49.6	49.9
Heavy Trucks:	52.9	52.4	43.3	44.6	52.9	53.1
Vehicle Noise:	57.8	56.9	53.0	49.1	57.6	58.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	12	26	56
CNEL:	6	13	28	60

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Michelson Drive  
 Road Segment: Riparian to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,376 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,094 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.77	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.47	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.42	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	65.0	63.2	57.2	65.8	66.4
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1
Heavy Trucks:	61.3	60.7	51.7	53.0	61.3	61.4
Vehicle Noise:	68.0	67.1	63.9	59.3	67.9	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	97	209	450
CNEL:	48	104	224	482

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Michelson Drive  
 Road Segment: Almond Tree Lane to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,160 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 838 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 37.138				
Road Grade: 0.0%	Medium Trucks: 37.030				
Left View: -90.0 degrees	Heavy Trucks: 37.139				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.21	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-19.44	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-23.40	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	63.9	62.1	56.1	64.7	65.3
Medium Trucks:	58.9	58.3	51.9	50.3	58.8	59.0
Heavy Trucks:	60.2	59.6	50.6	51.9	60.2	60.3
Vehicle Noise:	66.9	66.1	62.8	58.2	66.8	67.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	49	106	228
CNEL:	24	53	113	244

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Michelson Drive  
 Road Segment: Von Karman Avenue to Obsidian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,498 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,021 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.62	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.62	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.58	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.9	64.8	63.1	57.0	65.6	66.2	
Medium Trucks:	59.9	59.2	52.8	51.3	59.7	60.0	
Heavy Trucks:	61.2	60.6	51.5	52.8	61.2	61.3	
Vehicle Noise:	67.9	67.0	63.7	59.2	67.7	68.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	95	204	439
CNEL:	47	101	218	470

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Michelson Drive  
 Road Segment: Parkside to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,511 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,857 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.99	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.95	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.5	64.5	62.7	56.6	65.3	65.9	
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6	
Heavy Trucks:	60.8	60.2	51.2	52.4	60.8	60.9	
Vehicle Noise:	67.5	66.6	63.4	58.8	67.3	67.8	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	89	193	415
CNEL:	44	96	206	445



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Michelson Drive  
 Road Segment: Gillman to Seton/Sandburg Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 784 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.50	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-19.74	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-23.69	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.6	63.6	61.8	55.8	64.4	65.0	
Medium Trucks:	58.6	58.0	51.6	50.1	58.5	58.7	
Heavy Trucks:	59.9	59.3	50.3	51.6	59.9	60.0	
Vehicle Noise:	66.7	65.8	62.5	57.9	66.5	66.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	101	218
CNEL:	23	50	108	234

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Michelson Drive  
 Road Segment: Carlson to Prince

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,204 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,244 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.07	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	77.72	-15.17	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	82.99	-19.12	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.0	64.0	62.2	56.2	64.8	65.4
Medium Trucks:	59.0	58.3	52.0	50.4	58.9	59.1
Heavy Trucks:	60.3	59.8	50.7	52.0	60.3	60.4
Vehicle Noise:	67.1	66.2	62.9	58.3	66.9	67.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	100	215	464
CNEL:	50	107	231	497

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Michelson Drive  
 Road Segment: MacArthur Boulevard to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,112 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,742 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.97	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.27	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.22	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.2	62.4	56.4	65.0	65.6
Medium Trucks:	59.2	58.5	52.2	50.6	59.1	59.3
Heavy Trucks:	60.5	59.9	50.9	52.2	60.5	60.6
Vehicle Noise:	67.2	66.3	63.1	58.5	67.1	67.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	86	185	398
CNEL:	43	92	198	426

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Michelson Drive  
 Road Segment: Harvard Avenue to Parkside

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,076 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,491 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.30	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.94	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.90	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.5	61.7	55.7	64.3	64.9
Medium Trucks:	58.5	57.9	51.5	50.0	58.4	58.6
Heavy Trucks:	59.8	59.3	50.2	51.5	59.8	60.0
Vehicle Noise:	66.6	65.7	62.4	57.8	66.4	66.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	166	359
CNEL:	38	83	178	384

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Michelson Drive  
 Road Segment: Bixby to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 18,256 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,506 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.86	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.6	63.5	61.8	55.7	64.3	64.9	
Medium Trucks:	58.6	57.9	51.5	50.0	58.5	58.7	
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0	
Vehicle Noise:	66.6	65.7	62.4	57.9	66.4	66.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	168	361
CNEL:	39	83	179	387

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Michelson Drive  
 Road Segment: Jamboree Road to Carlson

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,363 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,092 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.77	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.47	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.43	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.3	64.5	58.4	67.1	67.7
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	69.3	68.4	65.2	60.6	69.2	69.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	245	527
CNEL:	56	122	262	564

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Michelson Drive  
 Road Segment: Teller to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,464 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,101 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 47.329				
Road Grade: 0.0%	Medium Trucks: 47.244				
Left View: -90.0 degrees	Heavy Trucks: 47.329				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.78	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.45	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.41	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.3	64.5	58.5	67.1	67.7
Medium Trucks:	61.3	60.7	54.3	52.7	61.2	61.4
Heavy Trucks:	62.6	62.1	53.0	54.3	62.6	62.7
Vehicle Noise:	69.4	68.5	65.2	60.6	69.2	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	245	528
CNEL:	57	122	263	566

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Michelson Drive  
 Road Segment: Jordan East to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,991 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	577 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	30.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	30.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 29.547				
Road Grade:	0.0%	Medium Trucks: 29.411				
Left View:	-90.0 degrees	Heavy Trucks: 29.547				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.83	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	77.72	-21.07	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	82.99	-25.02	3.32	-1.20	-5.77	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.8	63.7	62.0	55.9	64.5	65.1
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2
Vehicle Noise:	66.8	65.9	62.6	58.1	66.6	67.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	83	179
CNEL:	19	41	89	192



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Michelson Drive  
 Road Segment: Culver Drive to Angell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,947 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 738 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 16 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 39.306 Medium Trucks: 39.205 Heavy Trucks: 39.307																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.76	1.46	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-20.00	1.48	-1.20	-5.08	0.000	0.000
Heavy Trucks:	82.99	-23.95	1.46	-1.20	-5.56	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.0	63.0	61.2	55.1	63.8	64.4
Medium Trucks:	58.0	57.3	51.0	49.4	57.9	58.1
Heavy Trucks:	59.3	58.7	49.7	50.9	59.3	59.4
Vehicle Noise:	66.0	65.1	61.9	57.3	65.8	66.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	46	98	211
CNEL:	23	49	105	226

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Modjeska (A Street)  
 Road Segment: Portola Springs to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,789 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,138 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 24 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 30.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 30.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 27.659				
Road Grade: 0.0%	Medium Trucks: 27.514				
Left View: -90.0 degrees	Heavy Trucks: 27.659				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.39	3.75	-1.20	-4.81	0.000	0.000
Medium Trucks:	79.45	-18.63	3.79	-1.20	-5.14	0.000	0.000
Heavy Trucks:	84.25	-22.59	3.75	-1.20	-5.77	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.6	68.6	66.8	60.7	69.4	70.0	
Medium Trucks:	63.4	62.7	56.4	54.8	63.3	63.5	
Heavy Trucks:	64.2	63.6	54.6	55.8	64.2	64.3	
Vehicle Noise:	71.5	70.6	67.4	62.7	71.3	71.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	79	169	365
CNEL:	39	84	182	391

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Modjeska (A Street)  
 Road Segment: South of Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1,833 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	151 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-10.15	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-27.39	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-31.35	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.9	57.9	56.1	50.1	58.7	59.3
Medium Trucks:	52.7	52.0	45.7	44.1	52.6	52.8
Heavy Trucks:	53.5	53.0	43.9	45.2	53.5	53.6
Vehicle Noise:	60.8	59.9	56.7	52.0	60.6	61.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	41	88
CNEL:	9	20	44	95

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Muirlands Boulevard  
 Road Segment: Bake Parkway to City Limits

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,023 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,239 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.21	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.1	62.4	56.3	64.9	65.5
Medium Trucks:	59.0	58.3	51.9	50.4	58.8	59.1
Heavy Trucks:	59.8	59.2	50.2	51.4	59.8	59.9
Vehicle Noise:	67.0	66.1	63.0	58.3	66.8	67.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	83	179	385
CNEL:	41	89	192	413

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Muirlands Boulevard  
 Road Segment: Alton Parkway to Sterling

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,701 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 965 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.30	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.1	63.0	61.3	55.2	63.8	64.5
Medium Trucks:	57.9	57.2	50.8	49.3	57.8	58.0
Heavy Trucks:	58.7	58.1	49.1	50.3	58.7	58.8
Vehicle Noise:	65.9	65.0	61.9	57.2	65.8	66.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	70	151	326
CNEL:	35	75	162	349

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Muirlands Boulevard  
 Road Segment: Wrigley to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,970 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 988 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.20	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.1	61.4	55.3	63.9	64.6
Medium Trucks:	58.0	57.3	50.9	49.4	57.8	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.0	65.1	62.0	57.3	65.9	66.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	331
CNEL:	35	76	165	355

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Newport Coast Drive  
 Road Segment: SR-73 NB Off-Ramp to Turtle Ridge

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,365 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,433 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.12	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.12	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.07	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.3	61.6	55.5	64.1	64.7
Medium Trucks:	58.4	57.7	51.3	49.8	58.2	58.5
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8
Vehicle Noise:	66.4	65.5	62.2	57.7	66.2	66.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	75	162	349
CNEL:	37	81	174	374

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Newport Coast Drive  
 Road Segment: Turtle Crest to Bonita Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,158 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,003 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.43	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.66	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.62	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.8	61.8	60.0	54.0	62.6	63.2	
Medium Trucks:	56.8	56.1	49.8	48.2	56.7	56.9	
Heavy Trucks:	58.1	57.5	48.5	49.8	58.1	58.2	
Vehicle Noise:	64.8	64.0	60.7	56.1	64.7	65.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	59	128	275
CNEL:	29	64	137	295



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Nightmist  
 Road Segment: Sand Canyon Avenue to Tulip (Road C)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,178 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 922 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.78	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.74	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	59.0	57.9	56.1	50.1	58.7	59.3	
Medium Trucks:	53.5	52.8	46.4	44.9	53.3	53.6	
Heavy Trucks:	55.9	55.4	46.3	47.6	55.9	56.0	
Vehicle Noise:	61.5	60.6	57.0	52.8	61.3	61.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	16	35	76	164
CNEL:	18	38	81	175

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Northwood  
 Road Segment: Yale Avenue to Savannah

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,798 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	396 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-4.88	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-22.12	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-26.08	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.1	59.0	57.2	51.2	59.8	60.4
Medium Trucks:	54.3	53.6	47.2	45.7	54.2	54.4
Heavy Trucks:	56.1	55.5	46.5	47.8	56.1	56.2
Vehicle Noise:	62.3	61.4	58.0	53.6	62.1	62.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	111
CNEL:	12	26	55	119

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Northwood  
 Road Segment: Goldrush to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,833 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	316 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.86	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-23.10	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-27.05	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.1	58.0	56.2	50.2	58.8	59.4
Medium Trucks:	53.3	52.6	46.3	44.7	53.2	53.4
Heavy Trucks:	55.1	54.6	45.5	46.8	55.1	55.3
Vehicle Noise:	61.3	60.4	57.0	52.6	61.1	61.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	10	21	45	96
CNEL:	10	22	48	103

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Oak Canyon Drive  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,331 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,100 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 37.138				
Road Grade: 0.0%	Medium Trucks: 37.030				
Left View: -90.0 degrees	Heavy Trucks: 37.139				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.54	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-18.78	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-22.73	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.6	66.5	64.7	58.7	67.3	67.9	
Medium Trucks:	61.3	60.7	54.3	52.7	61.2	61.4	
Heavy Trucks:	62.2	61.6	52.5	53.8	62.1	62.3	
Vehicle Noise:	69.4	68.5	65.3	60.7	69.2	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	154	332
CNEL:	36	77	165	356

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Pacifica  
 Road Segment: Gateway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,784 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,055 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.40	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.1	62.0	60.2	54.2	62.8	63.4
Medium Trucks:	57.0	56.4	50.0	48.5	56.9	57.1
Heavy Trucks:	58.3	57.8	48.7	50.0	58.3	58.5
Vehicle Noise:	65.1	64.2	60.9	56.3	64.9	65.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	132	285
CNEL:	30	66	142	305

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Pacifica  
 Road Segment: Alton Parkway to Gateway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,769 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	806 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.38	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.61	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.57	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	60.8	59.1	53.0	61.6	62.2
Medium Trucks:	55.9	55.2	48.8	47.3	55.7	56.0
Heavy Trucks:	57.2	56.6	47.6	48.8	57.2	57.3
Vehicle Noise:	63.9	63.0	59.7	55.2	63.7	64.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	51	110	238
CNEL:	25	55	118	255

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative      Project Name: Irvine GP  
 Road Name: Pacifica      Job Number: 15937  
 Road Segment: Irvine Center Drive to Fortune Drive (Spectrum Center Drive)

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,054 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	582 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.79	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.03	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.98	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.5	59.4	57.6	51.6	60.2	60.8
Medium Trucks:	54.4	53.8	47.4	45.9	54.3	54.6
Heavy Trucks:	55.8	55.2	46.1	47.4	55.7	55.9
Vehicle Noise:	62.5	61.6	58.3	53.8	62.3	62.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	41	89	192
CNEL:	21	44	95	205

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Pacifica  
 Road Segment: Meridian to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,576 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 377 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.67	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-22.91	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-26.86	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	58.6	57.5	55.8	49.7	58.3	58.9	
Medium Trucks:	52.6	51.9	45.5	44.0	52.5	52.7	
Heavy Trucks:	53.9	53.3	44.3	45.5	53.9	54.0	
Vehicle Noise:	60.6	59.7	56.4	51.9	60.4	60.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	31	67	144
CNEL:	15	33	71	154



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Park Place  
 Road Segment: Christamon South to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,737 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 308 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-5.30	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-22.54	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-26.49	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	54.2	53.1	51.4	45.3	53.9	54.5	
Medium Trucks:	48.7	48.0	41.7	40.1	48.6	48.8	
Heavy Trucks:	51.2	50.6	41.6	42.8	51.2	51.3	
Vehicle Noise:	56.7	55.8	52.2	48.0	56.5	57.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	79
CNEL:	8	18	39	84

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative Project Name: Irvine GP  
 Road Name: Portola Parkway Job Number: 15937  
 Road Segment: Bee Canyon Access Road to Sand Canyon Avenue

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,814 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,130 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos:	77.5%	12.9%	9.6%	97.42%
	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
	<b>Noise Source Elevations (in feet)</b>				
	Autos:	2.000			
	Medium Trucks:	4.000			
	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos:	57.786			
	Medium Trucks:	57.717			
	Heavy Trucks:	57.787			

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.46	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.78	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.73	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	68.9	67.2	61.1	69.7	70.3
Medium Trucks:	63.4	62.7	56.4	54.8	63.3	63.5
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	71.6	70.6	67.7	62.8	71.4	71.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	358	772
CNEL:	83	179	385	830

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Portola Parkway  
 Road Segment: Jeffrey Road to Bee Canyon Access Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,724 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,122 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.45	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.79	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.75	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	68.9	67.2	61.1	69.7	70.3
Medium Trucks:	63.4	62.7	56.3	54.8	63.3	63.5
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	71.6	70.6	67.7	62.8	71.4	71.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	357	770
CNEL:	83	178	384	828

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Portola Parkway  
 Road Segment: Arrowhead to Ridge Valley Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,934 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,975 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.13	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.06	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.8	60.8	69.4	70.0
Medium Trucks:	63.1	62.4	56.0	54.5	62.9	63.2
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	71.2	70.3	67.4	62.5	71.0	71.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	158	340	734
CNEL:	79	170	366	789

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Portola Parkway  
 Road Segment: Sand Canyon Avenue to Arrowhead

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,926 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,809 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.49	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.44	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.3	68.2	66.5	60.4	69.0	69.6	
Medium Trucks:	62.7	62.0	55.6	54.1	62.6	62.8	
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8	
Vehicle Noise:	70.9	69.9	67.0	62.1	70.7	71.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	149	321	692
CNEL:	74	160	346	744

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Portola Parkway  
 Road Segment: Portola Springs to SR-241 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,392 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,435 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.49	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.45	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.2	65.5	59.4	68.0	68.6	
Medium Trucks:	61.7	61.0	54.6	53.1	61.6	61.8	
Heavy Trucks:	61.7	61.1	52.1	53.3	61.7	61.8	
Vehicle Noise:	69.9	68.9	66.0	61.1	69.7	70.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	128	275	593
CNEL:	64	137	296	638

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Portola Parkway  
 Road Segment: Gatepark to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,092 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,483 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.13	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.11	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.07	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	67.9	66.2	60.1	68.7	69.4
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5
Heavy Trucks:	62.4	61.8	52.8	54.1	62.4	62.5
Vehicle Noise:	70.6	69.7	66.7	61.8	70.4	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	192	414	891
CNEL:	96	207	445	959

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Portola Parkway  
 Road Segment: ETC-6 (SR-261) NB Off-Ramp to Gatepark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,669 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,448 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.07	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.17	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.13	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.9	66.1	60.1	68.7	69.3
Medium Trucks:	62.3	61.7	55.3	53.8	62.2	62.5
Heavy Trucks:	62.4	61.8	52.7	54.0	62.4	62.5
Vehicle Noise:	70.5	69.6	66.6	61.8	70.3	70.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	190	410	883
CNEL:	95	205	441	950



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Portola Parkway  
 Road Segment: SR-261 SB Off-Ramp to SR-261 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,810 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,377 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.94	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.30	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.26	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.8	67.8	66.0	59.9	68.6	69.2	
Medium Trucks:	62.2	61.5	55.2	53.6	62.1	62.3	
Heavy Trucks:	62.2	61.7	52.6	53.9	62.2	62.4	
Vehicle Noise:	70.4	69.5	66.5	61.6	70.2	70.7	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	187	402	866
CNEL:	93	201	432	931

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Portola Parkway  
 Road Segment: Jamboree Road to Bellevue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,532 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,354 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.90	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.34	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.30	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.2	61.5	55.1	53.6	62.1	62.3
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	70.4	69.4	66.5	61.6	70.2	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	399	860
CNEL:	93	199	430	925

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Portola Parkway  
 Road Segment: Bellevue to ETC-6 (SR-261) SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,239 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,330 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.85	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.39	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.34	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.7	65.9	59.8	68.5	69.1	
Medium Trucks:	62.1	61.5	55.1	53.5	62.0	62.2	
Heavy Trucks:	62.2	61.6	52.5	53.8	62.1	62.3	
Vehicle Noise:	70.3	69.4	66.4	61.6	70.1	70.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	184	397	854
CNEL:	92	198	427	919

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Portola Parkway  
 Road Segment: Yale Avenue to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,075 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,234 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.57	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.53	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.6	67.5	65.7	59.7	68.3	68.9	
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.1	
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1	
Vehicle Noise:	70.1	69.2	66.2	61.4	69.9	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	179	386	831
CNEL:	89	193	415	894

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Portola Parkway  
 Road Segment: Culver Drive to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,470 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,936 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.05	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.19	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.15	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.9	65.1	59.0	67.7	68.3
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4
Heavy Trucks:	61.4	60.8	51.7	53.0	61.3	61.5
Vehicle Noise:	69.5	68.6	65.6	60.8	69.3	69.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	163	351	755
CNEL:	81	175	377	812

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Portola Parkway  
 Road Segment: Silverado to Portola Springs

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,381 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,021 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.73	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.97	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.92	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.8	65.7	64.0	57.9	66.5	67.1	
Medium Trucks:	60.2	59.5	53.2	51.6	60.1	60.3	
Heavy Trucks:	60.2	59.6	50.6	51.9	60.2	60.3	
Vehicle Noise:	68.4	67.5	64.5	59.6	68.2	68.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	102	219	473
CNEL:	51	110	236	509

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Pusan  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,449 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 202 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 25 mph																					
Near/Far Lane Distance: 12 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 37.5 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 37.5 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 37.138																				
Left View: -90.0 degrees	Medium Trucks: 37.030																				
Right View: 90.0 degrees	Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-6.34	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-23.58	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-27.54	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.0	52.0	50.2	44.1	52.8	53.4
Medium Trucks:	47.9	47.2	40.8	39.3	47.7	48.0
Heavy Trucks:	51.1	50.5	41.4	42.7	51.1	51.2
Vehicle Noise:	55.9	55.1	51.2	47.2	55.8	56.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	20	42
CNEL:	4	10	21	45

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Quail Hill Parkway  
 Road Segment: Shady Canyon Drive to Passage

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,772 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,301 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.00	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.4	64.3	62.6	56.5	65.1	65.8	
Medium Trucks:	59.2	58.5	52.1	50.6	59.0	59.3	
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1	
Vehicle Noise:	67.2	66.3	63.2	58.5	67.0	67.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	86	184	397
CNEL:	43	92	198	426



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Quail Hill Parkway  
 Road Segment: East Knollcrest to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,762 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 805 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.89	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.09	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.3	62.3	60.5	54.4	63.1	63.7
Medium Trucks:	57.1	56.4	50.0	48.5	57.0	57.2
Heavy Trucks:	57.9	57.3	48.3	49.5	57.9	58.0
Vehicle Noise:	65.2	64.3	61.1	56.4	65.0	65.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	62	134	289
CNEL:	31	67	144	310

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative	Project Name: Irvine GP
Road Name: Quassar Drive (Spectrum)	Job Number: 15937
Road Segment: Irvine Center Drive to Spectrum Center Drive (Fortune)	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,051 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 169 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 25 mph																					
Near/Far Lane Distance: 16 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 40.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 40.0 feet																					
Barrier Distance to Observer: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Observer Height (Above Pad): 5.0 feet	Autos: 39.306																				
Pad Elevation: 0.0 feet	Medium Trucks: 39.205																				
Road Elevation: 0.0 feet	Heavy Trucks: 39.307																				
Road Grade: 0.0%																					
Left View: -90.0 degrees																					
Right View: 90.0 degrees																					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-7.11	1.46	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-24.35	1.48	-1.20	-5.08	0.000	0.000
Heavy Trucks:	77.97	-28.31	1.46	-1.20	-5.56	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	51.9	50.8	49.1	43.0	51.6	52.2
Medium Trucks:	46.7	46.1	39.7	38.1	46.6	46.8
Heavy Trucks:	49.9	49.3	40.3	41.6	49.9	50.0
Vehicle Noise:	54.8	53.9	50.0	46.1	54.6	55.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	8	17	38
CNEL:	4	9	19	40

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Red Hill Avenue  
 Road Segment: MacArthur Boulevard to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,998 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,795 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.38	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.85	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.81	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.7	68.6	66.9	60.8	69.4	70.0	
Medium Trucks:	63.3	62.6	56.2	54.7	63.1	63.4	
Heavy Trucks:	63.7	63.1	54.0	55.3	63.7	63.8	
Vehicle Noise:	71.4	70.5	67.4	62.6	71.2	71.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	217	468	1,008
CNEL:	108	233	503	1,083

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Red Hill Avenue  
 Road Segment: I-405 Over Crossing to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,980 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,896 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.82	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.3	65.5	59.4	68.1	68.7	
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0	
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4	
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	282	608
CNEL:	65	141	303	654

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Red Hill Avenue  
 Road Segment: Alton Parkway to Deere Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,372 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,671 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.86	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.38	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.34	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.1	65.3	59.3	67.9	68.5
Medium Trucks:	61.7	61.1	54.7	53.1	61.6	61.8
Heavy Trucks:	62.1	61.6	52.5	53.8	62.1	62.3
Vehicle Noise:	69.9	68.9	65.9	61.1	69.7	70.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	172	370	797
CNEL:	86	185	398	857

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Red Hill Avenue  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,871 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,629 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.79	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.45	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.40	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.1	67.0	65.3	59.2	67.8	68.4	
Medium Trucks:	61.7	61.0	54.6	53.1	61.5	61.8	
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2	
Vehicle Noise:	69.8	68.9	65.8	61.0	69.6	70.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	170	366	789
CNEL:	85	183	394	848

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Red Hill Avenue  
 Road Segment: Deere Avenue to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 30,440 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,511 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.59	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.65	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.60	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.8	65.1	59.0	67.6	68.2
Medium Trucks:	61.5	60.8	54.4	52.9	61.3	61.6
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	69.6	68.7	65.6	60.8	69.4	69.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	355	765
CNEL:	82	177	382	822

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Red Hill Avenue  
 Road Segment: Skypark East to MacArthur Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,585 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,863 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.29	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.94	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.90	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.7	60.7	69.3	69.9
Medium Trucks:	63.1	62.4	56.1	54.5	63.0	63.2
Heavy Trucks:	63.5	62.9	53.9	55.2	63.5	63.6
Vehicle Noise:	71.2	70.3	67.3	62.5	71.1	71.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	152	327	705
CNEL:	76	163	352	757



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Red Hill Avenue  
 Road Segment: Main Street to Skypark East

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,603 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,617 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.32	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.56	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.52	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.9	66.1	60.1	68.7	69.3
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0
Vehicle Noise:	70.6	69.7	66.7	61.9	70.4	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	138	298	641
CNEL:	69	148	320	689

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Research Drive  
 Road Segment: Hubble to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,920 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,138 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.35	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.89	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.84	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.6	66.5	64.7	58.7	67.3	67.9	
Medium Trucks:	61.3	60.7	54.3	52.7	61.2	61.4	
Heavy Trucks:	62.2	61.6	52.5	53.8	62.1	62.3	
Vehicle Noise:	69.4	68.5	65.3	60.7	69.2	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	119	257	553
CNEL:	59	128	276	594

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Research Drive  
 Road Segment: Scientific to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 16,713 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,379 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.79	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.75	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.6	62.8	56.8	65.4	66.0
Medium Trucks:	59.4	58.7	52.4	50.8	59.3	59.5
Heavy Trucks:	60.3	59.7	50.6	51.9	60.2	60.4
Vehicle Noise:	67.5	66.6	63.4	58.8	67.3	67.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	89	192	413
CNEL:	44	95	206	443

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Research Drive  
 Road Segment: Bake Parkway to Muller

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,395 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,105 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.52	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.76	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.71	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.7	63.6	61.9	55.8	64.4	65.0
Medium Trucks:	58.5	57.8	51.4	49.9	58.3	58.6
Heavy Trucks:	59.3	58.7	49.7	50.9	59.3	59.4
Vehicle Noise:	66.5	65.6	62.5	57.8	66.3	66.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	165	356
CNEL:	38	82	177	382

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Research Drive  
 Road Segment: Irvine Center Drive to Bunsen

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	10,553 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	871 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.55	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.79	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.75	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.7	62.6	60.8	54.8	63.4	64.0
Medium Trucks:	57.4	56.7	50.4	48.8	57.3	57.5
Heavy Trucks:	58.3	57.7	48.6	49.9	58.2	58.4
Vehicle Noise:	65.5	64.6	61.4	56.8	65.3	65.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	141	304
CNEL:	33	70	151	326

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative	Project Name: Irvine GP
Road Name: Ridge Valley (O Street)	Job Number: 15937
Road Segment: Irvine Boulevard to Trabuco Road (Great Park Boulevard)	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,991 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,237 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.03	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.27	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.22	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.1	62.4	56.3	64.9	65.5
Medium Trucks:	58.9	58.3	51.9	50.4	58.8	59.1
Heavy Trucks:	59.8	59.2	50.2	51.4	59.8	59.9
Vehicle Noise:	67.0	66.1	63.0	58.3	66.8	67.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	83	178	384
CNEL:	41	89	191	412

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Ridge Valley (O Street)  
 Road Segment: Portola Parkway to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,229 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,009 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.91	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.15	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.11	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.2	61.5	55.4	64.0	64.6
Medium Trucks:	58.1	57.4	51.0	49.5	57.9	58.2
Heavy Trucks:	58.9	58.3	49.3	50.5	58.9	59.0
Vehicle Noise:	66.1	65.2	62.1	57.4	65.9	66.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	72	156	335
CNEL:	36	78	167	360

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative      Project Name: Irvine GP  
 Road Name: Ridge Valley (O Street)      Job Number: 15937  
 Road Segment: Trabuco Road (Great Park Boulevard) to Marine Way

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,130 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 918 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.52	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.9	62.8	61.1	55.0	63.6	64.2
Medium Trucks:	57.7	57.0	50.6	49.1	57.5	57.8
Heavy Trucks:	58.5	57.9	48.9	50.1	58.5	58.6
Vehicle Noise:	65.7	64.8	61.7	57.0	65.5	66.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	68	146	315
CNEL:	34	73	157	338



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Ridge Valley (O Street)  
 Road Segment: Ranchland to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 931 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 77 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-13.10	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-30.33	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-34.29	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.0	54.9	53.2	47.1	55.7	56.3
Medium Trucks:	49.8	49.1	42.7	41.2	49.6	49.9
Heavy Trucks:	50.6	50.0	41.0	42.2	50.6	50.7
Vehicle Noise:	57.8	56.9	53.8	49.1	57.6	58.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	12	26	56
CNEL:	6	13	28	60

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Ridgeline Drive  
 Road Segment: Concordia East to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 16,267 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,342 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 32.140 Medium Trucks: 32.016 Heavy Trucks: 32.141																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	0.42	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-16.82	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	81.57	-20.78	2.78	-1.20	-5.56	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.3	65.2	63.5	57.4	66.0	66.6	
Medium Trucks:	60.5	59.9	53.5	52.0	60.4	60.6	
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5	
Vehicle Noise:	68.5	67.6	64.2	59.8	68.3	68.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	144	310
CNEL:	33	71	154	331

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Ridgeline Drive  
 Road Segment: Turtle Rock Drive to San Simeon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,191 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,253 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 35 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 40.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 40.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 32.140				
Road Grade: 0.0%		Medium Trucks: 32.016				
Left View: -90.0 degrees		Heavy Trucks: 32.141				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	0.12	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-17.12	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	81.57	-21.07	2.78	-1.20	-5.56	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.2	57.1	65.7	66.3
Medium Trucks:	60.2	59.6	53.2	51.7	60.1	60.3
Heavy Trucks:	62.1	61.5	52.4	53.7	62.1	62.2
Vehicle Noise:	68.2	67.3	63.9	59.5	68.0	68.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	296
CNEL:	32	68	147	317

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Rockfield Avenue  
 Road Segment: Whatney to McLaren

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,792 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,385 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.73	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.6	62.8	56.8	65.4	66.0
Medium Trucks:	59.4	58.8	52.4	50.9	59.3	59.6
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	67.5	66.6	63.5	58.8	67.3	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	89	192	414
CNEL:	44	96	206	444

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Rockfield Avenue  
 Road Segment: Bake Parkway to Whatney

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,636 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 630 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.96	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.20	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.15	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.3	61.2	59.4	53.4	62.0	62.6	
Medium Trucks:	56.0	55.3	49.0	47.4	55.9	56.1	
Heavy Trucks:	56.9	56.3	47.2	48.5	56.8	57.0	
Vehicle Noise:	64.1	63.2	60.0	55.4	63.9	64.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	53	114	245
CNEL:	26	57	122	263

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Rockfield Avenue  
 Road Segment: Thomas to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,795 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 478 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-5.16	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-22.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-26.35	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.1	60.0	58.2	52.2	60.8	61.4
Medium Trucks:	54.8	54.1	47.8	46.2	54.7	54.9
Heavy Trucks:	55.7	55.1	46.0	47.3	55.6	55.8
Vehicle Noise:	62.9	62.0	58.8	54.2	62.7	63.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	44	95	204
CNEL:	22	47	101	219

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Roosevelt  
 Road Segment: Jeffrey Road to Vision

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,577 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,450 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
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	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.02	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.4	63.4	61.6	55.6	64.2	64.8	
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5	
Heavy Trucks:	59.7	59.1	50.1	51.4	59.7	59.8	
Vehicle Noise:	66.4	65.6	62.3	57.7	66.3	66.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	163	352
CNEL:	38	81	175	377

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Roosevelt  
 Road Segment: Yale Avenue to Van Buren

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,343 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 771 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 29.547 Medium Trucks: 29.411 Heavy Trucks: 29.547																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.57	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	77.72	-19.81	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	82.99	-23.76	3.32	-1.20	-5.77	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	65.0	63.2	57.2	65.8	66.4
Medium Trucks:	60.1	59.4	53.0	51.5	59.9	60.2
Heavy Trucks:	61.4	60.8	51.7	53.0	61.3	61.5
Vehicle Noise:	68.1	67.2	63.9	59.4	67.9	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	101	217
CNEL:	23	50	108	232



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Roosevelt  
 Road Segment: Vision to Bay Tree

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,893 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,394 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.19	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.2	61.4	55.4	64.0	64.6
Medium Trucks:	58.2	57.6	51.2	49.7	58.1	58.4
Heavy Trucks:	59.6	59.0	49.9	51.2	59.5	59.7
Vehicle Noise:	66.3	65.4	62.1	57.6	66.1	66.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	343
CNEL:	37	79	170	367

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Roosevelt  
 Road Segment: Nimitz to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,604 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,205 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.63	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.82	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.6	62.6	60.8	54.8	63.4	64.0	
Medium Trucks:	57.6	56.9	50.6	49.0	57.5	57.7	
Heavy Trucks:	58.9	58.3	49.3	50.6	58.9	59.0	
Vehicle Noise:	65.6	64.7	61.5	56.9	65.5	65.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	144	311
CNEL:	33	72	155	333

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Roosevelt  
 Road Segment: Tulip (Road C) to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,013 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,156 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.00	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.5	62.4	60.6	54.6	63.2	63.8
Medium Trucks:	57.4	56.8	50.4	48.9	57.3	57.5
Heavy Trucks:	58.7	58.2	49.1	50.4	58.7	58.9
Vehicle Noise:	65.5	64.6	61.3	56.7	65.3	65.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	141	303
CNEL:	32	70	150	324

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Royal Oak  
 Road Segment: Alton Parkway to Eaglecreek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,830 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 398 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 29.547 Medium Trucks: 29.411 Heavy Trucks: 29.547																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-4.86	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	75.75	-22.09	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	81.57	-26.05	3.32	-1.20	-5.77	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.6	60.5	58.7	52.7	61.3	61.9	
Medium Trucks:	55.8	55.1	48.8	47.2	55.7	55.9	
Heavy Trucks:	57.6	57.1	48.0	49.3	57.6	57.8	
Vehicle Noise:	63.8	62.9	59.5	55.1	63.6	64.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	113
CNEL:	12	26	56	120

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Oak Canyon Drive to Burt Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 52,249 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,311 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.94	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.30	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.26	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	69.2	67.4	61.4	70.0	70.6
Medium Trucks:	63.8	63.1	56.8	55.2	63.7	63.9
Heavy Trucks:	64.2	63.6	54.6	55.9	64.2	64.3
Vehicle Noise:	71.9	71.0	68.0	63.2	71.7	72.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	236	509	1,097
CNEL:	118	254	547	1,179

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Irvine Center Drive to Oak Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 50,129 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,136 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.76	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.48	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.44	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.0	67.2	61.2	69.8	70.4
Medium Trucks:	63.6	63.0	56.6	55.0	63.5	63.7
Heavy Trucks:	64.0	63.5	54.4	55.7	64.0	64.2
Vehicle Noise:	71.8	70.8	67.8	63.0	71.6	72.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	107	230	495	1,067
CNEL:	115	247	532	1,147

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-405 NB Off-Ramp to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,785 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,860 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.46	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-13.78	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.74	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.7	71.7	69.9	63.8	72.5	73.1
Medium Trucks:	66.3	65.6	59.3	57.7	66.2	66.4
Heavy Trucks:	66.7	66.1	57.1	58.3	66.7	66.8
Vehicle Noise:	74.4	73.5	70.4	65.7	74.2	74.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	247	532	1,146
CNEL:	123	265	571	1,231

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Burt Road to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 54,479 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,495 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.12	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.12	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.08	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.8	68.0	62.0	70.6	71.2
Medium Trucks:	64.4	63.7	57.4	55.8	64.3	64.5
Heavy Trucks:	64.8	64.2	55.2	56.4	64.8	64.9
Vehicle Noise:	72.5	71.6	68.6	63.8	72.3	72.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	247	531	1,144
CNEL:	123	265	571	1,229



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Marine to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 62,427 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,150 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.71	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-12.53	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-16.48	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.8	71.7	70.0	63.9	72.5	73.1	
Medium Trucks:	66.4	65.7	59.3	57.8	66.3	66.5	
Heavy Trucks:	66.8	66.2	57.2	58.4	66.8	66.9	
Vehicle Noise:	74.5	73.6	70.5	65.8	74.3	74.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	194	417	898	1,935
CNEL:	208	448	965	2,079

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Trabuco Road to Towngate

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 41,347 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,411 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.92	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.32	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.27	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.2	68.2	66.4	60.3	69.0	69.6	
Medium Trucks:	62.8	62.1	55.8	54.2	62.7	62.9	
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3	
Vehicle Noise:	70.9	70.0	67.0	62.2	70.7	71.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	94	202	436	939
CNEL:	101	217	468	1,009

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Barranca Parkway to Waterworks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,517 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,260 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.72	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.51	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.47	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	68.0	66.2	60.1	68.8	69.4
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	70.7	69.8	66.8	62.0	70.5	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	196	423	911
CNEL:	98	211	454	979

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-5 SB Off-Ramp to Marine

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 51,956 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,286 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.91	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-13.33	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-17.28	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.0	70.9	69.2	63.1	71.7	72.3
Medium Trucks:	65.6	64.9	58.5	57.0	65.5	65.7
Heavy Trucks:	66.0	65.4	56.4	57.6	66.0	66.1
Vehicle Noise:	73.7	72.8	69.7	65.0	73.5	74.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	171	369	795	1,712
CNEL:	184	396	854	1,840

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Hospital to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 38,333 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,162 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.59	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.65	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.60	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.9	67.8	66.1	60.0	68.6	69.2	
Medium Trucks:	62.5	61.8	55.4	53.9	62.3	62.6	
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0	
Vehicle Noise:	70.6	69.7	66.6	61.8	70.4	70.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	192	414	893
CNEL:	96	207	445	959

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Nightmist to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,225 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,896 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.50	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-13.74	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-17.70	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.6	70.5	68.8	62.7	71.3	71.9
Medium Trucks:	65.2	64.5	58.1	56.6	65.0	65.3
Heavy Trucks:	65.6	65.0	55.9	57.2	65.6	65.7
Vehicle Noise:	73.3	72.4	69.3	64.5	73.1	73.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	161	346	746	1,607
CNEL:	173	372	801	1,726

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 36,420 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,005 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.37	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.87	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.82	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.6	70.6	68.8	62.7	71.4	72.0	
Medium Trucks:	65.2	64.5	58.2	56.6	65.1	65.3	
Heavy Trucks:	65.6	65.0	56.0	57.2	65.6	65.7	
Vehicle Noise:	73.3	72.4	69.4	64.6	73.1	73.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	209	450	969
CNEL:	104	224	483	1,042

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-5 NB Off-Ramp to Nightmist

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 47,804 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,944 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.55	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-13.69	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-17.64	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.6	70.6	68.8	62.8	71.4	72.0
Medium Trucks:	65.2	64.5	58.2	56.6	65.1	65.3
Heavy Trucks:	65.6	65.0	56.0	57.3	65.6	65.7
Vehicle Noise:	73.3	72.4	69.4	64.6	73.1	73.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	162	349	752	1,620
CNEL:	174	375	808	1,740



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Towngate to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,276 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,993 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.35	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.89	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.84	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.2	61.5	55.2	53.6	62.1	62.3
Heavy Trucks:	62.6	62.1	53.0	54.3	62.6	62.7
Vehicle Noise:	70.4	69.4	66.4	61.6	70.2	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	399	860
CNEL:	92	199	429	924

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Waterworks to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,662 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,777 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.21	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.17	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.3	65.5	59.4	68.1	68.7
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	176	380	818
CNEL:	88	189	408	879

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Irvine Boulevard to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,085 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,904 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.39	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.85	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.80	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0
Heavy Trucks:	62.3	61.7	52.7	54.0	62.3	62.4
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	283	610
CNEL:	66	141	304	656

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Roosevelt to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,585 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,266 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.73	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-14.51	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-18.46	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.8	68.0	61.9	70.6	71.2
Medium Trucks:	64.4	63.7	57.4	55.8	64.3	64.5
Heavy Trucks:	64.8	64.2	55.2	56.4	64.8	64.9
Vehicle Noise:	72.5	71.6	68.6	63.8	72.3	72.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	308	663	1,428
CNEL:	153	331	712	1,535

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Alton Parkway to Hospital

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,877 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,877 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.18	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.06	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.01	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.8	66.1	60.0	68.6	69.2
Medium Trucks:	62.5	61.8	55.4	53.9	62.3	62.6
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0
Vehicle Noise:	70.6	69.7	66.6	61.8	70.4	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	183	395	850
CNEL:	91	197	424	913

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon/Shady Canyon  
 Road Segment: Quail Hill Parkway to I-405 SB Ramps

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,017 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,981 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.56	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.68	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.63	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.8	67.0	60.9	69.6	70.2
Medium Trucks:	63.4	62.7	56.4	54.8	63.3	63.5
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9
Vehicle Noise:	71.5	70.6	67.6	62.8	71.3	71.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	158	341	734
CNEL:	79	170	366	789

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Scientific Way  
 Road Segment: Irvine Center Drive to Wald

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,634 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 135 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-9.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-26.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-30.76	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.5	51.4	49.7	43.6	52.2	52.8
Medium Trucks:	46.7	46.0	39.7	38.1	46.6	46.8
Heavy Trucks:	48.6	48.0	38.9	40.2	48.5	48.7
Vehicle Noise:	54.7	53.8	50.4	46.0	54.5	55.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	13	27	58
CNEL:	6	13	29	62

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Shady Canyon Drive  
 Road Segment: Culver Drive/Bonita Canyon Drive to Cloverfield

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,541 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 787 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.45	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-20.69	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-24.64	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.4	66.3	64.6	58.5	67.1	67.7	
Medium Trucks:	61.0	60.3	53.9	52.4	60.8	61.1	
Heavy Trucks:	61.4	60.8	51.7	53.0	61.4	61.5	
Vehicle Noise:	69.1	68.2	65.1	60.3	68.9	69.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	68	147	316
CNEL:	34	73	158	340



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Shady Canyon Drive  
 Road Segment: Bommer Canyon Road to Sunnyhill

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,202 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 677 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.11	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-21.34	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.30	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.8	64.7	63.0	56.9	65.5	66.1	
Medium Trucks:	59.4	58.7	52.3	50.8	59.3	59.5	
Heavy Trucks:	59.8	59.2	50.2	51.4	59.8	59.9	
Vehicle Noise:	67.5	66.6	63.5	58.8	67.3	67.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	331
CNEL:	36	77	165	355

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Skyhawk  
 Road Segment: Great Park Boulevard to Marine Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,359 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 855 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 25 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-0.08	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-17.32	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-21.27	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.4	55.3	53.6	47.5	56.1	56.8
Medium Trucks:	51.2	50.6	44.2	42.7	51.1	51.4
Heavy Trucks:	54.5	53.9	44.8	46.1	54.4	54.6
Vehicle Noise:	59.3	58.4	54.5	50.6	59.1	59.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	25	55	118
CNEL:	13	27	58	125

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Southwood  
 Road Segment: Yale Avenue to Colt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,070 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 253 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-6.82	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-24.06	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-28.02	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	58.1	57.0	55.3	49.2	57.8	58.5	
Medium Trucks:	52.3	51.7	45.3	43.8	52.2	52.5	
Heavy Trucks:	54.2	53.6	44.6	45.8	54.2	54.3	
Vehicle Noise:	60.3	59.5	56.0	51.6	60.2	60.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	18	38	83
CNEL:	9	19	41	88

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Southwood  
 Road Segment: Challenger to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,909 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	240 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-7.06	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-24.30	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-28.25	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.9	56.8	55.0	49.0	57.6	58.2
Medium Trucks:	52.1	51.4	45.1	43.5	52.0	52.2
Heavy Trucks:	53.9	53.4	44.3	45.6	53.9	54.1
Vehicle Noise:	60.1	59.2	55.8	51.4	59.9	60.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	80
CNEL:	9	18	40	85

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Spectrum Center Drive (Fortune)  
 Road Segment: Pacifica to Quassar Drive (Spectrum )

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,720 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 967 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.57	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.53	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	59.2	58.1	56.3	50.3	58.9	59.5	
Medium Trucks:	53.7	53.0	46.6	45.1	53.5	53.8	
Heavy Trucks:	56.1	55.6	46.5	47.8	56.1	56.3	
Vehicle Noise:	61.7	60.8	57.2	53.0	61.5	61.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	79	170
CNEL:	18	39	84	181

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Spectrum Center Drive (Fortune)  
 Road Segment: Quassar Drive (Spectrum ) to Gatewayb

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,355 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,102 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	0.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.01	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-20.96	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.7	58.7	56.9	50.9	59.5	60.1
Medium Trucks:	54.2	53.6	47.2	45.7	54.1	54.3
Heavy Trucks:	56.7	56.1	47.1	48.3	56.7	56.8
Vehicle Noise:	62.2	61.4	57.7	53.6	62.1	62.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	40	86	185
CNEL:	20	42	92	197

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Sunnyhill  
 Road Segment: Shady Canyon Drive to Turtle Rock Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,895 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	569 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-1.85	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-19.09	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-23.04	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.6	53.6	51.8	45.8	54.4	55.0
Medium Trucks:	49.5	48.8	42.4	40.9	49.4	49.6
Heavy Trucks:	52.7	52.1	43.1	44.3	52.7	52.8
Vehicle Noise:	57.5	56.7	52.8	48.9	57.4	57.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	42	90
CNEL:	10	21	44	95

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Technology Drive  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 33,560 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,769 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.47	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.72	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.9	59.8	68.4	69.0	
Medium Trucks:	62.4	61.8	55.4	53.9	62.3	62.6	
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4	
Vehicle Noise:	70.5	69.6	66.5	61.8	70.3	70.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	142	305	657
CNEL:	71	152	327	705



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative Project Name: Irvine GP  
 Road Name: Technology Drive Job Number: 15937  
 Road Segment: Old Laguna Canyon Road to I-5/SR-133 Undercrossing

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,533 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,106 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.91	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.4	64.7	58.6	67.2	67.8
Medium Trucks:	61.3	60.6	54.2	52.7	61.1	61.4
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	69.3	68.4	65.3	60.6	69.1	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	254	548
CNEL:	59	127	273	588

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Technology Drive  
 Road Segment: I-5/SR-133 to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,552 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,026 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.12	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.08	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.3	64.5	58.4	67.1	67.7
Medium Trucks:	61.1	60.4	54.1	52.5	61.0	61.2
Heavy Trucks:	61.9	61.3	52.3	53.6	61.9	62.0
Vehicle Noise:	69.2	68.3	65.1	60.4	69.0	69.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	115	248	534
CNEL:	57	123	266	573

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Technology Drive  
 Road Segment: Ada to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,603 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 545 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.59	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.83	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.78	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.6	60.6	58.8	52.7	61.4	62.0
Medium Trucks:	55.4	54.7	48.3	46.8	55.3	55.5
Heavy Trucks:	56.2	55.6	46.6	47.9	56.2	56.3
Vehicle Noise:	63.5	62.6	59.4	54.7	63.3	63.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	48	103	222
CNEL:	24	51	111	239

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Toledo Way  
 Road Segment: Bake Parkway to City Limits

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 7,876 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 650 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-21.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-25.48	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.7	62.6	60.8	54.8	63.4	64.0
Medium Trucks:	57.2	56.6	50.2	48.7	57.1	57.4
Heavy Trucks:	57.7	57.1	48.0	49.3	57.6	57.8
Vehicle Noise:	65.4	64.5	61.4	56.6	65.2	65.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	298
CNEL:	32	69	149	320

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Toledo Way  
 Road Segment: Goodyear to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,405 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 528 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.42	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.37	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.8	61.7	59.9	53.9	62.5	63.1	
Medium Trucks:	56.3	55.7	49.3	47.8	56.2	56.5	
Heavy Trucks:	56.8	56.2	47.1	48.4	56.7	56.9	
Vehicle Noise:	64.5	63.6	60.5	55.7	64.3	64.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	56	120	260
CNEL:	28	60	129	279

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Toledo Way  
 Road Segment: Alton Parkway to Parker

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,030 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 497 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.44	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.68	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.64	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.5	61.5	59.7	53.6	62.3	62.9
Medium Trucks:	56.1	55.4	49.0	47.5	56.0	56.2
Heavy Trucks:	56.5	55.9	46.9	48.1	56.5	56.6
Vehicle Noise:	64.2	63.3	60.3	55.5	64.0	64.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	116	249
CNEL:	27	58	124	268

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Trabuco Road  
 Road Segment: Keystone to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,918 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,231 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.05	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.29	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.24	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.2	64.1	62.3	56.3	64.9	65.5	
Medium Trucks:	58.9	58.3	51.9	50.3	58.8	59.0	
Heavy Trucks:	59.8	59.2	50.1	51.4	59.7	59.9	
Vehicle Noise:	67.0	66.1	62.9	58.3	66.8	67.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	178	383
CNEL:	41	88	191	411

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Trabuco Road  
 Road Segment: Jeffrey Road to Keystone

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,426 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,190 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.39	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.0	64.0	62.2	56.1	64.8	65.4
Medium Trucks:	58.8	58.1	51.7	50.2	58.7	58.9
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7
Vehicle Noise:	66.9	65.9	62.8	58.1	66.7	67.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	81	174	374
CNEL:	40	87	186	402



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Trabuco Road  
 Road Segment: Culver Drive to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,569 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,119 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.46	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.70	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.66	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.8	63.7	61.9	55.9	64.5	65.1	
Medium Trucks:	58.5	57.8	51.5	49.9	58.4	58.6	
Heavy Trucks:	59.4	58.8	49.7	51.0	59.3	59.5	
Vehicle Noise:	66.6	65.7	62.5	57.9	66.4	66.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	167	359
CNEL:	39	83	179	386

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Trabuco Road  
 Road Segment: Monroe to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,781 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,137 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.39	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.63	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.59	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.8	63.8	62.0	55.9	64.6	65.2	
Medium Trucks:	58.6	57.9	51.5	50.0	58.5	58.7	
Heavy Trucks:	59.4	58.8	49.8	51.0	59.4	59.5	
Vehicle Noise:	66.7	65.7	62.6	57.9	66.5	66.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	169	363
CNEL:	39	84	181	390

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Trabuco Road  
 Road Segment: I-5 NB Off-Ramp to Monroe

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,404 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,106 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.51	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.75	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.71	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.7	63.6	61.9	55.8	64.4	65.0
Medium Trucks:	58.5	57.8	51.4	49.9	58.3	58.6
Heavy Trucks:	59.3	58.7	49.7	50.9	59.3	59.4
Vehicle Noise:	66.5	65.6	62.5	57.8	66.3	66.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	165	357
CNEL:	38	82	178	382

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Trabuco Road  
 Road Segment: Yale Avenue to Remington

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,594 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,039 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.78	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.02	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.98	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.4	61.6	55.5	64.2	64.8
Medium Trucks:	58.2	57.5	51.2	49.6	58.1	58.3
Heavy Trucks:	59.0	58.4	49.4	50.7	59.0	59.1
Vehicle Noise:	66.3	65.4	62.2	57.5	66.1	66.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	342
CNEL:	37	79	170	367

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Trabuco Road  
 Road Segment: Remington to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,786 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 972 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.07	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.31	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.27	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.1	63.1	61.3	55.3	63.9	64.5
Medium Trucks:	57.9	57.2	50.9	49.3	57.8	58.0
Heavy Trucks:	58.7	58.2	49.1	50.4	58.7	58.8
Vehicle Noise:	66.0	65.1	61.9	57.2	65.8	66.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	70	152	327
CNEL:	35	76	163	351

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Turtle Ridge Drive  
 Road Segment: Federation Way to Bonita Canyon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,959 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,729 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.43	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.81	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.77	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.6	63.8	57.8	66.4	67.0
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5
Heavy Trucks:	61.2	60.7	51.6	52.9	61.2	61.3
Vehicle Noise:	68.5	67.6	64.4	59.7	68.3	68.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	223	480
CNEL:	52	111	239	515

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Turtle Rock Drive  
 Road Segment: Ridgeline to Willowleaf

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,839 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	729 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.32	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-20.56	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-24.52	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.8	64.7	62.9	56.9	65.5	66.1
Medium Trucks:	59.5	58.9	52.5	51.0	59.4	59.7
Heavy Trucks:	60.4	59.8	50.7	52.0	60.4	60.5
Vehicle Noise:	67.6	66.7	63.6	58.9	67.4	67.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	117	252
CNEL:	27	58	126	271

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Turtle Rock Drive  
 Road Segment: Silkwood to Sunnyhill

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,790 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	725 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.35	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-20.58	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-24.54	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.7	62.9	56.9	65.5	66.1
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6
Heavy Trucks:	60.3	59.8	50.7	52.0	60.3	60.5
Vehicle Noise:	67.6	66.7	63.5	58.8	67.4	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	117	251
CNEL:	27	58	125	270



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Turtle Rock Drive  
 Road Segment: Canyon Park to Ridgeline

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,358 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	607 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.12	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-21.36	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-25.31	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.0	63.9	62.1	56.1	64.7	65.3
Medium Trucks:	58.7	58.1	51.7	50.2	58.6	58.9
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7
Vehicle Noise:	66.8	65.9	62.8	58.1	66.6	67.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	48	104	223
CNEL:	24	52	111	239

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Turtle Rock Drive  
 Road Segment: Sunnyhill to Southernwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,664 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 302 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-7.15	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-24.39	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-28.34	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.9	60.9	59.1	53.1	61.7	62.3	
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8	
Heavy Trucks:	56.5	56.0	46.9	48.2	56.5	56.7	
Vehicle Noise:	63.8	62.9	59.7	55.0	63.6	64.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	30	65	140
CNEL:	15	32	70	150

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Turtle Rock Drive  
 Road Segment: Campus Drive to Hillgate

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,303 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	602 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.35	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.1	61.0	59.2	53.2	61.8	62.4
Medium Trucks:	55.8	55.1	48.8	47.2	55.7	55.9
Heavy Trucks:	56.7	56.1	47.0	48.3	56.6	56.8
Vehicle Noise:	63.9	63.0	59.8	55.2	63.7	64.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	51	110	238
CNEL:	26	55	118	255

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Turtle Rock Drive  
 Road Segment: Paseo Segovia to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,071 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	336 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	40.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	40.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 32.140				
Road Grade:	0.0%	Medium Trucks: 32.016				
Left View:	-90.0 degrees	Heavy Trucks: 32.141				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-6.69	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-23.93	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	84.25	-27.88	2.78	-1.20	-5.56	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.3	62.3	60.5	54.5	63.1	63.7
Medium Trucks:	57.1	56.5	50.1	48.5	57.0	57.2
Heavy Trucks:	57.9	57.4	48.3	49.6	57.9	58.1
Vehicle Noise:	65.2	64.3	61.1	56.4	65.0	65.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	40	86	185
CNEL:	20	43	92	199

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: University Drive  
 Road Segment: Golden Glow to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 43,486 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,588 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.05	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	70.0	68.3	62.2	70.8	71.4
Medium Trucks:	64.7	64.0	57.6	56.1	64.5	64.8
Heavy Trucks:	65.1	64.5	55.5	56.7	65.1	65.2
Vehicle Noise:	72.8	71.9	68.8	64.0	72.6	73.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	201	432	931
CNEL:	100	215	464	1,000

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: University Drive  
 Road Segment: Ridgeline to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 53,139 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,384 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 75.0 feet Centerline Dist. to Observer: 75.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 70.413 Medium Trucks: 70.356 Heavy Trucks: 70.413																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.01	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.23	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-17.18	-2.33	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.7	69.6	67.9	61.8	70.4	71.0	
Medium Trucks:	64.2	63.6	57.2	55.7	64.1	64.4	
Heavy Trucks:	64.7	64.1	55.0	56.3	64.6	64.8	
Vehicle Noise:	72.4	71.5	68.4	63.6	72.2	72.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	105	226	486	1,048
CNEL:	113	243	522	1,126

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: University Drive  
 Road Segment: Culver Drive to Golden Glow

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 42,225 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,484 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.18	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.0	69.9	68.1	62.1	70.7	71.3
Medium Trucks:	64.5	63.9	57.5	56.0	64.4	64.7
Heavy Trucks:	64.9	64.4	55.3	56.6	64.9	65.1
Vehicle Noise:	72.7	71.7	68.7	63.9	72.5	72.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	197	424	913
CNEL:	98	211	455	981

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: University Drive  
 Road Segment: Yale Avenue to Ridgeline

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 37,727 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,112 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.52	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.67	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.5	69.4	67.7	61.6	70.2	70.8	
Medium Trucks:	64.0	63.4	57.0	55.5	63.9	64.2	
Heavy Trucks:	64.5	63.9	54.8	56.1	64.4	64.6	
Vehicle Noise:	72.2	71.3	68.2	63.4	72.0	72.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	182	393	847
CNEL:	91	196	422	910



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: University Drive  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 59,773 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,931 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.52	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-12.72	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-16.67	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.8	68.0	61.9	70.6	71.2
Medium Trucks:	64.4	63.7	57.4	55.8	64.3	64.5
Heavy Trucks:	64.8	64.2	55.2	56.4	64.8	64.9
Vehicle Noise:	72.5	71.6	68.6	63.8	72.3	72.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	120	259	557	1,200
CNEL:	129	278	599	1,289

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: University Drive  
 Road Segment: Mesa to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 46,258 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,816 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.41	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-13.83	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.79	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.7	71.6	69.8	63.8	72.4	73.0	
Medium Trucks:	66.2	65.6	59.2	57.7	66.1	66.4	
Heavy Trucks:	66.6	66.1	57.0	58.3	66.6	66.8	
Vehicle Noise:	74.4	73.4	70.4	65.6	74.2	74.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	245	528	1,137
CNEL:	122	263	567	1,222

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative	Project Name: Irvine GP
Road Name: University Drive	Job Number: 15937
Road Segment: MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 46,885 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 3,868 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 50 mph																					
Near/Far Lane Distance: 74 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 60.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 60.0 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 47.329																				
Left View: -90.0 degrees	Medium Trucks: 47.244																				
Right View: 90.0 degrees	Heavy Trucks: 47.329																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.47	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-13.77	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.73	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.7	71.7	69.9	63.8	72.5	73.1
Medium Trucks:	66.3	65.6	59.3	57.7	66.2	66.4
Heavy Trucks:	66.7	66.1	57.1	58.3	66.7	66.8
Vehicle Noise:	74.4	73.5	70.5	65.7	74.2	74.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	247	532	1,147
CNEL:	123	266	572	1,233

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: University Drive  
 Road Segment: California Avenue to Mesa

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,113 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,722 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.30	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-13.94	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.90	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.6	71.5	69.7	63.7	72.3	72.9
Medium Trucks:	66.1	65.5	59.1	57.5	66.0	66.2
Heavy Trucks:	66.5	66.0	56.9	58.2	66.5	66.6
Vehicle Noise:	74.3	73.3	70.3	65.5	74.1	74.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	112	241	519	1,118
CNEL:	120	259	558	1,201

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: University Drive  
 Road Segment: Campus Drive to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 38,009 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,136 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.55	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.68	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.64	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.9	67.8	66.0	60.0	68.6	69.2	
Medium Trucks:	62.4	61.8	55.4	53.8	62.3	62.5	
Heavy Trucks:	62.8	62.3	53.2	54.5	62.8	63.0	
Vehicle Noise:	70.6	69.6	66.6	61.8	70.4	70.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	191	412	887
CNEL:	95	205	443	954

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative Project Name: Irvine GP  
 Road Name: University Drive Job Number: 15937  
 Road Segment: SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,520 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,693 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.12	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-17.36	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-21.32	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	67.0	60.9	69.5	70.1
Medium Trucks:	63.4	62.7	56.3	54.8	63.2	63.5
Heavy Trucks:	63.8	63.2	54.1	55.4	63.8	63.9
Vehicle Noise:	71.5	70.6	67.5	62.7	71.3	71.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	283	609
CNEL:	65	141	304	655

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative Project Name: Irvine GP  
 Road Name: University Drive Job Number: 15937  
 Road Segment: SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 34,513 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,847 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.14	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.10	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.06	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.4	65.6	59.6	68.2	68.8
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	70.1	69.2	66.2	61.4	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	179	386	832
CNEL:	89	193	415	894

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: University Drive  
 Road Segment: San Joaquin to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,679 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,531 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.62	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.61	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.57	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.9	65.1	59.0	67.7	68.3
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	69.6	68.7	65.7	60.9	69.4	69.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	357	769
CNEL:	83	178	384	827



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: University Drive  
 Road Segment: Harvard Avenue to San Joaquin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,550 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,520 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.61	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.63	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.59	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.8	65.1	59.0	67.7	68.3
Medium Trucks:	61.5	60.8	54.4	52.9	61.4	61.6
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	69.6	68.7	65.6	60.9	69.4	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	356	767
CNEL:	82	178	383	824

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Valley Oak Drive  
 Road Segment: Hawkcreek to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,837 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,142 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.83	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.03	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	65.1	63.3	57.2	65.9	66.5
Medium Trucks:	59.7	59.0	52.7	51.1	59.6	59.8
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2
Vehicle Noise:	67.8	66.9	63.9	59.1	67.6	68.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	93	201	434
CNEL:	47	100	216	466

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Valley Oak Drive  
 Road Segment: Irvine Center Drive to Oak Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,291 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,014 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 42.814				
Road Grade: 0.0%		Medium Trucks: 42.720				
Left View: -90.0 degrees		Heavy Trucks: 42.814				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.35	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-19.59	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-23.54	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.5	64.7	58.7	67.3	67.9
Medium Trucks:	61.1	60.5	54.1	52.6	61.0	61.3
Heavy Trucks:	61.5	61.0	51.9	53.2	61.5	61.7
Vehicle Noise:	69.3	68.3	65.3	60.5	69.1	69.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	93	201	433
CNEL:	47	100	216	465

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Valley Oak Drive  
 Road Segment: Barranca Parkway to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,266 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 929 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.73	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.96	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.92	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.2	64.2	62.4	56.3	65.0	65.6	
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9	
Heavy Trucks:	59.2	58.6	49.6	50.8	59.2	59.3	
Vehicle Noise:	66.9	66.0	63.0	58.2	66.7	67.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	176	378
CNEL:	41	88	189	406

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Valley Oak Drive  
 Road Segment: Alton Parkway to Hawkcreek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,590 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	544 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.06	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.29	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.25	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.9	61.8	60.1	54.0	62.6	63.2
Medium Trucks:	56.5	55.8	49.4	47.9	56.4	56.6
Heavy Trucks:	56.9	56.3	47.3	48.5	56.9	57.0
Vehicle Noise:	64.6	63.7	60.6	55.9	64.4	64.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	57	123	265
CNEL:	28	61	132	284

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Marriott to Morse Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,487 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,928 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.71	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.48	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.9	66.1	60.0	68.7	69.3
Medium Trucks:	62.7	62.0	55.7	54.1	62.6	62.8
Heavy Trucks:	63.5	62.9	53.9	55.2	63.5	63.6
Vehicle Noise:	70.8	69.9	66.7	62.0	70.6	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	147	317	682
CNEL:	73	158	340	732

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Michelson Drive to Quartz

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 34,303 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,830 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.67	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.63	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	66.0	59.9	68.5	69.1
Medium Trucks:	62.5	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	70.6	69.7	66.6	61.9	70.4	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	310	667
CNEL:	72	154	332	716

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,736 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,783 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.74	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.70	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.9	59.8	68.4	69.1
Medium Trucks:	62.5	61.8	55.4	53.9	62.3	62.6
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4
Vehicle Noise:	70.5	69.6	66.5	61.8	70.4	70.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	142	306	660
CNEL:	71	152	328	708



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 41,710 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,441 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 70.413				
Road Grade: 0.0%	Medium Trucks: 70.356				
Left View: -90.0 degrees	Heavy Trucks: 70.413				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.42	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.82	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	84.25	-17.78	-2.33	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.3	65.5	59.5	68.1	68.7	
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2	
Heavy Trucks:	62.9	62.4	53.3	54.6	62.9	63.0	
Vehicle Noise:	70.2	69.3	66.1	61.4	70.0	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	347	748
CNEL:	80	173	373	803

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Main Street to Anchor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 33,066 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,728 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.41	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.83	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.79	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.6	65.8	59.7	68.4	69.0
Medium Trucks:	62.4	61.7	55.3	53.8	62.3	62.5
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3
Vehicle Noise:	70.5	69.5	66.4	61.7	70.3	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	140	302	651
CNEL:	70	150	324	698

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Anchor to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,904 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,632 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.99	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.94	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.6	59.6	68.2	68.8
Medium Trucks:	62.2	61.6	55.2	53.6	62.1	62.3
Heavy Trucks:	63.1	62.5	53.4	54.7	63.0	63.2
Vehicle Noise:	70.3	69.4	66.2	61.6	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	137	295	636
CNEL:	68	147	316	682

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Morse to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 30,079 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,481 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.20	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.1	65.4	59.3	67.9	68.6
Medium Trucks:	62.0	61.3	54.9	53.4	61.9	62.1
Heavy Trucks:	62.8	62.2	53.2	54.4	62.8	62.9
Vehicle Noise:	70.0	69.1	66.0	61.3	69.9	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	284	611
CNEL:	66	141	304	656

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Martin to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,978 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,143 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.36	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.88	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.83	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.5	64.7	58.7	67.3	67.9
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.4
Heavy Trucks:	62.2	61.6	52.5	53.8	62.2	62.3
Vehicle Noise:	69.4	68.5	65.4	60.7	69.2	69.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	119	257	554
CNEL:	59	128	276	595

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Campus Drive to Martin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,324 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,089 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.99	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.95	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.4	64.6	58.6	67.2	67.8
Medium Trucks:	61.2	60.5	54.2	52.6	61.1	61.3
Heavy Trucks:	62.1	61.5	52.4	53.7	62.0	62.2
Vehicle Noise:	69.3	68.4	65.2	60.6	69.1	69.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	117	253	545
CNEL:	58	126	271	584

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Dupont Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,306 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,088 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.99	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.95	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.4	64.6	58.6	67.2	67.8
Medium Trucks:	61.2	60.5	54.2	52.6	61.1	61.3
Heavy Trucks:	62.1	61.5	52.4	53.7	62.0	62.2
Vehicle Noise:	69.3	68.4	65.2	60.6	69.1	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	117	253	545
CNEL:	58	126	271	584

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Jeffrey Road to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 34,873 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,877 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.64	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.60	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.56	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.9	67.8	66.0	60.0	68.6	69.2	
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7	
Heavy Trucks:	63.5	62.9	53.8	55.1	63.4	63.6	
Vehicle Noise:	70.7	69.8	66.6	62.0	70.5	71.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	145	313	674
CNEL:	72	156	336	723



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Myford Road to Jamboree Road SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,422 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,932 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.91	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.33	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.28	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.1	66.1	64.3	58.2	66.9	67.5	
Medium Trucks:	60.9	60.2	53.8	52.3	60.8	61.0	
Heavy Trucks:	61.7	61.1	52.1	53.3	61.7	61.8	
Vehicle Noise:	69.0	68.1	64.9	60.2	68.8	69.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	111	240	517
CNEL:	55	120	258	555

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Walnut Avenue  
 Road Segment: The Mall Street to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,556 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,778 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.55	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.69	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.65	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.8	65.7	63.9	57.9	66.5	67.1	
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6	
Heavy Trucks:	61.4	60.8	51.7	53.0	61.3	61.5	
Vehicle Noise:	68.6	67.7	64.5	59.9	68.4	68.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	105	227	489
CNEL:	52	113	244	525

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Harvard Avenue to The Mall Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,466 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,771 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.71	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.66	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	61.3	60.8	51.7	53.0	61.3	61.5
Vehicle Noise:	68.6	67.7	64.5	59.8	68.4	68.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	105	227	488
CNEL:	52	113	243	524

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Franciscan Street to Ravenwood Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,217 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,668 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.97	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.92	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.5	65.4	63.7	57.6	66.2	66.8	
Medium Trucks:	60.2	59.6	53.2	51.7	60.1	60.4	
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2	
Vehicle Noise:	68.3	67.4	64.3	59.6	68.1	68.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	101	218	469
CNEL:	50	108	233	503

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Ravenwood Street to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,725 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,627 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.16	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.03	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	60.1	59.5	53.1	51.6	60.0	60.3
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1
Vehicle Noise:	68.2	67.3	64.2	59.5	68.0	68.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	99	214	461
CNEL:	49	107	230	495

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Culver Drive to Franciscan Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,522 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,611 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
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	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.12	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.12	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.08	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.3	65.3	63.5	57.4	66.1	66.7	
Medium Trucks:	60.1	59.4	53.1	51.5	60.0	60.2	
Heavy Trucks:	60.9	60.3	51.3	52.6	60.9	61.0	
Vehicle Noise:	68.2	67.3	64.1	59.4	68.0	68.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	99	213	458
CNEL:	49	106	228	491

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Peters Canyon Road to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,432 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,181 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.43	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.80	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.76	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.2	57.1	65.7	66.3
Medium Trucks:	59.8	59.1	52.7	51.2	59.6	59.9
Heavy Trucks:	60.6	60.0	51.0	52.2	60.6	60.7
Vehicle Noise:	67.8	66.9	63.8	59.1	67.6	68.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	126	271	585
CNEL:	63	135	291	627

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative Project Name: Irvine GP  
 Road Name: Walnut Avenue Job Number: 15937  
 Road Segment: Jamboree Road NB Off-Ramp to Peters Canyon Road

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b> Average Daily Traffic (Adt): 25,325 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,089 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	<b>Site Conditions (Hard = 10, Soft = 15)</b> Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b> Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<b>Vehicle Mix</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table> <b>Noise Source Elevations (in feet)</b> Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Lane Equivalent Distance (in feet)</b> Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.25	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.99	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.95	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.8	64.7	63.0	56.9	65.6	66.2
Medium Trucks:	59.6	58.9	52.5	51.0	59.4	59.7
Heavy Trucks:	60.4	59.8	50.8	52.0	60.4	60.5
Vehicle Noise:	67.6	66.7	63.6	58.9	67.5	67.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	122	264	568
CNEL:	61	131	283	610



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Yale Avenue to Kazan Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,195 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,254 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.97	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.21	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.16	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.2	62.4	56.4	65.0	65.6
Medium Trucks:	59.0	58.3	52.0	50.4	58.9	59.1
Heavy Trucks:	59.8	59.3	50.2	51.5	59.8	60.0
Vehicle Noise:	67.1	66.2	63.0	58.3	66.9	67.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	180	388
CNEL:	42	90	193	416

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Wisteria to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,856 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,226 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.07	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.31	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.26	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.1	64.1	62.3	56.3	64.9	65.5	
Medium Trucks:	58.9	58.2	51.9	50.3	58.8	59.0	
Heavy Trucks:	59.7	59.2	50.1	51.4	59.7	59.9	
Vehicle Noise:	67.0	66.1	62.9	58.2	66.8	67.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	177	382
CNEL:	41	88	190	410

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative Project Name: Irvine GP  
 Road Name: Warner Avenue Job Number: 15937  
 Road Segment: Jamboree Road SB Off-ramp to Construction North

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,958 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,389 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.83	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.41	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.36	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	67.0	65.2	59.2	67.8	68.4
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	62.6	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	69.9	69.0	65.8	61.1	69.7	70.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	128	277	596
CNEL:	64	138	297	639

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Warner Avenue  
 Road Segment: Construction North to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,168 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,664 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.93	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.4	63.6	57.6	66.2	66.8
Medium Trucks:	60.2	59.6	53.2	51.7	60.1	60.3
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2
Vehicle Noise:	68.3	67.4	64.3	59.6	68.1	68.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	101	217	468
CNEL:	50	108	233	502

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Warner Avenue  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,205 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,172 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.46	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.0	63.9	62.1	56.1	64.7	65.3
Medium Trucks:	58.7	58.0	51.7	50.1	58.6	58.8
Heavy Trucks:	59.6	59.0	49.9	51.2	59.5	59.7
Vehicle Noise:	66.8	65.9	62.7	58.1	66.6	67.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	80	172	371
CNEL:	40	86	185	398

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Warner Avenue  
 Road Segment: Santa Ynez to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,717 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 967 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.29	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.1	63.1	61.3	55.2	63.9	64.5
Medium Trucks:	57.9	57.2	50.8	49.3	57.8	58.0
Heavy Trucks:	58.7	58.1	49.1	50.3	58.7	58.8
Vehicle Noise:	66.0	65.0	61.9	57.2	65.8	66.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	70	151	326
CNEL:	35	75	162	350

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Warner Avenue  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,973 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 905 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.38	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.62	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.58	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.8	62.8	61.0	54.9	63.6	64.2
Medium Trucks:	57.6	56.9	50.6	49.0	57.5	57.7
Heavy Trucks:	58.4	57.8	48.8	50.1	58.4	58.5
Vehicle Noise:	65.7	64.8	61.6	56.9	65.5	65.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	145	312
CNEL:	33	72	155	335

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: West Yale Loop  
 Road Segment: Alton Parkway to Blue Lake North

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,360 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 772 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.76	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.7	60.6	58.9	52.8	61.4	62.0	
Medium Trucks:	55.7	55.0	48.6	47.1	55.6	55.8	
Heavy Trucks:	57.0	56.4	47.4	48.6	57.0	57.1	
Vehicle Noise:	63.7	62.8	59.5	55.0	63.5	64.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	107	231
CNEL:	25	53	115	248



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: West Yale Loop  
 Road Segment: Eagle Run to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,015 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	744 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.73	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.96	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.92	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.5	60.5	58.7	52.7	61.3	61.9
Medium Trucks:	55.5	54.8	48.5	46.9	55.4	55.6
Heavy Trucks:	56.8	56.2	47.2	48.5	56.8	56.9
Vehicle Noise:	63.5	62.7	59.4	54.8	63.4	63.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	49	105	226
CNEL:	24	52	112	242

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: West Yale Loop  
 Road Segment: Thunder Run to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,484 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	782 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.51	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.74	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.70	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.8	60.7	58.9	52.9	61.5	62.1
Medium Trucks:	55.7	55.1	48.7	47.2	55.6	55.8
Heavy Trucks:	57.0	56.5	47.4	48.7	57.0	57.2
Vehicle Noise:	63.8	62.9	59.6	55.0	63.6	64.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	233
CNEL:	25	54	116	250

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: West Yale Loop  
 Road Segment: Main Street to Timber Run

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,261 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 599 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.86	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.6	59.5	57.8	51.7	60.3	60.9	
Medium Trucks:	54.6	53.9	47.5	46.0	54.5	54.7	
Heavy Trucks:	55.9	55.3	46.3	47.5	55.9	56.0	
Vehicle Noise:	62.6	61.7	58.4	53.9	62.4	62.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	42	91	195
CNEL:	21	45	97	209

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: West Yale Loop  
 Road Segment: Yale Avenue to Shorebird

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,013 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	661 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.43	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.0	60.0	58.2	52.1	60.8	61.4
Medium Trucks:	55.0	54.3	48.0	46.4	54.9	55.1
Heavy Trucks:	56.3	55.7	46.7	47.9	56.3	56.4
Vehicle Noise:	63.0	62.1	58.9	54.3	62.8	63.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	45	97	209
CNEL:	22	48	104	223

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: West Yale Loop  
 Road Segment: Warner Avenue to Stonecreek South

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,018 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	579 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.01	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.5	59.4	57.6	51.6	60.2	60.8
Medium Trucks:	54.4	53.8	47.4	45.8	54.3	54.5
Heavy Trucks:	55.7	55.2	46.1	47.4	55.7	55.9
Vehicle Noise:	62.5	61.6	58.3	53.7	62.3	62.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	41	89	191
CNEL:	20	44	95	204

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: West Yale Loop  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,549 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 540 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.31	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.2	59.1	57.3	51.3	59.9	60.5	
Medium Trucks:	54.1	53.5	47.1	45.5	54.0	54.2	
Heavy Trucks:	55.4	54.9	45.8	47.1	55.4	55.5	
Vehicle Noise:	62.2	61.3	58.0	53.4	62.0	62.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	85	182
CNEL:	20	42	91	195

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: West Yale Loop  
 Road Segment: Stonecreek North to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,875 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 567 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.90	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.14	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.10	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.4	59.3	57.5	51.5	60.1	60.7	
Medium Trucks:	54.3	53.7	47.3	45.8	54.2	54.5	
Heavy Trucks:	55.7	55.1	46.0	47.3	55.6	55.8	
Vehicle Noise:	62.4	61.5	58.2	53.6	62.2	62.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	41	87	188
CNEL:	20	43	94	202

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: West Yale Loop  
 Road Segment: Birdsong to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,637 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	548 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.06	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.29	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.25	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.2	59.1	57.4	51.3	59.9	60.6
Medium Trucks:	54.2	53.5	47.1	45.6	54.1	54.3
Heavy Trucks:	55.5	54.9	45.9	47.1	55.5	55.6
Vehicle Noise:	62.2	61.3	58.0	53.5	62.0	62.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	40	85	184
CNEL:	20	42	91	197



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Westwood  
 Road Segment: Yorktown to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,031 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 498 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-3.89	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-21.13	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-25.08	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.0	60.0	58.2	52.2	60.8	61.4	
Medium Trucks:	55.3	54.6	48.2	46.7	55.2	55.4	
Heavy Trucks:	57.1	56.5	47.5	48.7	57.1	57.2	
Vehicle Noise:	63.3	62.4	59.0	54.6	63.1	63.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	13	28	60	130
CNEL:	14	30	64	139

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Westwood  
 Road Segment: Bryan Avenue to Leaf

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,919 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	323 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.76	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-23.00	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-26.96	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.2	58.1	56.3	50.3	58.9	59.5
Medium Trucks:	53.4	52.7	46.4	44.8	53.3	53.5
Heavy Trucks:	55.2	54.7	45.6	46.9	55.2	55.4
Vehicle Noise:	61.4	60.5	57.1	52.7	61.2	61.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	10	21	45	97
CNEL:	10	22	48	104

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Yale Avenue  
 Road Segment: Deerfield Avenue to Winvale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,502 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 866 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.57	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-19.81	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-23.77	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.5	65.5	63.7	57.6	66.3	66.9	
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4	
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2	
Vehicle Noise:	68.4	67.5	64.3	59.6	68.2	68.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	131	283
CNEL:	30	65	141	304

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Yale Avenue  
 Road Segment: Hicks Canyon Drive to Meadowood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,828 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 646 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.85	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-21.09	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-25.04	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.2	64.2	62.4	56.4	65.0	65.6	
Medium Trucks:	59.0	58.3	52.0	50.4	58.9	59.1	
Heavy Trucks:	59.8	59.3	50.2	51.5	59.8	60.0	
Vehicle Noise:	67.1	66.2	63.0	58.3	66.9	67.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	233
CNEL:	25	54	116	250

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Yale Avenue  
 Road Segment: Walnut Avenue to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,197 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,254 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 32.140 Medium Trucks: 32.016 Heavy Trucks: 32.141																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.97	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-18.21	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	84.25	-22.16	2.78	-1.20	-5.56	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.2	60.2	68.8	69.4
Medium Trucks:	62.8	62.2	55.8	54.3	62.7	63.0
Heavy Trucks:	63.7	63.1	54.0	55.3	63.6	63.8
Vehicle Noise:	70.9	70.0	66.8	62.2	70.7	71.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	96	207	446
CNEL:	48	103	222	479

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Yale Avenue  
 Road Segment: Roosevelt to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,306 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,180 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.47	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.43	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.0	63.9	62.2	56.1	64.7	65.3	
Medium Trucks:	58.7	58.1	51.7	50.2	58.6	58.9	
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7	
Vehicle Noise:	66.8	65.9	62.8	58.1	66.6	67.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	80	173	372
CNEL:	40	86	185	399

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Yale Avenue  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,416 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,107 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.51	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.75	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.70	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.7	63.6	61.9	55.8	64.4	65.0
Medium Trucks:	58.5	57.8	51.4	49.9	58.3	58.6
Heavy Trucks:	59.3	58.7	49.7	50.9	59.3	59.4
Vehicle Noise:	66.5	65.6	62.5	57.8	66.3	66.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	166	357
CNEL:	38	82	178	383

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Yale Avenue  
 Road Segment: West Yale Loop to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,658 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,044 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.76	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.00	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.96	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.5	63.4	61.6	55.6	64.2	64.8
Medium Trucks:	58.2	57.5	51.2	49.6	58.1	58.3
Heavy Trucks:	59.0	58.5	49.4	50.7	59.0	59.2
Vehicle Noise:	66.3	65.4	62.2	57.6	66.1	66.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	343
CNEL:	37	79	171	368



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Yale Avenue  
 Road Segment: Winvale Avenue to Karen Ann Lane

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,524 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 868 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.76	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.7	62.6	60.8	54.8	63.4	64.0	
Medium Trucks:	57.4	56.7	50.4	48.8	57.3	57.5	
Heavy Trucks:	58.2	57.7	48.6	49.9	58.2	58.4	
Vehicle Noise:	65.5	64.6	61.4	56.8	65.3	65.8	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	141	303
CNEL:	33	70	151	325

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Yale Avenue  
 Road Segment: Karen Ann Lane to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,524 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 868 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.76	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.7	62.6	60.8	54.8	63.4	64.0	
Medium Trucks:	57.4	56.7	50.4	48.8	57.3	57.5	
Heavy Trucks:	58.2	57.7	48.6	49.9	58.2	58.4	
Vehicle Noise:	65.5	64.6	61.4	56.8	65.3	65.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	141	303
CNEL:	33	70	151	325

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Yale Avenue  
 Road Segment: Trabuco Road to Southwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,332 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 852 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.64	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.88	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.84	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.6	62.5	60.7	54.7	63.3	63.9
Medium Trucks:	57.3	56.7	50.3	48.7	57.2	57.4
Heavy Trucks:	58.2	57.6	48.5	49.8	58.1	58.3
Vehicle Noise:	65.4	64.5	61.3	56.7	65.2	65.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	139	300
CNEL:	32	69	149	322

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Yale Avenue  
 Road Segment: Southwood to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,807 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	809 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.87	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.07	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.3	62.3	60.5	54.5	63.1	63.7
Medium Trucks:	57.1	56.4	50.1	48.5	57.0	57.2
Heavy Trucks:	57.9	57.4	48.3	49.6	57.9	58.1
Vehicle Noise:	65.2	64.3	61.1	56.4	65.0	65.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	62	134	289
CNEL:	31	67	144	311

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Yale Avenue  
 Road Segment: Northwood to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,199 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	759 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.34	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.1	62.0	60.2	54.2	62.8	63.4
Medium Trucks:	56.8	56.2	49.8	48.2	56.7	56.9
Heavy Trucks:	57.7	57.1	48.0	49.3	57.6	57.8
Vehicle Noise:	64.9	64.0	60.8	56.2	64.7	65.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	60	129	277
CNEL:	30	64	138	298

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Yale Avenue  
 Road Segment: Bryan Avenue to Monticello

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,895 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	734 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.53	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.49	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.9	61.9	60.1	54.0	62.7	63.3
Medium Trucks:	56.7	56.0	49.6	48.1	56.6	56.8
Heavy Trucks:	57.5	56.9	47.9	49.1	57.5	57.6
Vehicle Noise:	64.8	63.8	60.7	56.0	64.6	65.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	126	271
CNEL:	29	63	135	291

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Yale Avenue  
 Road Segment: Irvine Boulevard to Park Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,432 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	613 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		57.786		
Left View:	-90.0 degrees	Medium Trucks:		57.717		
Right View:	90.0 degrees	Heavy Trucks:		57.787		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.08	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.31	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.27	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.1	61.1	59.3	53.3	61.9	62.5
Medium Trucks:	55.9	55.2	48.9	47.3	55.8	56.0
Heavy Trucks:	56.7	56.2	47.1	48.4	56.7	56.8
Vehicle Noise:	64.0	63.1	59.9	55.2	63.8	64.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	112	241
CNEL:	26	56	120	258

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Yale Avenue  
 Road Segment: University Drive to Royce

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,006 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	331 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	50.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 42.814				
Road Grade:	0.0%	Medium Trucks: 42.720				
Left View:	-90.0 degrees	Heavy Trucks: 42.814				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-6.76	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	79.45	-24.00	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	84.25	-27.95	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.4	60.3	58.6	52.5	61.1	61.8
Medium Trucks:	55.2	54.5	48.1	46.6	55.1	55.3
Heavy Trucks:	56.0	55.4	46.4	47.6	56.0	56.1
Vehicle Noise:	63.2	62.3	59.2	54.5	63.1	63.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	80	172
CNEL:	18	40	86	185



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Yale Court  
 Road Segment: Arborwood to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,472 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	534 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-2.12	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-19.36	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-23.32	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.2	56.2	54.4	48.4	57.0	57.6
Medium Trucks:	52.1	51.4	45.1	43.5	52.0	52.2
Heavy Trucks:	55.3	54.7	45.7	46.9	55.3	55.4
Vehicle Noise:	60.1	59.3	55.4	51.5	60.0	60.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	80
CNEL:	9	18	40	85

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Ada  
 Road Segment: Barranca Parway to Marine Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,050 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,902 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 37.138				
Road Grade: 0.0%	Medium Trucks: 37.030				
Left View: -90.0 degrees	Heavy Trucks: 37.139				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.35	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-15.89	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-19.84	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.7	59.6	68.2	68.8
Medium Trucks:	62.5	61.8	55.4	53.9	62.4	62.6
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9
Vehicle Noise:	70.5	69.6	66.3	61.8	70.3	70.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	85	183	394
CNEL:	42	91	196	422

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Ada  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,443 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,594 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.70	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-14.54	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-18.49	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	65.9	64.1	58.1	66.7	67.3
Medium Trucks:	60.9	60.3	53.9	52.4	60.8	61.1
Heavy Trucks:	62.3	61.7	52.6	53.9	62.2	62.4
Vehicle Noise:	69.0	68.1	64.8	60.3	68.8	69.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	112	241	519
CNEL:	56	120	258	556

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Enterprise to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 76,615 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 6,321 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	5.60	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-11.64	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-15.60	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.9	70.8	69.1	63.0	71.6	72.2
Medium Trucks:	65.5	64.8	58.4	56.9	65.4	65.6
Heavy Trucks:	65.9	65.3	56.3	57.5	65.9	66.0
Vehicle Noise:	73.6	72.7	69.6	64.9	73.4	73.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	142	305	657	1,416
CNEL:	152	328	706	1,521

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: I-5 NB Off-Ramp to Technology Drive West

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 80,851 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 6,670 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	5.83	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-11.41	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-15.36	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.5	71.5	69.7	63.7	72.3	72.9
Medium Trucks:	66.1	65.4	59.1	57.5	66.0	66.2
Heavy Trucks:	66.5	65.9	56.9	58.2	66.5	66.6
Vehicle Noise:	74.2	73.3	70.3	65.5	74.0	74.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	149	321	691	1,489
CNEL:	160	345	742	1,600

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: East Yale Loop to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,166 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,654 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.83	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.41	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.36	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	67.0	60.9	69.5	70.1
Medium Trucks:	63.4	62.7	56.3	54.8	63.2	63.5
Heavy Trucks:	63.8	63.2	54.1	55.4	63.8	63.9
Vehicle Noise:	71.5	70.6	67.5	62.7	71.3	71.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	164	353	761
CNEL:	82	176	380	818

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Gateway Boulevard to Enterprise

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,610 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,845 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.44	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.80	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.75	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.7	66.9	60.9	69.5	70.1
Medium Trucks:	63.3	62.6	56.3	54.7	63.2	63.4
Heavy Trucks:	63.7	63.1	54.1	55.4	63.7	63.8
Vehicle Noise:	71.4	70.5	67.5	62.7	71.2	71.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	102	219	472	1,017
CNEL:	109	235	507	1,092

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Jeffrey Road to Royal Oak

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,401 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,096 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.80	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.39	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.3	61.7	55.3	53.7	62.2	62.4
Heavy Trucks:	62.7	62.2	53.1	54.4	62.7	62.9
Vehicle Noise:	70.5	69.5	66.5	61.7	70.3	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	140	302	650
CNEL:	70	151	324	699



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Daimler Street to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,851 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,050 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.71	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.53	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.48	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.2	61.6	55.2	53.7	62.1	62.3
Heavy Trucks:	62.6	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	70.4	69.4	66.4	61.6	70.2	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	138	298	641
CNEL:	69	148	320	689

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,627 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,032 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.67	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.57	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.52	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.6	65.8	59.7	68.4	69.0
Medium Trucks:	62.2	61.5	55.2	53.6	62.1	62.3
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	70.3	69.4	66.4	61.6	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	137	296	637
CNEL:	68	147	318	685

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: West Yale Loop to Lake Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,512 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,022 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.65	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.59	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.54	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	69.0
Medium Trucks:	62.2	61.5	55.1	53.6	62.1	62.3
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	70.3	69.4	66.3	61.6	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	137	295	635
CNEL:	68	147	317	682

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Technology Drive West to Ada

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 49,987 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,124 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.74	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.49	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.45	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	69.4	67.6	61.6	70.2	70.8
Medium Trucks:	64.0	63.4	57.0	55.4	63.9	64.1
Heavy Trucks:	64.4	63.9	54.8	56.1	64.4	64.6
Vehicle Noise:	72.2	71.2	68.2	63.4	72.0	72.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	108	233	502	1,081
CNEL:	116	250	539	1,161

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Creek Road to East Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,159 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,993 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.59	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.61	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.5	65.7	59.7	68.3	68.9	
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2	
Heavy Trucks:	62.5	61.9	52.9	54.2	62.5	62.6	
Vehicle Noise:	70.2	69.3	66.3	61.5	70.0	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	292	629
CNEL:	68	146	314	676

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Red Hill Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,510 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,940 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.47	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.73	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.4	65.6	59.5	68.2	68.8
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	70.1	69.2	66.2	61.4	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	287	618
CNEL:	66	143	308	664

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Lake Road to Creek Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,987 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,896 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
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FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.82	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.3	65.5	59.4	68.1	68.7	
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0	
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4	
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	282	609
CNEL:	65	141	303	654

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Telemetry to Banting

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,191 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,913 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.41	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.83	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.78	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.3	65.5	59.5	68.1	68.7	
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.0	
Heavy Trucks:	62.3	61.8	52.7	54.0	62.3	62.5	
Vehicle Noise:	70.1	69.1	66.1	61.3	69.9	70.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	284	612
CNEL:	66	142	305	658



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Irvine Boulevard to Commercentre

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 38,024 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,137 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.56	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.68	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.64	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	62.4	61.8	55.4	53.8	62.3	62.5
Heavy Trucks:	62.8	62.3	53.2	54.5	62.8	63.0
Vehicle Noise:	70.6	69.6	66.6	61.8	70.4	70.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	191	412	888
CNEL:	95	205	443	954

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Jenner to Telemetry

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,846 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,885 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.89	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.85	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.2	65.5	59.4	68.0	68.6
Medium Trucks:	61.9	61.2	54.8	53.3	61.7	62.0
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.0	69.1	66.0	61.3	69.8	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	281	606
CNEL:	65	140	302	651

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Irvine Center Drive to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,281 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,241 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.70	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.54	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.50	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.0	67.9	66.2	60.1	68.7	69.3	
Medium Trucks:	62.6	61.9	55.5	54.0	62.4	62.7	
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1	
Vehicle Noise:	70.7	69.8	66.7	62.0	70.5	71.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	195	421	907
CNEL:	97	210	452	975

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Sand Canyon Avenue to Hospital

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 37,094 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,060 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.45	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.79	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.75	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.7	70.6	68.9	62.8	71.4	72.1
Medium Trucks:	65.3	64.6	58.2	56.7	65.2	65.4
Heavy Trucks:	65.7	65.1	56.1	57.3	65.7	65.8
Vehicle Noise:	73.4	72.5	69.4	64.7	73.2	73.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	211	456	981
CNEL:	105	227	489	1,054

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Laguna Canyon Road to Jenner

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,385 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,847 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.94	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	67.2	65.4	59.3	68.0	68.6	
Medium Trucks:	61.8	61.1	54.7	53.2	61.7	61.9	
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3	
Vehicle Noise:	69.9	69.0	65.9	61.2	69.7	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	277	598
CNEL:	64	138	298	642

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred Project Name: Irvine GP  
 Road Name: Alton Parkway Job Number: 15937  
 Road Segment: Technology Drive East to Barranca Pkwy/Muirlands Blvd

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 37,771 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,116 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos:	77.5%	12.9%	9.6%	97.42%
	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
	<b>Noise Source Elevations (in feet)</b>				
	Autos:	2.000			
	Medium Trucks:	4.000			
	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos:	74.458			
	Medium Trucks:	74.404			
	Heavy Trucks:	74.458			

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.53	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.71	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.67	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.8	66.0	59.9	68.6	69.2
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5
Heavy Trucks:	62.8	62.2	53.2	54.4	62.8	62.9
Vehicle Noise:	70.5	69.6	66.6	61.8	70.3	70.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	190	410	884
CNEL:	95	205	441	950

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Royal Oak to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,298 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,757 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.04	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.20	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.15	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	66.9	65.2	59.1	67.7	68.3
Medium Trucks:	61.6	60.9	54.5	53.0	61.4	61.7
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	69.7	68.8	65.7	60.9	69.5	70.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	268	578
CNEL:	62	134	288	621

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Banting to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,046 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,736 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.25	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.21	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.9	66.9	65.1	59.1	67.7	68.3	
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6	
Heavy Trucks:	61.9	61.3	52.3	53.6	61.9	62.0	
Vehicle Noise:	69.6	68.7	65.7	60.9	69.4	69.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	124	266	574
CNEL:	62	133	286	616



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred Project Name: Irvine GP  
 Road Name: Alton Parkway Job Number: 15937  
 Road Segment: Barranca Pkwy/Muirlands Blvd to Jeronimo Road

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 33,513 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,765 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.01	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.23	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.19	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.3	65.5	59.4	68.1	68.7
Medium Trucks:	61.9	61.2	54.8	53.3	61.8	62.0
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.0	69.1	66.0	61.3	69.8	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	176	379	816
CNEL:	88	189	407	877

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Ada to Technology Drive East

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,970 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,803 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.07	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.17	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.13	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.1
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5
Vehicle Noise:	70.1	69.2	66.1	61.3	69.9	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	382	823
CNEL:	88	191	411	885

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,636 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,620 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.31	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.55	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.51	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.6	66.6	64.8	58.8	67.4	68.0	
Medium Trucks:	61.2	60.5	54.2	52.6	61.1	61.3	
Heavy Trucks:	61.6	61.0	52.0	53.3	61.6	61.7	
Vehicle Noise:	69.3	68.4	65.4	60.6	69.1	69.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	254	548
CNEL:	59	127	273	589

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Jeronimo Road to Hughes

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,395 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,590 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.72	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.51	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.47	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	67.0	65.2	59.1	67.8	68.4
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	69.7	68.8	65.8	61.0	69.5	70.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	168	363	781
CNEL:	84	181	390	839

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Hughes to Morgan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,715 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,451 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.49	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.75	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.71	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	66.7	65.0	58.9	67.5	68.1	
Medium Trucks:	61.4	60.7	54.3	52.8	61.2	61.5	
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9	
Vehicle Noise:	69.5	68.6	65.5	60.7	69.3	69.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	350	753
CNEL:	81	174	376	809

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Morgan to Toledo Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,095 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,070 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.75	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.49	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.44	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.1	66.0	64.2	58.2	66.8	67.4	
Medium Trucks:	60.6	59.9	53.6	52.0	60.5	60.7	
Heavy Trucks:	61.0	60.5	51.4	52.7	61.0	61.1	
Vehicle Noise:	68.8	67.8	64.8	60.0	68.6	69.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	145	312	673
CNEL:	72	156	336	723

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: San Marino to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,417 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,097 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.81	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.43	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.39	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.1	66.1	64.3	58.2	66.9	67.5	
Medium Trucks:	60.7	60.0	53.6	52.1	60.6	60.8	
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2	
Vehicle Noise:	68.8	67.9	64.8	60.1	68.6	69.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	146	315	679
CNEL:	73	157	338	729

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Jamboree Road to Murphy Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,653 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,034 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.56	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.52	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	65.9	64.2	58.1	66.7	67.3
Medium Trucks:	60.5	59.9	53.5	52.0	60.4	60.7
Heavy Trucks:	61.0	60.4	51.3	52.6	60.9	61.1
Vehicle Noise:	68.7	67.8	64.7	59.9	68.5	68.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	143	309	665
CNEL:	71	154	332	714



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Hospital to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,790 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,045 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.70	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.54	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.50	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	68.9	67.1	61.1	69.7	70.3
Medium Trucks:	63.5	62.9	56.5	54.9	63.4	63.6
Heavy Trucks:	63.9	63.4	54.3	55.6	63.9	64.0
Vehicle Noise:	71.7	70.7	67.7	62.9	71.5	71.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	348	750
CNEL:	81	174	374	806

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,843 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,967 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.53	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.71	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.66	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	67.0	60.9	69.5	70.1
Medium Trucks:	63.4	62.7	56.3	54.8	63.2	63.5
Heavy Trucks:	63.8	63.2	54.1	55.4	63.8	63.9
Vehicle Noise:	71.5	70.6	67.5	62.7	71.3	71.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	339	731
CNEL:	79	169	364	785

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Murphy Avenue to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,566 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,944 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.48	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.76	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.72	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	64.0	57.9	66.5	67.1
Medium Trucks:	60.3	59.7	53.3	51.8	60.2	60.5
Heavy Trucks:	60.8	60.2	51.1	52.4	60.7	60.9
Vehicle Noise:	68.5	67.6	64.5	59.7	68.3	68.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	139	300	645
CNEL:	69	149	322	693

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Foster to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,154 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,910 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.40	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.84	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.79	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.6	63.9	57.8	66.4	67.1
Medium Trucks:	60.3	59.6	53.2	51.7	60.2	60.4
Heavy Trucks:	60.7	60.1	51.1	52.3	60.7	60.8
Vehicle Noise:	68.4	67.5	64.4	59.7	68.2	68.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	137	296	638
CNEL:	69	148	318	685

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Fairbanks to Foster

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,916 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,808 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.16	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.07	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.03	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.5	65.4	63.6	57.6	66.2	66.8	
Medium Trucks:	60.0	59.4	53.0	51.5	59.9	60.1	
Heavy Trucks:	60.5	59.9	50.8	52.1	60.4	60.6	
Vehicle Noise:	68.2	67.2	64.2	59.4	68.0	68.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	285	615
CNEL:	66	142	307	661

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Toledo Way to Berteau

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,840 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,802 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.05	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.4	63.6	57.6	66.2	66.8
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1
Heavy Trucks:	60.4	59.8	50.8	52.1	60.4	60.5
Vehicle Noise:	68.1	67.2	64.2	59.4	68.0	68.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	285	613
CNEL:	66	142	306	659

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Pacifica to Meridian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,678 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,871 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.31	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.93	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.88	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.7	60.7	69.3	69.9
Medium Trucks:	63.1	62.5	56.1	54.6	63.0	63.3
Heavy Trucks:	63.6	63.0	53.9	55.2	63.5	63.7
Vehicle Noise:	71.3	70.3	67.3	62.5	71.1	71.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	152	328	707
CNEL:	76	164	353	759

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Bertea to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,315 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,758 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.04	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.20	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.15	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0
Heavy Trucks:	60.3	59.7	50.7	52.0	60.3	60.4
Vehicle Noise:	68.0	67.1	64.1	59.3	67.8	68.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	280	604
CNEL:	65	140	301	648



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Meridian to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,601 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,700 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.11	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.34	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.30	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	65.1	63.4	57.3	65.9	66.5
Medium Trucks:	59.8	59.1	52.7	51.2	59.6	59.9
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3
Vehicle Noise:	67.9	67.0	63.9	59.1	67.7	68.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	274	590
CNEL:	63	137	294	634

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Paseo Westpark to San Marino

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,504 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,692 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.13	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.36	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.32	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.2	65.1	63.4	57.3	65.9	66.5	
Medium Trucks:	59.7	59.1	52.7	51.2	59.6	59.9	
Heavy Trucks:	60.2	59.6	50.5	51.8	60.1	60.3	
Vehicle Noise:	67.9	67.0	63.9	59.1	67.7	68.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	273	588
CNEL:	63	136	293	632

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,861 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,474 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.72	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.96	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.92	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.6	64.5	62.8	56.7	65.3	65.9	
Medium Trucks:	59.1	58.5	52.1	50.6	59.0	59.3	
Heavy Trucks:	59.6	59.0	49.9	51.2	59.5	59.7	
Vehicle Noise:	67.3	66.4	63.3	58.5	67.1	67.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	249	536
CNEL:	58	124	268	576

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Astor  
 Road Segment: Lynx to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,393 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,600 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	1.85	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-15.39	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-19.34	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.2	63.2	61.4	55.4	64.0	64.6	
Medium Trucks:	58.7	58.1	51.7	50.2	58.6	58.9	
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3	
Vehicle Noise:	66.7	65.9	62.2	58.1	66.6	67.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	48	103	222
CNEL:	24	51	110	236

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Astor  
 Road Segment: Cadence to Lynx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,767 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,218 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 37.138				
Road Grade: 0.0%		Medium Trucks: 37.030				
Left View: -90.0 degrees		Heavy Trucks: 37.139				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	0.67	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-16.57	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-20.53	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.1	62.0	60.2	54.2	62.8	63.4
Medium Trucks:	57.6	56.9	50.5	49.0	57.4	57.7
Heavy Trucks:	60.0	59.4	50.4	51.7	60.0	60.1
Vehicle Noise:	65.6	64.7	61.1	56.9	65.4	65.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	40	86	185
CNEL:	20	42	91	197

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bake Parkway  
 Road Segment: I-5 NB Off-Ramp to Rockfield Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 95,631 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 7,890 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	6.56	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-10.68	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-14.63	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	74.7	73.6	71.8	65.8	74.4	75.0	
Medium Trucks:	68.2	67.5	61.2	59.6	68.1	68.3	
Heavy Trucks:	68.6	68.0	59.0	60.3	68.6	68.7	
Vehicle Noise:	76.4	75.4	72.4	67.6	76.2	76.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	257	554	1,194	2,572
CNEL:	276	595	1,282	2,763

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bake Parkway  
 Road Segment: Muirlands Boulevard to Jeronimo Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 61,319 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,059 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.63	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-12.61	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-16.56	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.9	69.9	68.1	62.1	70.7	71.3	
Medium Trucks:	64.5	63.8	57.5	55.9	64.4	64.6	
Heavy Trucks:	64.9	64.3	55.3	56.5	64.9	65.0	
Vehicle Noise:	72.6	71.7	68.7	63.9	72.4	72.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	122	263	567	1,221
CNEL:	131	283	609	1,312

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bake Parkway  
 Road Segment: Rockfield Boulevard to Muirlands Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 66,285 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,468 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 56.593				
Road Grade: 0.0%	Medium Trucks: 56.522				
Left View: -90.0 degrees	Heavy Trucks: 56.593				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.97	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-12.27	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-16.22	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.1	72.0	70.2	64.2	72.8	73.4	
Medium Trucks:	66.6	66.0	59.6	58.1	66.5	66.7	
Heavy Trucks:	67.0	66.5	57.4	58.7	67.0	67.2	
Vehicle Noise:	74.8	73.8	70.8	66.0	74.6	75.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	201	434	935	2,014
CNEL:	216	466	1,004	2,164



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bake Parkway  
 Road Segment: Jeronimo Road to Toledo Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 49,538 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,087 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.49	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.0	68.9	67.2	61.1	69.7	70.4	
Medium Trucks:	63.6	62.9	56.5	55.0	63.5	63.7	
Heavy Trucks:	64.0	63.4	54.4	55.6	64.0	64.1	
Vehicle Noise:	71.7	70.8	67.7	63.0	71.5	72.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	228	491	1,059
CNEL:	114	245	528	1,138

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bake Parkway  
 Road Segment: Toledo Way to Cromwell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,757 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,775 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.36	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.88	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.83	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.8	60.8	69.4	70.0
Medium Trucks:	63.2	62.6	56.2	54.7	63.1	63.3
Heavy Trucks:	63.6	63.1	54.0	55.3	63.6	63.8
Vehicle Noise:	71.4	70.4	67.4	62.6	71.2	71.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	466	1,004
CNEL:	108	232	501	1,079

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Bake Parkway  
 Road Segment: Cromwell to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,473 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,752 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.33	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.90	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.86	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.6	66.8	60.8	69.4	70.0
Medium Trucks:	63.2	62.5	56.2	54.6	63.1	63.3
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7
Vehicle Noise:	71.3	70.4	67.4	62.6	71.1	71.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	215	464	1,000
CNEL:	107	232	499	1,075

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bake Parkway  
 Road Segment: Research Drive to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,172 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,324 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.25	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.98	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.94	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.5	64.7	58.7	67.3	67.9
Medium Trucks:	61.1	60.5	54.1	52.5	61.0	61.2
Heavy Trucks:	61.5	61.0	51.9	53.2	61.5	61.6
Vehicle Noise:	69.3	68.3	65.3	60.5	69.1	69.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	337	727
CNEL:	78	168	362	781

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bake Parkway  
 Road Segment: Irvine Center Drive to Research Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,545 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 787 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.45	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-20.68	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-24.64	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.9	61.8	60.0	54.0	62.6	63.2	
Medium Trucks:	56.4	55.8	49.4	47.8	56.3	56.5	
Heavy Trucks:	56.8	56.3	47.2	48.5	56.8	56.9	
Vehicle Noise:	64.6	63.6	60.6	55.8	64.4	64.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	164	353
CNEL:	38	82	176	380

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Bake Parkway  
 Road Segment: Lake Forest Drive to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,811 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	562 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	84.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 74.458				
Road Grade:	0.0%	Medium Trucks: 74.404				
Left View:	-90.0 degrees	Heavy Trucks: 74.458				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.91	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-22.15	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-26.11	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.4	60.3	58.6	52.5	61.1	61.7
Medium Trucks:	55.0	54.3	47.9	46.4	54.8	55.1
Heavy Trucks:	55.4	54.8	45.8	47.0	55.4	55.5
Vehicle Noise:	63.1	62.2	59.1	54.3	62.9	63.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	131	282
CNEL:	30	65	141	303

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Banting  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,427 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 448 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-4.35	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-21.59	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-25.54	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.7	56.6	54.9	48.8	57.4	58.1
Medium Trucks:	51.9	51.3	44.9	43.3	51.8	52.0
Heavy Trucks:	53.8	53.2	44.2	45.4	53.8	53.9
Vehicle Noise:	59.9	59.1	55.6	51.2	59.8	60.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	13	28	60	130
CNEL:	14	30	64	138

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Pacifica to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,247 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,825 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.69	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-15.55	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.51	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.2	70.2	68.4	62.3	71.0	71.6
Medium Trucks:	64.6	63.9	57.6	56.0	64.5	64.7
Heavy Trucks:	64.6	64.1	55.0	56.3	64.6	64.8
Vehicle Noise:	72.8	71.9	68.9	64.0	72.6	73.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	201	432	932
CNEL:	100	216	465	1,002



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Banting to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,312 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,583 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.30	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-15.94	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.89	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.8	68.0	61.9	70.6	71.2
Medium Trucks:	64.2	63.6	57.2	55.6	64.1	64.3
Heavy Trucks:	64.3	63.7	54.6	55.9	64.2	64.4
Vehicle Noise:	72.4	71.5	68.5	63.7	72.2	72.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	189	407	877
CNEL:	94	203	438	944

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: I-5 HOV Ramp to Technology Drive West

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,030 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,560 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-15.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.93	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.7	68.0	61.9	70.5	71.1
Medium Trucks:	64.2	63.5	57.2	55.6	64.1	64.3
Heavy Trucks:	64.2	63.6	54.6	55.8	64.2	64.3
Vehicle Noise:	72.4	71.4	68.5	63.6	72.2	72.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	188	405	872
CNEL:	94	202	436	938

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Technology Drive West to Ada

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,409 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,509 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.02	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.6	67.9	61.8	70.4	71.1
Medium Trucks:	64.1	63.4	57.1	55.5	64.0	64.2
Heavy Trucks:	64.1	63.5	54.5	55.8	64.1	64.2
Vehicle Noise:	72.3	71.4	68.4	63.5	72.1	72.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	399	861
CNEL:	93	199	430	926

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Irvine Center Drive to I-5 HOV Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,916 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,386 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.95	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.28	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.24	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	69.4	67.7	61.6	70.2	70.8
Medium Trucks:	63.9	63.2	56.8	55.3	63.8	64.0
Heavy Trucks:	63.9	63.3	54.3	55.5	63.9	64.0
Vehicle Noise:	72.1	71.1	68.2	63.3	71.9	72.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	179	386	832
CNEL:	90	193	416	895

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,904 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,302 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.80	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.44	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.40	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.3	67.5	61.4	70.1	70.7
Medium Trucks:	63.7	63.1	56.7	55.1	63.6	63.8
Heavy Trucks:	63.8	63.2	54.1	55.4	63.7	63.9
Vehicle Noise:	71.9	71.0	68.0	63.2	71.7	72.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	175	377	813
CNEL:	87	188	406	874

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: East Yale Loop to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,289 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,251 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.70	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.54	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.49	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	69.2	67.4	61.4	70.0	70.6
Medium Trucks:	63.6	63.0	56.6	55.1	63.5	63.7
Heavy Trucks:	63.7	63.1	54.0	55.3	63.6	63.8
Vehicle Noise:	71.8	70.9	67.9	63.1	71.6	72.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	172	372	801
CNEL:	86	186	400	861

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: West Yale Loop to Lake Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,674 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,201 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.64	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.59	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.1	67.3	61.3	69.9	70.5
Medium Trucks:	63.5	62.9	56.5	55.0	63.4	63.6
Heavy Trucks:	63.6	63.0	53.9	55.2	63.5	63.7
Vehicle Noise:	71.7	70.8	67.8	63.0	71.5	72.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	170	366	789
CNEL:	85	183	394	848

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Ada to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,859 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,216 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.63	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.61	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.56	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	69.1	67.3	61.3	69.9	70.5
Medium Trucks:	63.6	62.9	56.5	55.0	63.4	63.7
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7
Vehicle Noise:	71.7	70.8	67.9	63.0	71.5	72.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	171	368	792
CNEL:	85	184	396	852



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Lake Road to Creek Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,910 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,055 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.31	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.93	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.89	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.8	67.0	61.0	69.6	70.2
Medium Trucks:	63.2	62.6	56.2	54.7	63.1	63.3
Heavy Trucks:	63.3	62.7	53.6	54.9	63.2	63.4
Vehicle Noise:	71.4	70.5	67.5	62.7	71.2	71.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	350	753
CNEL:	81	175	376	811

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Red Hill Avenue to Armstrong Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,771 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,941 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.13	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-14.10	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-18.06	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.8	71.7	70.0	63.9	72.5	73.1
Medium Trucks:	66.2	65.5	59.2	57.6	66.1	66.3
Heavy Trucks:	66.2	65.6	56.6	57.9	66.2	66.3
Vehicle Noise:	74.4	73.5	70.5	65.6	74.2	74.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	190	409	882	1,900
CNEL:	204	440	949	2,044

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Discovery/Herchel to Banting

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,148 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,992 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.02	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.9	60.8	69.4	70.0
Medium Trucks:	63.1	62.4	56.1	54.5	63.0	63.2
Heavy Trucks:	63.1	62.5	53.5	54.8	63.1	63.2
Vehicle Noise:	71.3	70.4	67.4	62.5	71.1	71.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	343	738
CNEL:	79	171	368	794

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Lyon to East Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,579 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,945 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.07	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.17	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.13	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.8	60.7	69.3	69.9
Medium Trucks:	63.0	62.3	56.0	54.4	62.9	63.1
Heavy Trucks:	63.0	62.4	53.4	54.7	63.0	63.1
Vehicle Noise:	71.2	70.3	67.3	62.4	71.0	71.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	156	337	726
CNEL:	78	168	363	781

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Creek Road to Lyon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,163 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,911 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.25	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.20	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.5	68.5	66.7	60.6	69.3	69.9	
Medium Trucks:	62.9	62.2	55.9	54.3	62.8	63.0	
Heavy Trucks:	62.9	62.4	53.3	54.6	62.9	63.1	
Vehicle Noise:	71.1	70.2	67.2	62.3	70.9	71.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	72	155	333	718
CNEL:	77	166	358	772

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 41,461 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,421 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.52	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.72	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.68	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.7	68.0	61.9	70.6	71.2
Medium Trucks:	64.2	63.5	57.2	55.6	64.1	64.3
Heavy Trucks:	64.2	63.6	54.6	55.9	64.2	64.3
Vehicle Noise:	72.4	71.5	68.5	63.6	72.2	72.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	112	241	520	1,119
CNEL:	120	259	559	1,204

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Sand Canyon Avenue to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,188 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,665 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos: 77.5% 12.9% 9.6% 97.42% Medium Trucks: 84.8% 4.9% 10.3% 1.84% Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
	<b>Noise Source Elevations (in feet)</b>				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0				
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.61	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.85	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.80	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.9	67.9	66.1	60.0	68.7	69.3	
Medium Trucks:	62.3	61.6	55.3	53.7	62.2	62.4	
Heavy Trucks:	62.3	61.8	52.7	54.0	62.3	62.5	
Vehicle Noise:	70.5	69.6	66.6	61.8	70.3	70.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	141	304	655
CNEL:	70	152	327	705

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Armstrong Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 38,551 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,180 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.20	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.04	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.99	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	69.4	67.7	61.6	70.2	70.8
Medium Trucks:	63.9	63.2	56.9	55.3	63.8	64.0
Heavy Trucks:	63.9	63.3	54.3	55.5	63.9	64.0
Vehicle Noise:	72.1	71.1	68.2	63.3	71.9	72.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	107	230	495	1,066
CNEL:	115	247	532	1,147



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,557 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,613 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.75	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.94	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	66.0	59.9	68.5	69.1
Medium Trucks:	62.2	61.5	55.1	53.6	62.1	62.3
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	70.4	69.4	66.5	61.6	70.2	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	138	298	641
CNEL:	69	149	320	690

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Jamboree Road to Construction Circle

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,326 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,584 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.30	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.94	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.89	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.1	66.4	60.3	68.9	69.5
Medium Trucks:	62.6	61.9	55.5	54.0	62.5	62.7
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	70.8	69.8	66.9	62.0	70.6	71.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	197	425	915
CNEL:	98	212	457	985

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Santa Rosa to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,197 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,491 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.14	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.10	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.05	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	68.0	66.2	60.1	68.8	69.4
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5
Heavy Trucks:	62.4	61.9	52.8	54.1	62.4	62.6
Vehicle Noise:	70.6	69.7	66.7	61.8	70.4	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	192	415	893
CNEL:	96	207	446	961

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: FedEx to Discovery/Herchel

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,670 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,458 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.42	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.38	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	61.7	61.1	54.7	53.2	61.6	61.9
Heavy Trucks:	61.8	61.2	52.1	53.4	61.8	61.9
Vehicle Noise:	69.9	69.0	66.0	61.2	69.7	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	278	599
CNEL:	64	139	299	645

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Jeffrey Road to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,571 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,450 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.40	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.3	65.5	59.4	68.1	68.7	
Medium Trucks:	61.7	61.0	54.7	53.1	61.6	61.8	
Heavy Trucks:	61.7	61.2	52.1	53.4	61.7	61.9	
Vehicle Noise:	69.9	69.0	66.0	61.1	69.7	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	277	597
CNEL:	64	138	298	642

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Laguna Canyon Road to FedEx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,419 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.30	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.54	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.50	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.2	65.4	59.3	68.0	68.6
Medium Trucks:	61.6	61.0	54.6	53.0	61.5	61.7
Heavy Trucks:	61.7	61.1	52.0	53.3	61.6	61.8
Vehicle Noise:	69.8	68.9	65.9	61.1	69.6	70.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	273	589
CNEL:	63	136	294	633

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Pullman Street to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 37,452 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,090 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.08	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-15.16	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-19.12	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.7	70.7	68.9	62.9	71.5	72.1
Medium Trucks:	65.1	64.5	58.1	56.6	65.0	65.3
Heavy Trucks:	65.2	64.6	55.5	56.8	65.2	65.3
Vehicle Noise:	73.3	72.4	69.4	64.6	73.1	73.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	162	348	750	1,615
CNEL:	174	374	807	1,738

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Construction Circle to Fire Station

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,431 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,263 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.72	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.51	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.47	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.6	67.5	65.8	59.7	68.3	69.0	
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1	
Heavy Trucks:	62.0	61.4	52.4	53.7	62.0	62.1	
Vehicle Noise:	70.2	69.3	66.3	61.4	70.0	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	389	838
CNEL:	90	194	418	901



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Fire Station to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,431 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,263 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.72	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.51	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.47	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	69.0
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.0	61.4	52.4	53.7	62.0	62.1
Vehicle Noise:	70.2	69.3	66.3	61.4	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	389	838
CNEL:	90	194	418	901

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Paseo Westpark to Santa Rosa

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,241 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,247 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.69	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.54	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.50	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.7	59.7	68.3	68.9
Medium Trucks:	62.0	61.3	54.9	53.4	61.8	62.1
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	70.2	69.2	66.3	61.4	70.0	70.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	180	387	834
CNEL:	90	193	416	897

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,071 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,068 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.33	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.90	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.86	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	67.2	65.4	59.3	68.0	68.6	
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7	
Heavy Trucks:	61.6	61.1	52.0	53.3	61.6	61.7	
Vehicle Noise:	69.8	68.9	65.9	61.0	69.6	70.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	170	366	789
CNEL:	85	183	394	849

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Bay Tree  
 Road Segment: Trabuco Road to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,742 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	226 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-7.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-24.55	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-28.51	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.7	53.7	51.9	45.9	54.5	55.1
Medium Trucks:	49.0	48.3	41.9	40.4	48.8	49.1
Heavy Trucks:	50.8	50.2	41.2	42.4	50.8	50.9
Vehicle Noise:	57.0	56.1	52.6	48.3	56.8	57.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	18	38	82
CNEL:	9	19	41	88

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Beacon  
 Road Segment: Ridge Valley to Benchmark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,509 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	290 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-5.57	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-22.81	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-26.77	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.8	55.7	54.0	47.9	56.5	57.2
Medium Trucks:	51.3	50.6	44.3	42.7	51.2	51.4
Heavy Trucks:	53.8	53.2	44.2	45.4	53.8	53.9
Vehicle Noise:	59.3	58.5	54.8	50.6	59.1	59.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	15	33	71
CNEL:	8	16	35	76

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Benchmark (LN Street)  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,745 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 144 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-8.61	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-25.85	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-29.80	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.8	52.7	50.9	44.9	53.5	54.1
Medium Trucks:	48.3	47.6	41.3	39.7	48.2	48.4
Heavy Trucks:	50.8	50.2	41.1	42.4	50.7	50.9
Vehicle Noise:	56.3	55.4	51.8	47.6	56.1	56.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	10	21	44
CNEL:	5	10	22	47

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bison Avenue  
 Road Segment: SR-73 NB Off-Ramp to California Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,773 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,126 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.33	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.91	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.87	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.5	64.7	58.7	67.3	67.9
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4
Heavy Trucks:	62.1	61.6	52.5	53.8	62.1	62.2
Vehicle Noise:	69.4	68.5	65.3	60.6	69.2	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	119	256	551
CNEL:	59	127	274	591

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Bonita Canyon Drive  
 Road Segment: MacArthur Boulevard to SR-73

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,737 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,536 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.63	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.61	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-19.56	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.2	65.5	59.4	68.0	68.6
Medium Trucks:	61.9	61.2	54.8	53.3	61.7	62.0
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.0	69.1	66.0	61.3	69.8	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	338	727
CNEL:	78	168	363	781



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Bonita Canyon Drive  
 Road Segment: Turtle Ridge to Shady Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,728 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,710 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.08	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.32	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-21.27	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.5	63.8	57.7	66.3	66.9
Medium Trucks:	60.2	59.5	53.1	51.6	60.0	60.3
Heavy Trucks:	60.6	60.0	50.9	52.2	60.6	60.7
Vehicle Noise:	68.3	67.4	64.3	59.5	68.1	68.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	120	260	559
CNEL:	60	129	279	601

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bonita Canyon Drive  
 Road Segment: Newport Coast Drive to Turtle Ridge

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,103 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,576 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 70.413				
Road Grade: 0.0%	Medium Trucks: 70.356				
Left View: -90.0 degrees	Heavy Trucks: 70.413				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.43	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.67	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-21.63	-2.33	-1.20	-5.25	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.2	65.2	63.4	57.4	66.0	66.6	
Medium Trucks:	59.8	59.1	52.8	51.2	59.7	59.9	
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3	
Vehicle Noise:	67.9	67.0	64.0	59.2	67.7	68.2	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	246	530
CNEL:	57	123	264	569

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Bonita Canyon Drive  
 Road Segment: SR-73 NB Off-Ramp to Newport Coast Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,113 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,494 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.66	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.90	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-21.86	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.2	57.1	65.7	66.3
Medium Trucks:	59.6	58.9	52.5	51.0	59.5	59.7
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1
Vehicle Noise:	67.7	66.8	63.7	59.0	67.5	68.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	110	237	511
CNEL:	55	118	255	549

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bosque  
 Road Segment: Cadence to Great Park Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,836 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,059 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	0.06	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-17.18	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-21.14	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.4	61.4	59.6	53.6	62.2	62.8
Medium Trucks:	57.0	56.3	49.9	48.4	56.8	57.1
Heavy Trucks:	59.4	58.8	49.8	51.0	59.4	59.5
Vehicle Noise:	65.0	64.1	60.4	56.3	64.8	65.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	36	78	168
CNEL:	18	39	83	179

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Bosque  
 Road Segment: Irvine Boulevard to Benchmark (LN Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,601 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	710 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-1.68	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-18.92	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-22.87	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.7	59.6	57.9	51.8	60.4	61.0
Medium Trucks:	55.2	54.5	48.2	46.6	55.1	55.3
Heavy Trucks:	57.7	57.1	48.1	49.3	57.7	57.8
Vehicle Noise:	63.2	62.3	58.7	54.5	63.0	63.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	13	28	60	129
CNEL:	14	30	64	137

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bosque  
 Road Segment: Benchmark to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,908 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 652 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-2.04	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-19.28	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-23.24	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.3	59.3	57.5	51.5	60.1	60.7	
Medium Trucks:	54.8	54.2	47.8	46.3	54.7	55.0	
Heavy Trucks:	57.3	56.7	47.7	48.9	57.3	57.4	
Vehicle Noise:	62.8	62.0	58.3	54.2	62.7	63.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	26	57	122
CNEL:	13	28	60	130

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Bosque  
 Road Segment: Great Park Boulevard to Beacon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1,828 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	151 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-8.41	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-25.64	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-29.60	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.0	52.9	51.2	45.1	53.7	54.3
Medium Trucks:	48.5	47.8	41.5	39.9	48.4	48.6
Heavy Trucks:	51.0	50.4	41.3	42.6	50.9	51.1
Vehicle Noise:	56.5	55.6	52.0	47.8	56.3	56.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	10	21	46
CNEL:	5	11	23	49

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bosque  
 Road Segment: Beacon to S 5th Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,591 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 131 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-9.01	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-26.25	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-30.20	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	53.4	52.3	50.5	44.5	53.1	53.7	
Medium Trucks:	47.9	47.2	40.9	39.3	47.8	48.0	
Heavy Trucks:	50.4	49.8	40.7	42.0	50.3	50.5	
Vehicle Noise:	55.9	55.0	51.4	47.2	55.7	56.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	19	42
CNEL:	4	10	21	45



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bryan Avenue  
 Road Segment: Jamboree Road to Market Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,962 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,812 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.63	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.61	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.56	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.8	65.8	64.0	58.0	66.6	67.2	
Medium Trucks:	60.6	59.9	53.6	52.0	60.5	60.7	
Heavy Trucks:	61.4	60.9	51.8	53.1	61.4	61.6	
Vehicle Noise:	68.7	67.8	64.6	59.9	68.5	68.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	107	230	495
CNEL:	53	115	247	532

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bryan Avenue  
 Road Segment: Market Place to El Camino Real

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,782 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.68	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.64	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.8	65.7	63.9	57.9	66.5	67.1	
Medium Trucks:	60.5	59.9	53.5	52.0	60.4	60.6	
Heavy Trucks:	61.4	60.8	51.7	53.0	61.4	61.5	
Vehicle Noise:	68.6	67.7	64.6	59.9	68.4	68.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	106	227	490
CNEL:	53	113	244	526

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Bryan Avenue  
 Road Segment: Rubicon to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,545 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,777 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.55	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.69	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.65	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	61.4	60.8	51.7	53.0	61.3	61.5
Vehicle Noise:	68.6	67.7	64.5	59.9	68.4	68.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	105	227	489
CNEL:	52	113	244	525

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bryan Avenue  
 Road Segment: El Camino Real to Rubicon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,404 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,766 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.52	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.68	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.8	66.5	67.1
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	61.3	60.7	51.7	53.0	61.3	61.4
Vehicle Noise:	68.6	67.7	64.5	59.8	68.4	68.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	105	226	487
CNEL:	52	113	243	522

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bryan Avenue  
 Road Segment: Eastwood to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,773 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,136 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.40	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.63	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.59	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.8	63.8	62.0	55.9	64.6	65.2	
Medium Trucks:	58.6	57.9	51.5	50.0	58.5	58.7	
Heavy Trucks:	59.4	58.8	49.8	51.0	59.4	59.5	
Vehicle Noise:	66.7	65.7	62.6	57.9	66.5	66.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	169	363
CNEL:	39	84	181	389

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bryan Avenue  
 Road Segment: Westwood to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,845 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,060 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.70	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.94	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.89	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.5	63.5	61.7	55.6	64.3	64.9
Medium Trucks:	58.3	57.6	51.2	49.7	58.2	58.4
Heavy Trucks:	59.1	58.5	49.5	50.7	59.1	59.2
Vehicle Noise:	66.4	65.4	62.3	57.6	66.2	66.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	75	161	347
CNEL:	37	80	173	372

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bryan Avenue  
 Road Segment: Culver Drive to Westwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,666 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,045 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.76	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.00	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.95	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.5	63.4	61.6	55.6	64.2	64.8	
Medium Trucks:	58.2	57.5	51.2	49.6	58.1	58.3	
Heavy Trucks:	59.1	58.5	49.4	50.7	59.0	59.2	
Vehicle Noise:	66.3	65.4	62.2	57.6	66.1	66.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	343
CNEL:	37	79	171	368

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bryan Avenue  
 Road Segment: Yale Avenue to Eastwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,224 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,008 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.91	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.15	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.11	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.3	63.2	61.5	55.4	64.0	64.6	
Medium Trucks:	58.1	57.4	51.0	49.5	57.9	58.2	
Heavy Trucks:	58.9	58.3	49.3	50.5	58.9	59.0	
Vehicle Noise:	66.1	65.2	62.1	57.4	65.9	66.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	72	156	335
CNEL:	36	77	167	360



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Cadence  
 Road Segment: Pusan to Chinon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,990 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	577 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.83	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-21.07	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-25.02	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.3	62.3	60.5	54.4	63.1	63.7
Medium Trucks:	57.3	56.6	50.3	48.7	57.2	57.4
Heavy Trucks:	58.6	58.0	49.0	50.2	58.6	58.7
Vehicle Noise:	65.3	64.4	61.2	56.6	65.1	65.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	38	83	178
CNEL:	19	41	88	190

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Cadence  
 Road Segment: Bosque to Pusan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,549 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	540 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.11	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-21.35	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-25.31	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.0	62.0	60.2	54.1	62.8	63.4
Medium Trucks:	57.0	56.3	50.0	48.4	56.9	57.1
Heavy Trucks:	58.3	57.7	48.7	49.9	58.3	58.4
Vehicle Noise:	65.0	64.1	60.9	56.3	64.9	65.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	79	170
CNEL:	18	39	85	182

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Cadence  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,745 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	391 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.51	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-22.75	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-26.71	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.6	60.6	58.8	52.7	61.4	62.0
Medium Trucks:	55.6	54.9	48.6	47.0	55.5	55.7
Heavy Trucks:	56.9	56.3	47.3	48.5	56.9	57.0
Vehicle Noise:	63.6	62.7	59.5	54.9	63.5	63.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	30	64	137
CNEL:	15	32	68	147

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Cadence  
 Road Segment: Chinon to Merit

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,194 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 264 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-7.23	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-24.47	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-28.43	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.9	58.9	57.1	51.0	59.7	60.3
Medium Trucks:	53.9	53.2	46.9	45.3	53.8	54.0
Heavy Trucks:	55.2	54.6	45.6	46.8	55.2	55.3
Vehicle Noise:	61.9	61.0	57.8	53.2	61.7	62.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	23	49	105
CNEL:	11	24	52	113

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Cadence  
 Road Segment: Merit to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1,700 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	140 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		37.138		
Left View:	-90.0 degrees	Medium Trucks:		37.030		
Right View:	90.0 degrees	Heavy Trucks:		37.139		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-9.97	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-27.21	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-31.16	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.2	56.1	54.3	48.3	56.9	57.5
Medium Trucks:	51.2	50.5	44.1	42.6	51.0	51.3
Heavy Trucks:	52.5	51.9	42.8	44.1	52.4	52.6
Vehicle Noise:	59.2	58.3	55.0	50.5	59.0	59.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	15	32	69
CNEL:	7	16	34	74

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: California Avenue  
 Road Segment: University Drive to Academy Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,819 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,305 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.48	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.0	62.9	61.2	55.1	63.7	64.3
Medium Trucks:	58.0	57.3	50.9	49.4	57.8	58.1
Heavy Trucks:	59.3	58.7	49.6	50.9	59.3	59.4
Vehicle Noise:	66.0	65.1	61.8	57.3	65.8	66.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	152	328
CNEL:	35	76	163	351

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: California Avenue  
 Road Segment: Campus Drive to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,927 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 819 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.31	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.55	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.50	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.0	60.9	59.1	53.1	61.7	62.3	
Medium Trucks:	55.9	55.3	48.9	47.4	55.8	56.0	
Heavy Trucks:	57.2	56.7	47.6	48.9	57.2	57.4	
Vehicle Noise:	64.0	63.1	59.8	55.2	63.8	64.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	112	241
CNEL:	26	55	120	258

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: California Avenue  
 Road Segment: Theory to Bison Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,277 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	765 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.84	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.79	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.7	60.6	58.8	52.8	61.4	62.0
Medium Trucks:	55.6	55.0	48.6	47.1	55.5	55.8
Heavy Trucks:	57.0	56.4	47.3	48.6	56.9	57.1
Vehicle Noise:	63.7	62.8	59.5	55.0	63.5	63.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	107	230
CNEL:	25	53	114	246



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Campus Drive  
 Road Segment: Carlson Avenue to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,558 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,356 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 42.814				
Road Grade: 0.0%		Medium Trucks: 42.720				
Left View: -90.0 degrees		Heavy Trucks: 42.814				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.31	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-15.93	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-19.88	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.2	70.2	68.4	62.3	71.0	71.6
Medium Trucks:	64.8	64.1	57.8	56.2	64.7	64.9
Heavy Trucks:	65.2	64.6	55.6	56.8	65.2	65.3
Vehicle Noise:	72.9	72.0	69.0	64.2	72.7	73.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	164	353	759
CNEL:	82	176	379	816

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Campus Drive  
 Road Segment: University Drive to Bridge Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,269 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,662 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.84	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.35	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.8	68.7	67.0	60.9	69.5	70.1	
Medium Trucks:	63.4	62.7	56.3	54.8	63.2	63.5	
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9	
Vehicle Noise:	71.5	70.6	67.5	62.8	71.3	71.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	164	354	763
CNEL:	82	177	380	820

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Campus Drive  
 Road Segment: Jamboree Road to Carlson Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,078 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,481 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.70	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.66	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.5	68.4	66.7	60.6	69.2	69.8
Medium Trucks:	63.1	62.4	56.0	54.5	62.9	63.2
Heavy Trucks:	63.5	62.9	53.9	55.1	63.5	63.6
Vehicle Noise:	71.2	70.3	67.2	62.4	71.0	71.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	338	728
CNEL:	78	169	363	782

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Campus Drive  
 Road Segment: Stanford Court to Berkeley Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,506 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,269 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.09	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.04	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.1	68.0	66.3	60.2	68.8	69.5	
Medium Trucks:	62.7	62.0	55.6	54.1	62.6	62.8	
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2	
Vehicle Noise:	70.8	69.9	66.8	62.1	70.6	71.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	148	318	686
CNEL:	74	159	342	737

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Campus Drive  
 Road Segment: California Avenue to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,527 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,188 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.99	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.25	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.20	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.0	67.9	66.1	60.1	68.7	69.3	
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6	
Heavy Trucks:	62.9	62.3	53.3	54.6	62.9	63.0	
Vehicle Noise:	70.6	69.7	66.7	61.9	70.4	70.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	311	669
CNEL:	72	155	334	719

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Campus Drive  
 Road Segment: Berkeley Avenue to Cornell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,299 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,757 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.04	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.20	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.15	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	66.9	65.2	59.1	67.7	68.3
Medium Trucks:	61.6	60.9	54.5	53.0	61.4	61.7
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	69.7	68.8	65.7	60.9	69.5	70.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	268	578
CNEL:	62	134	288	621

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Campus Drive  
 Road Segment: Martin to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,910 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,395 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.96	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.20	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.16	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	65.9	64.2	58.1	66.7	67.3
Medium Trucks:	60.6	59.9	53.5	52.0	60.4	60.7
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1
Vehicle Noise:	68.7	67.8	64.7	59.9	68.5	69.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	107	230	496
CNEL:	53	115	247	533

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred Project Name: Irvine GP  
 Road Name: Campus Drive Job Number: 15937  
 Road Segment: Culver Drive to Paseo Montoya (Turtle Rock Drive)

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,918 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,313 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.46	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.42	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.8	66.5	67.1
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4
Heavy Trucks:	60.7	60.1	51.1	52.3	60.7	60.8
Vehicle Noise:	68.4	67.5	64.5	59.7	68.2	68.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	221	476
CNEL:	51	110	238	512



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Campus Drive  
 Road Segment: Von Karman Avenue to Teller Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,558 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,201 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.61	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.85	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.81	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0
Heavy Trucks:	60.3	59.7	50.7	52.0	60.3	60.4
Vehicle Noise:	68.0	67.1	64.1	59.3	67.8	68.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	97	208	449
CNEL:	48	104	224	482

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Campus Drive  
 Road Segment: MacArthur Boulevard to Martin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,164 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,169 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.73	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.97	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.93	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.2	65.2	63.4	57.3	66.0	66.6	
Medium Trucks:	59.8	59.1	52.8	51.2	59.7	59.9	
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3	
Vehicle Noise:	67.9	67.0	64.0	59.2	67.7	68.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	95	205	441
CNEL:	47	102	220	473

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Campus Drive  
 Road Segment: Teller Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,947 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 986 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.47	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.71	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.67	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.5	64.4	62.7	56.6	65.2	65.8	
Medium Trucks:	59.1	58.4	52.0	50.5	58.9	59.2	
Heavy Trucks:	59.5	58.9	49.8	51.1	59.4	59.6	
Vehicle Noise:	67.2	66.3	63.2	58.4	67.0	67.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	85	183	393
CNEL:	42	91	196	423

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Carlson Avenue  
 Road Segment: Michelson Drive to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,196 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,089 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.04	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.28	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.23	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.9	63.1	57.0	65.7	66.3
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0
Vehicle Noise:	67.6	66.7	63.7	58.9	67.4	67.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	91	195	420
CNEL:	45	97	210	452

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Chinon  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,756 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	392 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-3.46	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-20.70	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-24.66	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.9	54.8	53.1	47.0	55.6	56.3
Medium Trucks:	50.7	50.1	43.7	42.2	50.6	50.9
Heavy Trucks:	54.0	53.4	44.3	45.6	53.9	54.1
Vehicle Noise:	58.8	58.0	54.0	50.1	58.6	59.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	14	30	65
CNEL:	7	15	32	70

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Creek Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,726 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	390 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-3.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-20.73	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-24.68	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.0	51.9	50.2	44.1	52.7	53.3
Medium Trucks:	47.8	47.2	40.8	39.3	47.7	47.9
Heavy Trucks:	51.0	50.5	41.4	42.7	51.0	51.2
Vehicle Noise:	55.9	55.0	51.1	47.2	55.7	56.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	15	32	70
CNEL:	7	16	34	74

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 61,011 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,033 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.20	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.04	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.00	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.1	71.0	69.2	63.2	71.8	72.4	
Medium Trucks:	65.5	64.8	58.4	56.9	65.4	65.6	
Heavy Trucks:	65.5	64.9	55.9	57.1	65.5	65.6	
Vehicle Noise:	73.7	72.7	69.8	64.9	73.5	73.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	308	663	1,428
CNEL:	154	331	713	1,536

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 59,757 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,930 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.11	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.13	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.09	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.0	70.9	69.2	63.1	71.7	72.3	
Medium Trucks:	65.4	64.7	58.3	56.8	65.3	65.5	
Heavy Trucks:	65.4	64.8	55.8	57.0	65.4	65.5	
Vehicle Noise:	73.6	72.6	69.7	64.8	73.4	73.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	141	303	654	1,408
CNEL:	151	326	703	1,515



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 60,773 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,014 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.18	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.06	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.02	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.1	71.0	69.2	63.2	71.8	72.4	
Medium Trucks:	65.5	64.8	58.4	56.9	65.3	65.6	
Heavy Trucks:	65.5	64.9	55.9	57.1	65.5	65.6	
Vehicle Noise:	73.6	72.7	69.8	64.9	73.4	73.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	142	307	661	1,424
CNEL:	153	330	711	1,532

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Scottsdale Drive to I-5 SB Off- Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 59,917 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,943 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.12	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.08	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.0	70.9	69.2	63.1	71.7	72.3
Medium Trucks:	65.4	64.7	58.4	56.8	65.3	65.5
Heavy Trucks:	65.4	64.8	55.8	57.0	65.4	65.5
Vehicle Noise:	73.6	72.7	69.7	64.8	73.4	73.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	141	304	655	1,411
CNEL:	152	327	704	1,518

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: I-405 NB Off-Ramp to San Leandro

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 56,621 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,671 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.87	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.37	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.32	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.8	70.7	68.9	62.9	71.5	72.1
Medium Trucks:	65.1	64.5	58.1	56.6	65.0	65.3
Heavy Trucks:	65.2	64.6	55.6	56.8	65.2	65.3
Vehicle Noise:	73.3	72.4	69.5	64.6	73.1	73.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	136	293	631	1,358
CNEL:	146	315	678	1,461

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: San Leandro to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 53,104 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,381 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.59	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.65	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.60	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.4	68.6	62.6	71.2	71.8
Medium Trucks:	64.9	64.2	57.8	56.3	64.7	65.0
Heavy Trucks:	64.9	64.3	55.3	56.5	64.9	65.0
Vehicle Noise:	73.1	72.1	69.2	64.3	72.9	73.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	130	280	604	1,302
CNEL:	140	302	650	1,400

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Harvard Avenue to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 53,257 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,394 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.61	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.63	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.59	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.5	70.4	68.7	62.6	71.2	71.8	
Medium Trucks:	64.9	64.2	57.8	56.3	64.8	65.0	
Heavy Trucks:	64.9	64.3	55.3	56.5	64.9	65.0	
Vehicle Noise:	73.1	72.1	69.2	64.3	72.9	73.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	130	281	605	1,304
CNEL:	140	302	651	1,403

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Trabuco Road to Farwell Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 59,765 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,931 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.11	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.13	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.09	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.4	71.3	69.6	63.5	72.1	72.7
Medium Trucks:	65.8	65.1	58.8	57.2	65.7	65.9
Heavy Trucks:	65.8	65.2	56.2	57.4	65.8	65.9
Vehicle Noise:	74.0	73.1	70.1	65.2	73.8	74.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	308	663	1,428
CNEL:	154	331	713	1,537

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 51,477 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,247 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.46	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.78	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.74	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.3	70.3	68.5	62.5	71.1	71.7	
Medium Trucks:	64.7	64.1	57.7	56.2	64.6	64.8	
Heavy Trucks:	64.8	64.2	55.1	56.4	64.7	64.9	
Vehicle Noise:	72.9	72.0	69.0	64.2	72.7	73.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	127	275	592	1,275
CNEL:	137	295	637	1,371

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Main Street to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 50,071 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,131 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.34	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.90	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.86	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.2	70.2	68.4	62.3	71.0	71.6
Medium Trucks:	64.6	63.9	57.6	56.0	64.5	64.7
Heavy Trucks:	64.6	64.1	55.0	56.3	64.6	64.8
Vehicle Noise:	72.8	71.9	68.9	64.0	72.6	73.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	125	270	581	1,252
CNEL:	135	290	625	1,346



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Warner Avenue to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 48,906 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,035 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.24	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.00	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.96	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	70.1	68.3	62.2	70.9	71.5
Medium Trucks:	64.5	63.8	57.5	55.9	64.4	64.6
Heavy Trucks:	64.5	64.0	54.9	56.2	64.5	64.6
Vehicle Noise:	72.7	71.8	68.8	63.9	72.5	73.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	265	572	1,232
CNEL:	133	286	615	1,325

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Walnut Avenue to Scottsdale Dive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 48,151 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,972 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.17	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.07	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.03	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	70.0	68.2	62.2	70.8	71.4
Medium Trucks:	64.4	63.8	57.4	55.9	64.3	64.6
Heavy Trucks:	64.5	63.9	54.9	56.1	64.5	64.6
Vehicle Noise:	72.6	71.7	68.7	63.9	72.4	72.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	122	263	566	1,219
CNEL:	131	283	609	1,312

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,408 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,911 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.10	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.14	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.09	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.0	69.9	68.2	62.1	70.7	71.3
Medium Trucks:	64.4	63.7	57.3	55.8	64.3	64.5
Heavy Trucks:	64.4	63.8	54.8	56.0	64.4	64.5
Vehicle Noise:	72.6	71.6	68.7	63.8	72.4	72.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	260	560	1,207
CNEL:	130	280	603	1,298

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Shady Canyon Drive to Palo Verde

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,657 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,199 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.64	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.59	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.1	67.3	61.3	69.9	70.5
Medium Trucks:	63.5	62.9	56.5	54.9	63.4	63.6
Heavy Trucks:	63.6	63.0	53.9	55.2	63.5	63.7
Vehicle Noise:	71.7	70.8	67.8	63.0	71.5	72.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	170	366	788
CNEL:	85	183	394	848

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Deerfield Avenue to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,374 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,661 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.81	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.43	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.38	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.7	69.6	67.9	61.8	70.4	71.0	
Medium Trucks:	64.1	63.4	57.1	55.5	64.0	64.2	
Heavy Trucks:	64.1	63.5	54.5	55.7	64.1	64.2	
Vehicle Noise:	72.3	71.3	68.4	63.5	72.1	72.5	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	249	536	1,155
CNEL:	124	268	577	1,242

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Sandburg Way to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,140 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,642 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.79	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.45	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.40	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.6	67.8	61.8	70.4	71.0
Medium Trucks:	64.1	63.4	57.0	55.5	63.9	64.2
Heavy Trucks:	64.1	63.5	54.5	55.7	64.1	64.2
Vehicle Noise:	72.3	71.3	68.4	63.5	72.0	72.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	248	534	1,151
CNEL:	124	267	575	1,238

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 42,966 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,545 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.57	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.52	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	69.5	67.7	61.7	70.3	70.9
Medium Trucks:	63.9	63.3	56.9	55.4	63.8	64.1
Heavy Trucks:	64.0	63.4	54.4	55.6	64.0	64.1
Vehicle Noise:	72.1	71.2	68.3	63.4	71.9	72.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	243	525	1,130
CNEL:	122	262	564	1,216

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Palo Verde to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,255 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,001 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.00	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.7	66.9	60.8	69.5	70.1
Medium Trucks:	63.1	62.4	56.1	54.5	63.0	63.2
Heavy Trucks:	63.1	62.6	53.5	54.8	63.1	63.3
Vehicle Noise:	71.3	70.4	67.4	62.5	71.1	71.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	344	740
CNEL:	80	172	370	796



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: University Drive to Sandburg Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,840 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,369 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.45	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.79	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.74	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.3	67.5	61.5	70.1	70.7
Medium Trucks:	63.7	63.1	56.7	55.1	63.6	63.8
Heavy Trucks:	63.8	63.2	54.1	55.4	63.7	63.9
Vehicle Noise:	71.9	71.0	68.0	63.2	71.7	72.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	109	235	507	1,093
CNEL:	118	253	546	1,175

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Farwell Avenue to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 46,881 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,868 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.05	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.19	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.14	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.3	70.3	68.5	62.5	71.1	71.7
Medium Trucks:	64.7	64.1	57.7	56.2	64.6	64.8
Heavy Trucks:	64.8	64.2	55.1	56.4	64.7	64.9
Vehicle Noise:	72.9	72.0	69.0	64.2	72.7	73.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	262	564	1,215
CNEL:	131	282	607	1,307

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Campus Drive to High School

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,865 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,289 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.35	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.89	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.85	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.2	69.2	67.4	61.3	70.0	70.6	
Medium Trucks:	63.6	62.9	56.6	55.0	63.5	63.7	
Heavy Trucks:	63.7	63.1	54.0	55.3	63.6	63.8	
Vehicle Noise:	71.8	70.9	67.9	63.1	71.6	72.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	108	232	499	1,075
CNEL:	116	249	537	1,157

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: High School to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,227 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,236 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.28	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.96	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.92	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.2	69.1	67.3	61.3	69.9	70.5	
Medium Trucks:	63.6	62.9	56.5	55.0	63.4	63.7	
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7	
Vehicle Noise:	71.7	70.8	67.9	63.0	71.5	72.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	229	494	1,064
CNEL:	114	247	531	1,144

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Bryan Avenue to Florence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,221 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,071 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.05	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.19	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.14	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.9	68.9	67.1	61.0	69.7	70.3	
Medium Trucks:	63.3	62.7	56.3	54.7	63.2	63.4	
Heavy Trucks:	63.4	62.8	53.7	55.0	63.3	63.5	
Vehicle Noise:	71.5	70.6	67.6	62.8	71.3	71.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	103	221	477	1,027
CNEL:	110	238	513	1,105

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Portola Parkway to Settlers

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,951 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,811 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.44	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.2	66.5	60.4	69.0	69.6
Medium Trucks:	62.7	62.0	55.6	54.1	62.6	62.8
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.9	69.9	67.0	62.1	70.7	71.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	149	321	692
CNEL:	74	161	346	745

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Florence to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 36,398 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,003 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.95	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.29	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.24	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.8	67.0	61.0	69.6	70.2
Medium Trucks:	63.2	62.6	56.2	54.6	63.1	63.3
Heavy Trucks:	63.3	62.7	53.6	54.9	63.2	63.4
Vehicle Noise:	71.4	70.5	67.5	62.7	71.2	71.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	218	470	1,012
CNEL:	109	235	505	1,089

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Irvine Boulevard to Viewpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,898 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,302 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.80	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.44	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.40	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.9	59.8	68.4	69.0
Medium Trucks:	62.1	61.4	55.0	53.5	62.0	62.2
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	70.3	69.3	66.4	61.5	70.1	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	183	393	847
CNEL:	91	196	423	912



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Viewpark to Meadowood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,143 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,239 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.68	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.56	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.52	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.7	59.7	68.3	68.9
Medium Trucks:	62.0	61.3	54.9	53.4	61.8	62.1
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	70.1	69.2	66.3	61.4	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	179	386	832
CNEL:	90	193	415	895

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Settlers to Furrow

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,730 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 968 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.97	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-20.20	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-24.16	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.6	65.5	63.7	57.7	66.3	66.9	
Medium Trucks:	60.0	59.3	52.9	51.4	59.8	60.1	
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1	
Vehicle Noise:	68.1	67.2	64.3	59.4	67.9	68.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	98	212	456
CNEL:	49	106	228	491

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Meadowood to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,462 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,606 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.77	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-18.00	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.96	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.1	66.1	64.3	58.2	66.9	67.5	
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6	
Heavy Trucks:	60.5	60.0	50.9	52.2	60.5	60.6	
Vehicle Noise:	68.7	67.8	64.8	59.9	68.5	69.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	309	667
CNEL:	72	154	333	717

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Discovery Drive  
 Road Segment: Irvine Center Drive to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,370 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	773 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.75	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.7	60.6	58.9	52.8	61.4	62.1
Medium Trucks:	55.7	55.0	48.6	47.1	55.6	55.8
Heavy Trucks:	57.0	56.4	47.4	48.6	57.0	57.1
Vehicle Noise:	63.7	62.8	59.5	55.0	63.5	64.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	107	231
CNEL:	25	53	115	248

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Discovery Drive  
 Road Segment: Waterworks Way to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,968 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 410 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.31	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-22.55	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-26.51	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	59.0	57.9	56.1	50.1	58.7	59.3	
Medium Trucks:	52.9	52.3	45.9	44.3	52.8	53.0	
Heavy Trucks:	54.2	53.7	44.6	45.9	54.2	54.3	
Vehicle Noise:	61.0	60.1	56.8	52.2	60.8	61.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	15	33	70	152
CNEL:	16	35	75	162

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: East Yale Loop  
 Road Segment: Alton Parkway to Witherspoon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,294 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,097 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.04	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.28	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.23	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.2	62.2	60.4	54.3	63.0	63.6
Medium Trucks:	57.2	56.5	50.2	48.6	57.1	57.3
Heavy Trucks:	58.5	57.9	48.9	50.1	58.5	58.6
Vehicle Noise:	65.2	64.3	61.1	56.5	65.0	65.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	136	292
CNEL:	31	67	145	313

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: East Yale Loop  
 Road Segment: Osborn Street to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,601 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,040 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.51	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.46	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.0	61.9	60.2	54.1	62.7	63.3
Medium Trucks:	57.0	56.3	49.9	48.4	56.8	57.1
Heavy Trucks:	58.3	57.7	48.7	49.9	58.3	58.4
Vehicle Noise:	65.0	64.1	60.8	56.3	64.8	65.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	131	282
CNEL:	30	65	140	302

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: East Yale Loop  
 Road Segment: Yale Avenue to Springbrook South

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,442 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 944 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.69	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.93	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.88	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.6	61.5	59.7	53.7	62.3	62.9
Medium Trucks:	56.5	55.9	49.5	48.0	56.4	56.7
Heavy Trucks:	57.9	57.3	48.2	49.5	57.8	58.0
Vehicle Noise:	64.6	63.7	60.4	55.9	64.4	64.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	57	123	264
CNEL:	28	61	131	283



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: East Yale Loop  
 Road Segment: Springbrook North to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,475 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 699 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.99	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.19	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.3	60.2	58.4	52.4	61.0	61.6
Medium Trucks:	55.2	54.6	48.2	46.7	55.1	55.4
Heavy Trucks:	56.6	56.0	46.9	48.2	56.5	56.7
Vehicle Noise:	63.3	62.4	59.1	54.6	63.1	63.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	100	216
CNEL:	23	50	108	232

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: East Yale Loop  
 Road Segment: Woodspring to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,005 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 578 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.82	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.02	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.4	59.4	57.6	51.6	60.2	60.8
Medium Trucks:	54.4	53.7	47.4	45.8	54.3	54.5
Heavy Trucks:	55.7	55.1	46.1	47.4	55.7	55.8
Vehicle Noise:	62.5	61.6	58.3	53.7	62.3	62.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	41	88	191
CNEL:	20	44	95	204

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: East Yale Loop  
 Road Segment: Barranca Parkway to Eastshore

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,576 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	543 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.33	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.29	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.2	59.1	57.3	51.3	59.9	60.5
Medium Trucks:	54.1	53.5	47.1	45.6	54.0	54.3
Heavy Trucks:	55.5	54.9	45.8	47.1	55.4	55.6
Vehicle Noise:	62.2	61.3	58.0	53.5	62.0	62.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	85	183
CNEL:	20	42	91	196

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Eastwood  
 Road Segment: Bryan Avenue to Monticello

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,185 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 263 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-6.66	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-23.90	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-27.86	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.3	57.2	55.4	49.4	58.0	58.6
Medium Trucks:	52.5	51.8	45.5	43.9	52.4	52.6
Heavy Trucks:	54.3	53.8	44.7	46.0	54.3	54.5
Vehicle Noise:	60.5	59.6	56.2	51.8	60.3	60.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	18	39	85
CNEL:	9	20	42	91

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Eastwood  
 Road Segment: Columbus to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,983 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 164 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-8.72	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-25.96	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-29.92	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	56.2	55.2	53.4	47.3	56.0	56.6	
Medium Trucks:	50.4	49.8	43.4	41.9	50.3	50.6	
Heavy Trucks:	52.3	51.7	42.7	43.9	52.3	52.4	
Vehicle Noise:	58.4	57.6	54.1	49.7	58.3	58.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	13	29	62
CNEL:	7	14	31	66

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: El Camino Real  
 Road Segment: Jamboree Road to Alliance (SR-261 Bridge)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,240 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,587 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.67	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.63	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.8	63.8	62.0	55.9	64.6	65.2	
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9	
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2	
Vehicle Noise:	66.8	65.9	62.7	58.1	66.7	67.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	81	174	374
CNEL:	40	86	186	400

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: El Camino Real North  
 Road Segment: El Camino Real to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,482 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	535 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.16	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.40	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.35	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.1	59.0	57.3	51.2	59.8	60.5
Medium Trucks:	54.1	53.4	47.0	45.5	54.0	54.2
Heavy Trucks:	55.4	54.8	45.8	47.0	55.4	55.5
Vehicle Noise:	62.1	61.2	57.9	53.4	61.9	62.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	84	181
CNEL:	19	42	90	194

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Fairbanks  
 Road Segment: Alton Parkway to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,127 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,496 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 37.138				
Road Grade: 0.0%		Medium Trucks: 37.030				
Left View: -90.0 degrees		Heavy Trucks: 37.139				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.31	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-16.93	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-20.89	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.4	64.6	58.6	67.2	67.8
Medium Trucks:	61.4	60.8	54.4	52.9	61.3	61.6
Heavy Trucks:	62.7	62.2	53.1	54.4	62.7	62.9
Vehicle Noise:	69.5	68.6	65.3	60.7	69.3	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	72	156	336
CNEL:	36	77	167	359



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Fairbanks  
 Road Segment: Irvine Boulevard to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,449 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	780 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.52	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-19.76	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-23.72	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.6	61.8	55.7	64.4	65.0
Medium Trucks:	58.6	57.9	51.6	50.0	58.5	58.7
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0
Vehicle Noise:	66.6	65.7	62.5	57.9	66.4	66.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	101	217
CNEL:	23	50	108	233

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Fairchild Road  
 Road Segment: MacArthur Boulevard to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,131 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 588 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.49	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.45	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.0	60.9	59.1	53.1	61.7	62.3	
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8	
Heavy Trucks:	56.6	56.0	46.9	48.2	56.5	56.7	
Vehicle Noise:	63.8	62.9	59.7	55.1	63.6	64.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	109	234
CNEL:	25	54	117	251

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Gateway Boulevard  
 Road Segment: Alton Parkway to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,949 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,316 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	1.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-16.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-20.19	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.5	59.4	57.7	51.6	60.2	60.9	
Medium Trucks:	55.0	54.3	48.0	46.4	54.9	55.1	
Heavy Trucks:	57.5	56.9	47.9	49.1	57.5	57.6	
Vehicle Noise:	63.0	62.1	58.5	54.3	62.8	63.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	45	97	208
CNEL:	22	48	103	222

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred Project Name: Irvine GP  
 Road Name: Gateway Boulevard Job Number: 15937  
 Road Segment: Spectrum Center Drive (Fortune Drive) to Alton Parkway

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,089 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 997 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.20	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.44	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.40	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.3	58.2	56.5	50.4	59.0	59.6
Medium Trucks:	53.8	53.1	46.8	45.2	53.7	53.9
Heavy Trucks:	56.3	55.7	46.7	47.9	56.3	56.4
Vehicle Noise:	61.8	60.9	57.3	53.1	61.6	62.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	80	173
CNEL:	18	40	86	184

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Gateway Boulevard  
 Road Segment: Irvine Center Drive to Meridian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,154 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 508 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-3.13	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-20.37	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-24.33	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	56.4	55.3	53.5	47.5	56.1	56.7	
Medium Trucks:	50.9	50.2	43.8	42.3	50.8	51.0	
Heavy Trucks:	53.3	52.8	43.7	45.0	53.3	53.5	
Vehicle Noise:	58.9	58.0	54.4	50.2	58.7	59.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	51	110
CNEL:	12	25	55	118

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Great Park Boulevard  
 Road Segment: Sand Canyon to Ridge Valley

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,334 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,658 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.22	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.02	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.97	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.5	71.4	69.7	63.6	72.2	72.8
Medium Trucks:	66.1	65.4	59.0	57.5	65.9	66.2
Heavy Trucks:	66.5	65.9	56.8	58.1	66.4	66.6
Vehicle Noise:	74.2	73.3	70.2	65.4	74.0	74.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	111	238	513	1,105
CNEL:	119	256	551	1,187

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Great Park Boulevard  
 Road Segment: Ridge Valley (O Street) to Bosque (LY Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,427 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,850 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.97	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.93	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.2	65.4	59.3	68.0	68.6
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	69.9	69.0	66.0	61.2	69.7	70.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	278	599
CNEL:	64	139	299	643

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Great Park Boulevard (EB)  
 Road Segment: Bosque to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,353 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 689 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.03	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-21.26	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-25.22	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.8	65.7	64.0	57.9	66.6	67.2	
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5	
Heavy Trucks:	60.8	60.2	51.2	52.4	60.8	60.9	
Vehicle Noise:	68.5	67.6	64.5	59.8	68.3	68.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	62	134	289
CNEL:	31	67	144	311



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Great Park Boulevard (WB)  
 Road Segment: Bosque to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,471 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	616 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		37.138		
Left View:	-90.0 degrees	Medium Trucks:		37.030		
Right View:	90.0 degrees	Heavy Trucks:		37.139		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.51	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-21.75	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-25.70	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.3	63.5	57.4	66.1	66.7
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	68.0	67.1	64.1	59.3	67.8	68.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	125	269
CNEL:	29	62	134	289

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: University Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,728 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,875 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.78	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-16.46	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-20.41	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	68.8	67.0	61.0	69.6	70.2
Medium Trucks:	63.6	63.0	56.6	55.1	63.5	63.8
Heavy Trucks:	64.5	63.9	54.8	56.1	64.5	64.6
Vehicle Noise:	71.7	70.8	67.7	63.0	71.5	72.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	102	220	473
CNEL:	51	109	236	508

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Michelson Drive to Coronado

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,921 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,551 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.12	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.12	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.08	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.3	65.5	59.4	68.1	68.7
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2
Heavy Trucks:	62.9	62.3	53.3	54.6	62.9	63.0
Vehicle Noise:	70.2	69.3	66.1	61.4	70.0	70.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	134	289	622
CNEL:	67	144	310	668

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: San Marino to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,966 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,390 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.83	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.41	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.36	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.0	67.0	65.2	59.2	67.8	68.4	
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9	
Heavy Trucks:	62.6	62.1	53.0	54.3	62.6	62.8	
Vehicle Noise:	69.9	69.0	65.8	61.1	69.7	70.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	128	277	596
CNEL:	64	138	297	639

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Coronado to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,783 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,375 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.80	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.39	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	67.0	65.2	59.1	67.8	68.4
Medium Trucks:	61.8	61.1	54.7	53.2	61.7	61.9
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	69.9	68.9	65.8	61.1	69.7	70.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	128	275	593
CNEL:	64	137	295	637

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: San Carlo to San Marino

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,293 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,334 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.73	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.51	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.46	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.9	66.9	65.1	59.1	67.7	68.3	
Medium Trucks:	61.7	61.0	54.7	53.1	61.6	61.8	
Heavy Trucks:	62.5	62.0	52.9	54.2	62.5	62.7	
Vehicle Noise:	69.8	68.9	65.7	61.0	69.6	70.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	126	272	587
CNEL:	63	136	292	629

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Main Street to San Carlo

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,778 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,292 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.65	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.59	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.54	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.9	66.8	65.0	59.0	67.6	68.2	
Medium Trucks:	61.6	61.0	54.6	53.0	61.5	61.7	
Heavy Trucks:	62.5	61.9	52.8	54.1	62.4	62.6	
Vehicle Noise:	69.7	68.8	65.6	61.0	69.5	70.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	269	580
CNEL:	62	134	289	622

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Alton Parkway to San Leon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,733 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.44	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.76	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.6	63.8	57.8	66.4	67.0
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5
Heavy Trucks:	61.2	60.7	51.6	52.9	61.2	61.4
Vehicle Noise:	68.5	67.6	64.4	59.8	68.3	68.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	104	223	481
CNEL:	52	111	239	516



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: San Juan to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,733 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.44	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.76	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.7	65.6	63.8	57.8	66.4	67.0	
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5	
Heavy Trucks:	61.2	60.7	51.6	52.9	61.2	61.4	
Vehicle Noise:	68.5	67.6	64.4	59.8	68.3	68.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	104	223	481
CNEL:	52	111	239	516

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: San Leon to San Juan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,160 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,663 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.94	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.4	63.6	57.6	66.2	66.8
Medium Trucks:	60.2	59.6	53.2	51.7	60.1	60.3
Heavy Trucks:	61.1	60.5	51.4	52.7	61.1	61.2
Vehicle Noise:	68.3	67.4	64.3	59.6	68.1	68.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	101	217	468
CNEL:	50	108	233	502

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,465 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,276 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.89	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.09	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.3	64.3	62.5	56.4	65.1	65.7
Medium Trucks:	59.1	58.4	52.0	50.5	59.0	59.2
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0
Vehicle Noise:	67.2	66.2	63.1	58.4	67.0	67.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	182	392
CNEL:	42	91	195	421

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Deerfield Avenue to Poplar Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,254 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.97	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.21	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.16	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.2	62.4	56.4	65.0	65.6
Medium Trucks:	59.0	58.3	52.0	50.4	58.9	59.1
Heavy Trucks:	59.8	59.3	50.2	51.5	59.8	60.0
Vehicle Noise:	67.1	66.2	63.0	58.3	66.9	67.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	180	388
CNEL:	42	90	193	416

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,010 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,403 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.48	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.67	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.7	62.9	56.9	65.5	66.1
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6
Heavy Trucks:	60.3	59.7	50.7	52.0	60.3	60.4
Vehicle Noise:	67.6	66.7	63.5	58.8	67.4	67.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	90	194	418
CNEL:	45	97	208	448

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Bridge Road to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,880 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,393 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.51	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.75	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.71	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.6	62.9	56.8	65.4	66.0
Medium Trucks:	59.5	58.8	52.4	50.9	59.3	59.6
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	67.5	66.6	63.5	58.8	67.3	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	90	193	416
CNEL:	45	96	207	446

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Paseo Westpark to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,982 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,401 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.68	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.7	62.9	56.8	65.5	66.1
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6
Heavy Trucks:	60.3	59.7	50.7	52.0	60.3	60.4
Vehicle Noise:	67.6	66.7	63.5	58.8	67.4	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	90	194	417
CNEL:	45	96	208	448

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Poplar Street to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,278 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,095 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 42.814				
Road Grade: 0.0%		Medium Trucks: 42.720				
Left View: -90.0 degrees		Heavy Trucks: 42.814				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.56	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	79.45	-18.79	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	84.25	-22.75	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.5	63.8	57.7	66.4	67.0
Medium Trucks:	60.4	59.7	53.3	51.8	60.3	60.5
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	68.4	67.5	64.4	59.7	68.3	68.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	178	383
CNEL:	41	88	191	410



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: California Avenue to Berkeley Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,831 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,224 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.07	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.31	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.27	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.1	64.1	62.3	56.3	64.9	65.5	
Medium Trucks:	58.9	58.2	51.9	50.3	58.8	59.0	
Heavy Trucks:	59.7	59.2	50.1	51.4	59.7	59.8	
Vehicle Noise:	67.0	66.1	62.9	58.2	66.8	67.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	177	381
CNEL:	41	88	190	409

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Culver Drive to California Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,731 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,215 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.30	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.1	64.0	62.3	56.2	64.8	65.5	
Medium Trucks:	58.9	58.2	51.8	50.3	58.8	59.0	
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8	
Vehicle Noise:	66.9	66.0	62.9	58.2	66.8	67.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	176	380
CNEL:	41	88	189	407

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Berkeley to Bridge Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,456 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,193 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.42	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.38	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.0	64.0	62.2	56.1	64.8	65.4
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9
Heavy Trucks:	59.6	59.0	50.0	51.3	59.6	59.7
Vehicle Noise:	66.9	66.0	62.8	58.1	66.7	67.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	81	174	375
CNEL:	40	87	187	402

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Warner Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,282 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,096 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.55	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.79	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.75	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.7	63.6	61.8	55.8	64.4	65.0	
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5	
Heavy Trucks:	59.3	58.7	49.6	50.9	59.2	59.4	
Vehicle Noise:	66.5	65.6	62.4	57.8	66.3	66.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	164	354
CNEL:	38	82	176	380

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Hicks Canyon Drive  
 Road Segment: Delamesa to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,206 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 182 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-8.26	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	75.75	-25.50	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	81.57	-29.45	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.8	54.7	52.9	46.9	55.5	56.1
Medium Trucks:	50.0	49.3	42.9	41.4	49.9	50.1
Heavy Trucks:	51.8	51.2	42.2	43.5	51.8	51.9
Vehicle Noise:	58.0	57.1	53.7	49.3	57.8	58.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	36	77
CNEL:	8	18	38	82

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Hornet (5th St)  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,383 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	279 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-4.94	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-22.18	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-26.13	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.4	53.4	51.6	45.5	54.2	54.8
Medium Trucks:	49.3	48.6	42.2	40.7	49.2	49.4
Heavy Trucks:	52.5	51.9	42.9	44.1	52.5	52.6
Vehicle Noise:	57.3	56.5	52.6	48.6	57.2	57.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	11	24	52
CNEL:	6	12	26	55

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Hubble  
 Road Segment: Irvine Center Drive to Bunsen

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,333 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 192 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-6.55	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-23.79	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-27.75	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	52.8	51.8	50.0	43.9	52.6	53.2	
Medium Trucks:	47.7	47.0	40.6	39.1	47.5	47.8	
Heavy Trucks:	50.9	50.3	41.2	42.5	50.8	51.0	
Vehicle Noise:	55.7	54.9	51.0	47.0	55.5	55.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	19	41
CNEL:	4	9	20	43

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred Project Name: Irvine GP  
 Road Name: Irvine Boulevard Job Number: 15937  
 Road Segment: SR-133 NB Off- Ramp to Ridge Valley (O Street)

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 42,105 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,474 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.59	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.65	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.61	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	69.4	67.6	61.6	70.2	70.8
Medium Trucks:	63.9	63.2	56.8	55.3	63.7	64.0
Heavy Trucks:	63.9	63.3	54.3	55.5	63.9	64.0
Vehicle Noise:	72.0	71.1	68.2	63.3	71.8	72.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	111	240	518	1,115
CNEL:	120	258	557	1,200



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: SR-133 SB Off-Ramp to SR-133 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 41,055 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,387 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.48	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.76	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.72	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	69.3	67.5	61.5	70.1	70.7
Medium Trucks:	63.7	63.1	56.7	55.2	63.6	63.9
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9
Vehicle Noise:	71.9	71.0	68.1	63.2	71.7	72.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	236	509	1,096
CNEL:	118	254	547	1,179

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Sand Canyon to SR-133 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,675 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,768 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.94	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.30	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.26	-2.29	-1.20	-5.23	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.2	70.2	68.4	62.3	71.0	71.6	
Medium Trucks:	64.6	63.9	57.6	56.0	64.5	64.7	
Heavy Trucks:	64.7	64.1	55.0	56.3	64.6	64.8	
Vehicle Noise:	72.8	71.9	68.9	64.1	72.6	73.1	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	119	257	554	1,194
CNEL:	128	277	596	1,285

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Merit to Alton

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,805 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,954 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.88	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.36	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.31	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.8	68.7	66.9	60.9	69.5	70.1	
Medium Trucks:	63.2	62.5	56.1	54.6	63.0	63.3	
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3	
Vehicle Noise:	71.3	70.4	67.5	62.6	71.1	71.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	465	1,001
CNEL:	108	232	500	1,077

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Journey to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 35,506 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,929 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.85	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.39	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.35	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.7	66.9	60.8	69.5	70.1
Medium Trucks:	63.1	62.4	56.1	54.5	63.0	63.2
Heavy Trucks:	63.1	62.6	53.5	54.8	63.1	63.3
Vehicle Noise:	71.3	70.4	67.4	62.6	71.1	71.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	214	462	995
CNEL:	107	231	497	1,071

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Ridge Valley (O Street) to Bosque (LY Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,235 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,659 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.43	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.81	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.77	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.2	66.5	60.4	69.0	69.7
Medium Trucks:	62.7	62.0	55.7	54.1	62.6	62.8
Heavy Trucks:	62.7	62.1	53.1	54.4	62.7	62.8
Vehicle Noise:	70.9	70.0	67.0	62.1	70.7	71.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	201	433	933
CNEL:	100	216	466	1,004

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Pusan Way to Chinon (B Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,080 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,564 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.27	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.97	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.93	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.2	68.1	66.3	60.3	68.9	69.5	
Medium Trucks:	62.5	61.9	55.5	54.0	62.4	62.7	
Heavy Trucks:	62.6	62.0	52.9	54.2	62.6	62.7	
Vehicle Noise:	70.7	69.8	66.8	62.0	70.5	71.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	196	423	911
CNEL:	98	211	455	980

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Palo Lado to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,566 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,604 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.33	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.90	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.86	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.2	66.4	60.3	69.0	69.6
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	62.6	62.1	53.0	54.3	62.6	62.7
Vehicle Noise:	70.8	69.9	66.9	62.0	70.6	71.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	427	920
CNEL:	99	213	459	990

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Culver Drive to Palo Lado

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,307 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,583 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.30	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.94	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.90	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.2	68.1	66.4	60.3	68.9	69.5	
Medium Trucks:	62.6	61.9	55.5	54.0	62.5	62.7	
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7	
Vehicle Noise:	70.8	69.8	66.9	62.0	70.6	71.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	197	425	915
CNEL:	98	212	457	985



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: SR-261 SB Off-Ramp to SR-261 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,683 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,531 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.03	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.98	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.3	60.2	68.8	69.4
Medium Trucks:	62.5	61.8	55.4	53.9	62.4	62.6
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	70.7	69.7	66.8	61.9	70.5	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	195	419	903
CNEL:	97	209	451	971

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Old Myford Road to Market Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 30,767 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,538 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.22	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.02	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.97	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.3	60.2	68.8	69.4
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6
Heavy Trucks:	62.5	61.9	52.9	54.2	62.5	62.6
Vehicle Noise:	70.7	69.8	66.8	61.9	70.5	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	195	420	905
CNEL:	97	210	452	973

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Bosque (LY Street) to Modjeska

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,546 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,520 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.19	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.05	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.00	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.2	60.2	68.8	69.4
Medium Trucks:	62.5	61.8	55.4	53.9	62.3	62.6
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	70.7	69.7	66.8	61.9	70.5	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	194	418	900
CNEL:	97	209	450	968

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Jamboree Road to Old Myford Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,131 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,486 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.13	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.11	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.06	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.0	68.0	66.2	60.1	68.8	69.4	
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5	
Heavy Trucks:	62.4	61.9	52.8	54.1	62.4	62.5	
Vehicle Noise:	70.6	69.7	66.7	61.8	70.4	70.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	192	414	892
CNEL:	96	207	445	960

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Market Place to SR-261 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,014 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,476 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.12	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.08	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	67.9	66.2	60.1	68.7	69.3
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	70.6	69.7	66.7	61.8	70.4	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	192	413	890
CNEL:	96	206	444	957

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Jeffrey Road to Groveland

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,333 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,420 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.02	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.22	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.18	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.8	66.1	60.0	68.6	69.2
Medium Trucks:	62.3	61.6	55.3	53.7	62.2	62.4
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.5	69.6	66.6	61.7	70.3	70.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	189	407	876
CNEL:	94	203	438	943

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Bake Parkway to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,433 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,346 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.88	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.36	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.31	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.2	61.5	55.1	53.6	62.0	62.3
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	70.3	69.4	66.5	61.6	70.1	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	398	858
CNEL:	92	199	429	923

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred Project Name: Irvine GP  
 Road Name: Irvine Boulevard Job Number: 15937  
 Road Segment: Independence Way (The Groves)/The Groves to Jeffrey Road

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b> Average Daily Traffic (Adt): 28,495 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,351 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	<b>Site Conditions (Hard = 10, Soft = 15)</b> Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b> Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<b>Vehicle Mix</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table> <b>Noise Source Elevations (in feet)</b> Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Lane Equivalent Distance (in feet)</b> Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.89	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.35	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.30	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.2	61.5	55.1	53.6	62.0	62.3
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	70.4	69.4	66.5	61.6	70.1	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	399	859
CNEL:	92	199	429	925



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Chinon (B Street) to Merit

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,405 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,261 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.72	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.52	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.47	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	68.9
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.0	61.4	52.4	53.7	62.0	62.1
Vehicle Noise:	70.2	69.3	66.3	61.4	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	180	389	837
CNEL:	90	194	418	901

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: SR-261 NB Off-Ramp to Central Park

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,539 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,272 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.74	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.50	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.45	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.6	65.8	59.7	68.4	69.0
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.0	61.5	52.4	53.7	62.0	62.2
Vehicle Noise:	70.2	69.3	66.3	61.4	70.0	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	390	840
CNEL:	90	195	420	904

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred Project Name: Irvine GP  
 Road Name: Irvine Boulevard Job Number: 15937  
 Road Segment: Pueblo Norte to Independence Way (The Groves)/ Parkwood

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,740 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,206 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.61	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.62	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.58	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.7	59.6	68.2	68.8
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	70.1	69.1	66.2	61.3	69.9	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	382	824
CNEL:	89	191	411	886

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Yale Avenue to Pueblo Norte

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,562 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,191 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.58	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.65	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.61	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.4	65.6	59.6	68.2	68.8	
Medium Trucks:	61.9	61.2	54.8	53.3	61.7	62.0	
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0	
Vehicle Noise:	70.0	69.1	66.2	61.3	69.8	70.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	381	820
CNEL:	88	190	410	882

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Modjeska to Pusan Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,040 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,148 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.50	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.74	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.70	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	61.8	61.1	54.7	53.2	61.7	61.9
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	70.0	69.0	66.1	61.2	69.8	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	376	809
CNEL:	87	188	404	871

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Central Park Avenue to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,022 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,982 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.05	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	67.0	65.2	59.1	67.8	68.4
Medium Trucks:	61.4	60.7	54.4	52.8	61.3	61.5
Heavy Trucks:	61.5	60.9	51.8	53.1	61.4	61.6
Vehicle Noise:	69.6	68.7	65.7	60.9	69.4	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	356	767
CNEL:	83	178	383	825

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Parker to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,245 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,835 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.19	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.42	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.38	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.6	64.9	58.8	67.4	68.0
Medium Trucks:	61.1	60.4	54.1	52.5	61.0	61.2
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2
Vehicle Noise:	69.3	68.3	65.4	60.5	69.1	69.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	338	729
CNEL:	78	169	364	784

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Alton Parkway to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,955 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,481 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-18.35	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-22.31	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.2	59.5	53.1	51.6	60.0	60.3
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3
Vehicle Noise:	68.3	67.4	64.5	59.6	68.1	68.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	293	632
CNEL:	68	146	315	680



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred Project Name: Irvine GP  
 Road Name: Irvine Center Drive Job Number: 15937  
 Road Segment: Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 51,614 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,258 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>  <b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<b>Vehicle Mix</b>																				
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	VehicleType	Day	Evening	Night	Daily																
	Autos:	77.5%	12.9%	9.6%	97.42%																
	Medium Trucks:	84.8%	4.9%	10.3%	1.84%																
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Noise Source Elevations (in feet)</b>																					
Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float:right">Grade Adjustment: 0.0</span>																					
<b>Lane Equivalent Distance (in feet)</b>																					
Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.88	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.35	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.31	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	69.5	67.8	61.7	70.3	70.9
Medium Trucks:	64.2	63.5	57.1	55.6	64.0	64.3
Heavy Trucks:	64.6	64.0	55.0	56.2	64.6	64.7
Vehicle Noise:	72.3	71.4	68.3	63.5	72.1	72.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	238	512	1,104
CNEL:	119	256	550	1,186

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Orange Tree to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 47,747 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,939 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
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FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.55	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.69	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.65	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.9	68.8	67.0	61.0	69.6	70.2	
Medium Trucks:	63.4	62.7	56.4	54.8	63.3	63.5	
Heavy Trucks:	63.8	63.2	54.2	55.5	63.8	63.9	
Vehicle Noise:	71.5	70.6	67.6	62.8	71.3	71.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	103	223	480	1,033
CNEL:	111	239	515	1,110

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: I-405 SB Off-Ramp to Research

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 46,681 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,851 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.45	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.79	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.75	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	69.1	67.3	61.3	69.9	70.5
Medium Trucks:	63.7	63.1	56.7	55.1	63.6	63.8
Heavy Trucks:	64.1	63.6	54.5	55.8	64.1	64.3
Vehicle Noise:	71.9	70.9	67.9	63.1	71.7	72.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	103	222	479	1,032
CNEL:	111	239	515	1,109

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Irvine Valley College to Orange Tree

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,642 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,848 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.44	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.79	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.75	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	66.9	60.9	69.5	70.1
Medium Trucks:	63.3	62.6	56.3	54.7	63.2	63.4
Heavy Trucks:	63.7	63.1	54.1	55.4	63.7	63.8
Vehicle Noise:	71.4	70.5	67.5	62.7	71.2	71.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	102	219	472	1,017
CNEL:	109	235	507	1,093

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Fontaine Avenue to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,165 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,644 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.03	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.99	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.5	68.4	66.7	60.6	69.3	69.9	
Medium Trucks:	63.1	62.4	56.0	54.5	63.0	63.2	
Heavy Trucks:	63.5	62.9	53.9	55.1	63.5	63.6	
Vehicle Noise:	71.2	70.3	67.2	62.5	71.0	71.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	211	455	981
CNEL:	105	227	489	1,054

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Culver Drive to Deerwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 43,788 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,612 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.17	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.07	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.02	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.5	68.4	66.6	60.6	69.2	69.8	
Medium Trucks:	63.0	62.4	56.0	54.5	62.9	63.2	
Heavy Trucks:	63.5	62.9	53.8	55.1	63.4	63.6	
Vehicle Noise:	71.2	70.3	67.2	62.4	71.0	71.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	210	453	975
CNEL:	105	226	486	1,048

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Deerwood to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 43,331 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,575 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.11	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.07	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.4	68.4	66.6	60.5	69.2	69.8
Medium Trucks:	63.0	62.3	56.0	54.4	62.9	63.1
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	71.1	70.2	67.2	62.4	70.9	71.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	209	450	968
CNEL:	104	224	483	1,041

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Yale Avenue to Fontaine Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 43,453 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,585 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.14	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.10	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.06	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.4	68.4	66.6	60.6	69.2	69.8	
Medium Trucks:	63.0	62.3	56.0	54.4	62.9	63.1	
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5	
Vehicle Noise:	71.1	70.2	67.2	62.4	70.9	71.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	209	450	970
CNEL:	104	225	484	1,042



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Jeffrey Road to Irvine Valley College

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 42,819 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,533 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.07	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.17	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.12	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.4	68.3	66.5	60.5	69.1	69.7
Medium Trucks:	62.9	62.3	55.9	54.4	62.8	63.1
Heavy Trucks:	63.4	62.8	53.7	55.0	63.3	63.5
Vehicle Noise:	71.1	70.2	67.1	62.3	70.9	71.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	96	207	446	961
CNEL:	103	222	479	1,032

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Alton Parkway to Spectrum

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,703 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,276 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.74	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.49	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.45	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.2	60.2	68.8	69.4
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	63.0	62.4	53.4	54.7	63.0	63.1
Vehicle Noise:	70.7	69.8	66.8	62.0	70.5	71.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	197	424	914
CNEL:	98	211	456	982

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Spectrum to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,224 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,236 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.69	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.55	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.50	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	67.9	66.2	60.1	68.7	69.3
Medium Trucks:	62.6	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	70.7	69.8	66.7	61.9	70.5	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	195	421	906
CNEL:	97	210	452	974

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Hearthstone to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 38,396 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,168 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.60	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.64	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.60	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.8	66.1	60.0	68.6	69.2
Medium Trucks:	62.5	61.8	55.4	53.9	62.4	62.6
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0
Vehicle Noise:	70.6	69.7	66.6	61.9	70.4	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	192	415	893
CNEL:	96	207	446	960

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Charter to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 36,432 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,006 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.37	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.87	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.82	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.2	61.6	55.2	53.7	62.1	62.4
Heavy Trucks:	62.7	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	70.4	69.5	66.4	61.6	70.2	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	186	400	863
CNEL:	93	200	430	927

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Jamboree Road to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,050 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,892 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.20	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.04	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.99	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.4	65.7	59.6	68.2	68.9	
Medium Trucks:	62.1	61.4	55.0	53.5	62.0	62.2	
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6	
Vehicle Noise:	70.2	69.3	66.2	61.5	70.0	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	390	841
CNEL:	90	195	419	903

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Pacifica to Entertainment (Enterprise/Fortune)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 35,060 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,892 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.20	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.03	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.99	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.7	59.6	68.2	68.9
Medium Trucks:	62.1	61.4	55.0	53.5	62.0	62.2
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	70.2	69.3	66.2	61.5	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	390	841
CNEL:	90	195	419	904

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,045 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,891 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.20	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.04	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.99	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.4	65.7	59.6	68.2	68.9	
Medium Trucks:	62.1	61.4	55.0	53.5	62.0	62.2	
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6	
Vehicle Noise:	70.2	69.3	66.2	61.5	70.0	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	390	841
CNEL:	90	195	419	903



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Harvard Avenue to Hearthstone

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,966 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,720 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.94	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.30	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.26	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.2	65.4	59.4	68.0	68.6
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	62.2	61.6	52.6	53.9	62.2	62.3
Vehicle Noise:	69.9	69.0	66.0	61.2	69.7	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	375	807
CNEL:	87	187	403	867

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Research to Hubble

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,654 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,446 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.48	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.76	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.72	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	65.0	58.9	67.5	68.1
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	61.8	61.2	52.1	53.4	61.7	61.9
Vehicle Noise:	69.5	68.6	65.5	60.7	69.3	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	349	752
CNEL:	81	174	375	808

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Barranca Parkway to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,054 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,479 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.53	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.70	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.66	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.8	65.0	59.0	67.6	68.2
Medium Trucks:	61.4	60.7	54.4	52.8	61.3	61.5
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	69.5	68.6	65.6	60.8	69.3	69.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	163	352	759
CNEL:	82	176	378	815

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Bake Parkway to Muller

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,430 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,428 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.44	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.79	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.75	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	64.9	58.9	67.5	68.1
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4
Heavy Trucks:	61.7	61.1	52.1	53.4	61.7	61.8
Vehicle Noise:	69.4	68.5	65.5	60.7	69.2	69.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	347	748
CNEL:	80	173	373	804

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Discovery to Charter

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,216 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,493 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.56	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.68	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.64	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.8	65.0	59.0	67.6	68.2
Medium Trucks:	61.4	60.8	54.4	52.8	61.3	61.5
Heavy Trucks:	61.8	61.3	52.2	53.5	61.8	62.0
Vehicle Noise:	69.6	68.6	65.6	60.8	69.4	69.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	164	354	762
CNEL:	82	176	380	818

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Hubble to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,897 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,301 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.03	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.98	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.5	64.7	58.6	67.3	67.9
Medium Trucks:	61.1	60.4	54.0	52.5	61.0	61.2
Heavy Trucks:	61.5	60.9	51.9	53.1	61.5	61.6
Vehicle Noise:	69.2	68.3	65.3	60.5	69.0	69.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	72	156	335	722
CNEL:	78	167	360	776

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Muller to Tesla

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,594 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,194 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.00	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.23	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.19	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.2	64.5	58.4	67.0	67.7
Medium Trucks:	60.9	60.2	53.8	52.3	60.8	61.0
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4
Vehicle Noise:	69.0	68.1	65.0	60.3	68.8	69.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	151	325	699
CNEL:	75	162	349	751

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Sand Canyon Avenue to Odyssey

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,885 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,136 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.89	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.35	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.31	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.2	66.1	64.4	58.3	66.9	67.5	
Medium Trucks:	60.8	60.1	53.7	52.2	60.6	60.9	
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3	
Vehicle Noise:	68.9	68.0	64.9	60.1	68.7	69.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	148	319	687
CNEL:	74	159	343	738



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Tesla to Scientific Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,586 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,028 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.66	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.58	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.53	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.0	65.9	64.1	58.1	66.7	67.3	
Medium Trucks:	60.5	59.9	53.5	52.0	60.4	60.6	
Heavy Trucks:	60.9	60.4	51.3	52.6	60.9	61.1	
Vehicle Noise:	68.7	67.7	64.7	59.9	68.5	68.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	143	308	664
CNEL:	71	154	331	713

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Scientific Way to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,463 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,936 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.46	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.78	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.73	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.8	65.7	63.9	57.9	66.5	67.1	
Medium Trucks:	60.3	59.7	53.3	51.8	60.2	60.4	
Heavy Trucks:	60.7	60.2	51.1	52.4	60.7	60.9	
Vehicle Noise:	68.5	67.5	64.5	59.7	68.3	68.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	139	299	643
CNEL:	69	149	321	691

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Gateway Boulevard to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,763 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,878 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.33	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.91	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.87	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.6	65.6	63.8	57.8	66.4	67.0	
Medium Trucks:	60.2	59.5	53.2	51.6	60.1	60.3	
Heavy Trucks:	60.6	60.0	51.0	52.2	60.6	60.7	
Vehicle Noise:	68.3	67.4	64.4	59.6	68.1	68.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	293	631
CNEL:	68	146	314	677

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Laguna Canyon Road to Discovery

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,810 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,882 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.34	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.90	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.86	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.6	65.6	63.8	57.8	66.4	67.0	
Medium Trucks:	60.2	59.5	53.2	51.6	60.1	60.3	
Heavy Trucks:	60.6	60.0	51.0	52.3	60.6	60.7	
Vehicle Noise:	68.3	67.4	64.4	59.6	68.1	68.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	293	631
CNEL:	68	146	315	678

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Odyssey to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,449 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,852 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.27	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.97	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.93	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.6	65.5	63.7	57.7	66.3	66.9	
Medium Trucks:	60.1	59.5	53.1	51.6	60.0	60.3	
Heavy Trucks:	60.6	60.0	50.9	52.2	60.5	60.7	
Vehicle Noise:	68.3	67.4	64.3	59.5	68.1	68.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	135	290	625
CNEL:	67	145	312	671

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive (Edinger)  
 Road Segment: Redhill Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 38,705 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,193 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.63	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.60	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.56	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.9	66.1	60.1	68.7	69.3
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0
Vehicle Noise:	70.6	69.7	66.7	61.9	70.4	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	194	417	898
CNEL:	97	208	448	965

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: I-5 SB Off-Ramp to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 69,825 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,761 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.78	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-12.46	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-16.41	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.7	71.6	69.8	63.8	72.4	73.0
Medium Trucks:	66.1	65.4	59.0	57.5	65.9	66.2
Heavy Trucks:	66.1	65.5	56.5	57.7	66.1	66.2
Vehicle Noise:	74.2	73.3	70.4	65.5	74.0	74.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	156	337	725	1,562
CNEL:	168	362	780	1,681

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 80,926 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 6,676 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.42	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-11.82	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-15.77	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.7	72.7	70.9	64.8	73.5	74.1
Medium Trucks:	67.1	66.4	60.1	58.5	67.0	67.2
Heavy Trucks:	67.1	66.6	57.5	58.8	67.1	67.2
Vehicle Noise:	75.3	74.4	71.4	66.5	75.1	75.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	175	377	811	1,748
CNEL:	188	405	873	1,881



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Walnut Avenue to Michelle Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 60,211 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,967 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.14	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.10	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.06	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.0	71.0	69.2	63.1	71.8	72.4
Medium Trucks:	65.4	64.7	58.4	56.8	65.3	65.5
Heavy Trucks:	65.4	64.9	55.8	57.1	65.4	65.6
Vehicle Noise:	73.6	72.7	69.7	64.8	73.4	73.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	142	305	657	1,415
CNEL:	152	328	707	1,523

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: I-405 NB Off-Ramp to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 81,354 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 6,712 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.45	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-11.79	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-15.75	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	75.1	74.1	72.3	66.2	74.9	75.5
Medium Trucks:	68.5	67.8	61.5	59.9	68.4	68.6
Heavy Trucks:	68.5	68.0	58.9	60.2	68.5	68.6
Vehicle Noise:	76.7	75.8	72.8	67.9	76.5	77.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	271	584	1,258	2,709
CNEL:	291	628	1,353	2,915

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Michelle Drive to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 56,379 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,651 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.85	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.39	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.34	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.7	70.7	68.9	62.9	71.5	72.1
Medium Trucks:	65.1	64.5	58.1	56.5	65.0	65.2
Heavy Trucks:	65.2	64.6	55.5	56.8	65.1	65.3
Vehicle Noise:	73.3	72.4	69.4	64.6	73.1	73.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	135	292	629	1,355
CNEL:	146	314	676	1,457

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Main Street to Kelvin Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 70,210 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,792 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 56.593				
Road Grade: 0.0%	Medium Trucks: 56.522				
Left View: -90.0 degrees	Heavy Trucks: 56.593				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.81	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.43	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.39	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.5	73.4	71.6	65.6	74.2	74.8
Medium Trucks:	67.9	67.2	60.8	59.3	67.8	68.0
Heavy Trucks:	67.9	67.3	58.3	59.5	67.9	68.0
Vehicle Noise:	76.1	75.1	72.2	67.3	75.9	76.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	246	529	1,140	2,456
CNEL:	264	569	1,226	2,642

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 86,971 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 7,175 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 130 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 88.792 Medium Trucks: 88.747 Heavy Trucks: 88.792																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.74	-3.84	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-11.50	-3.84	-1.20	-4.96	0.000	0.000
Heavy Trucks:	86.40	-15.46	-3.84	-1.20	-5.14	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.5	71.4	69.6	63.6	72.2	72.8
Medium Trucks:	65.9	65.2	58.8	57.3	65.7	66.0
Heavy Trucks:	65.9	65.3	56.3	57.5	65.9	66.0
Vehicle Noise:	74.1	73.1	70.2	65.3	73.8	74.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	199	428	922	1,986
CNEL:	214	460	992	2,136

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Kelvin Avenue to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 65,064 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,368 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.48	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.76	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.72	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.1	73.1	71.3	65.3	73.9	74.5
Medium Trucks:	67.5	66.9	60.5	59.0	67.4	67.7
Heavy Trucks:	67.6	67.0	57.9	59.2	67.5	67.7
Vehicle Noise:	75.7	74.8	71.8	67.0	75.5	76.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	233	503	1,084	2,334
CNEL:	251	541	1,166	2,511

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 64,320 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,306 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.43	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.81	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.77	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.1	73.0	71.3	65.2	73.8	74.4
Medium Trucks:	67.5	66.8	60.5	58.9	67.4	67.6
Heavy Trucks:	67.5	66.9	57.9	59.1	67.5	67.6
Vehicle Noise:	75.7	74.7	71.8	66.9	75.5	75.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	232	499	1,075	2,317
CNEL:	249	537	1,157	2,492

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Birch Street to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 48,363 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,990 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.19	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.05	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.01	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	70.0	68.2	62.2	70.8	71.4
Medium Trucks:	64.5	63.8	57.4	55.9	64.3	64.6
Heavy Trucks:	64.5	63.9	54.9	56.1	64.5	64.6
Vehicle Noise:	72.6	71.7	68.8	63.9	72.4	72.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	122	263	568	1,223
CNEL:	132	283	611	1,316



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Dupont Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 54,185 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,470 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.68	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.56	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.51	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.0	70.9	69.1	63.1	71.7	72.3	
Medium Trucks:	65.4	64.7	58.3	56.8	65.2	65.5	
Heavy Trucks:	65.4	64.8	55.8	57.0	65.4	65.5	
Vehicle Noise:	73.6	72.6	69.7	64.8	73.4	73.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	134	288	621	1,338
CNEL:	144	310	668	1,439

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Alton Parkway to Beckman

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 58,506 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,827 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 56.593				
Road Grade: 0.0%	Medium Trucks: 56.522				
Left View: -90.0 degrees	Heavy Trucks: 56.593				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.01	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.22	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.18	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.7	72.6	70.9	64.8	73.4	74.0
Medium Trucks:	67.1	66.4	60.0	58.5	67.0	67.2
Heavy Trucks:	67.1	66.5	57.5	58.7	67.1	67.2
Vehicle Noise:	75.3	74.3	71.4	66.5	75.1	75.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	217	469	1,009	2,175
CNEL:	234	504	1,086	2,340

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Fairchild Road to Birch Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 49,498 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,084 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.29	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.95	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.91	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.6	70.5	68.8	62.7	71.3	71.9
Medium Trucks:	65.0	64.3	57.9	56.4	64.9	65.1
Heavy Trucks:	65.0	64.4	55.4	56.6	65.0	65.1
Vehicle Noise:	73.2	72.2	69.3	64.4	73.0	73.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	126	271	585	1,260
CNEL:	136	292	629	1,355

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Beckman to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 54,535 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,499 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.71	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.53	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.49	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.4	72.3	70.5	64.5	73.1	73.7
Medium Trucks:	66.8	66.1	59.7	58.2	66.7	66.9
Heavy Trucks:	66.8	66.2	57.2	58.4	66.8	66.9
Vehicle Noise:	75.0	74.0	71.1	66.2	74.8	75.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	208	447	963	2,075
CNEL:	223	481	1,036	2,233

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: I-5 NB Off-Ramp to El Camino Real

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 52,710 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,349 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.56	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.68	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.63	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.2	72.2	70.4	64.3	73.0	73.6	
Medium Trucks:	66.6	66.0	59.6	58.0	66.5	66.7	
Heavy Trucks:	66.7	66.1	57.0	58.3	66.6	66.8	
Vehicle Noise:	74.8	73.9	70.9	66.1	74.6	75.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	203	437	942	2,029
CNEL:	218	470	1,013	2,182

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Campus Drive to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,590 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,761 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.93	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.31	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.26	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.2	70.2	68.4	62.3	71.0	71.6
Medium Trucks:	64.6	63.9	57.6	56.0	64.5	64.7
Heavy Trucks:	64.6	64.1	55.0	56.3	64.6	64.8
Vehicle Noise:	72.8	71.9	68.9	64.0	72.6	73.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	119	257	554	1,192
CNEL:	128	276	595	1,283

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: El Camino Real to West Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 51,446 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,244 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.46	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.78	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.74	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.1	72.1	70.3	64.2	72.9	73.5
Medium Trucks:	66.5	65.8	59.5	57.9	66.4	66.6
Heavy Trucks:	66.5	66.0	56.9	58.2	66.5	66.7
Vehicle Noise:	74.7	73.8	70.8	65.9	74.5	75.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	200	430	927	1,996
CNEL:	215	463	997	2,147

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: West Drive to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 51,319 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,234 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.44	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.79	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.75	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.1	72.1	70.3	64.2	72.9	73.5
Medium Trucks:	66.5	65.8	59.5	57.9	66.4	66.6
Heavy Trucks:	66.5	66.0	56.9	58.2	66.5	66.6
Vehicle Noise:	74.7	73.8	70.8	65.9	74.5	75.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	199	429	925	1,993
CNEL:	214	462	995	2,144



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Bryan Avenue to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,722 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,937 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.13	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-14.11	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-18.06	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.8	71.7	70.0	63.9	72.5	73.1
Medium Trucks:	66.2	65.5	59.2	57.6	66.1	66.3
Heavy Trucks:	66.2	65.6	56.6	57.8	66.2	66.3
Vehicle Noise:	74.4	73.5	70.5	65.6	74.2	74.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	190	409	881	1,899
CNEL:	204	440	948	2,043

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Koll Center to Fairchild Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 41,698 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,440 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.54	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.70	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.65	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.8	68.0	62.0	70.6	71.2
Medium Trucks:	64.2	63.6	57.2	55.6	64.1	64.3
Heavy Trucks:	64.3	63.7	54.6	55.9	64.2	64.4
Vehicle Noise:	72.4	71.5	68.5	63.7	72.2	72.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	112	242	522	1,124
CNEL:	121	260	561	1,209

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: MacArthur Boulevard to Koll Center

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 41,222 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,401 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.49	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.74	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.70	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.7	68.0	61.9	70.5	71.1
Medium Trucks:	64.2	63.5	57.1	55.6	64.1	64.3
Heavy Trucks:	64.2	63.6	54.6	55.8	64.2	64.3
Vehicle Noise:	72.4	71.4	68.5	63.6	72.2	72.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	112	240	518	1,115
CNEL:	120	258	557	1,200

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Irvine Boulevard to Portola Pakway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,193 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,408 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.99	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.24	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.20	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	62.3	61.6	55.2	53.7	62.1	62.4
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.5	69.5	66.6	61.7	70.3	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	188	405	873
CNEL:	94	202	436	940

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Warner Avenue to Edinger Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 87,026 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 7,180 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 96 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 64.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 64.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 42.438				
Road Grade: 0.0%	Medium Trucks: 42.344				
Left View: -90.0 degrees	Heavy Trucks: 42.439				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.74	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-11.50	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-15.46	0.96	-1.20	-5.31	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	77.3	76.2	74.5	68.4	77.0	77.6
Medium Trucks:	70.7	70.0	63.6	62.1	70.6	70.8
Heavy Trucks:	70.7	70.1	61.1	62.3	70.7	70.8
Vehicle Noise:	78.9	77.9	75.0	70.1	78.7	79.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	242	521	1,123	2,419
CNEL:	260	561	1,208	2,602

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 71,471 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,896 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 96 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 64.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 64.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 42.438				
Road Grade: 0.0%	Medium Trucks: 42.344				
Left View: -90.0 degrees	Heavy Trucks: 42.439				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.88	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-12.35	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-16.31	0.96	-1.20	-5.31	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.4	75.4	73.6	67.5	76.2	76.8
Medium Trucks:	69.8	69.2	62.8	61.2	69.7	69.9
Heavy Trucks:	69.9	69.3	60.2	61.5	69.8	70.0
Vehicle Noise:	78.0	77.1	74.1	69.3	77.8	78.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	212	457	985	2,121
CNEL:	228	492	1,059	2,282

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Edinger Avenue to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 66,471 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,484 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 96 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 64.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 64.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 42.438				
Road Grade: 0.0%		Medium Trucks: 42.344				
Left View: -90.0 degrees		Heavy Trucks: 42.439				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.57	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-12.67	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-16.63	0.96	-1.20	-5.31	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.1	75.1	73.3	67.2	75.9	76.5
Medium Trucks:	69.5	68.8	62.5	60.9	69.4	69.6
Heavy Trucks:	69.5	68.9	59.9	61.2	69.5	69.6
Vehicle Noise:	77.7	76.8	73.8	68.9	77.5	78.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	202	435	938	2,021
CNEL:	217	468	1,009	2,174

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Walnut Avenue to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 55,850 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,608 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.68	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.55	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.51	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.2	66.4	60.4	69.0	69.6
Medium Trucks:	63.0	62.3	56.0	54.4	62.9	63.1
Heavy Trucks:	63.8	63.3	54.2	55.5	63.8	64.0
Vehicle Noise:	71.1	70.2	67.0	62.3	70.9	71.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	96	207	447	963
CNEL:	103	223	479	1,033



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Jeffrey Road  
 Road Segment: I-5 NB Off-Ramp to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 62,333 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,142 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	5.16	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.08	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.03	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.1	67.3	61.2	69.9	70.5
Medium Trucks:	63.9	63.2	56.9	55.3	63.8	64.0
Heavy Trucks:	64.7	64.1	55.1	56.4	64.7	64.8
Vehicle Noise:	72.0	71.1	67.9	63.2	71.8	72.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	105	226	488	1,051
CNEL:	113	243	523	1,127

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Poplar (Meadows) to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 50,514 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,167 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos: 77.5% 12.9% 9.6% 97.42% Medium Trucks: 84.8% 4.9% 10.3% 1.84% Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
	<b>Noise Source Elevations (in feet)</b>				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0				
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.25	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.99	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.95	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.8	67.7	66.0	59.9	68.5	69.2	
Medium Trucks:	62.6	61.9	55.5	54.0	62.4	62.7	
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5	
Vehicle Noise:	70.6	69.7	66.6	61.9	70.5	70.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	194	418	900
CNEL:	97	208	448	966

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 49,193 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,058 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.13	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.11	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.06	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.9	59.8	68.4	69.0	
Medium Trucks:	62.5	61.8	55.4	53.9	62.3	62.6	
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4	
Vehicle Noise:	70.5	69.6	66.5	61.8	70.3	70.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	191	411	885
CNEL:	95	204	441	949

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Center Drive to Poplar (Meadows)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 48,338 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,988 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.06	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.18	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.14	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.6	67.6	65.8	59.7	68.4	69.0	
Medium Trucks:	62.4	61.7	55.3	53.8	62.3	62.5	
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3	
Vehicle Noise:	70.5	69.5	66.4	61.7	70.3	70.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	188	406	874
CNEL:	94	202	435	938

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jeffrey Road  
 Road Segment: I-405 NB Off-Ramp to Quail Creek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 48,513 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,002 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.07	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.17	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.12	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.6	67.6	65.8	59.8	68.4	69.0	
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5	
Heavy Trucks:	63.2	62.6	53.6	54.9	63.2	63.3	
Vehicle Noise:	70.5	69.6	66.4	61.7	70.3	70.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	189	407	877
CNEL:	94	203	436	940

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Barranca Parkway to Irvine Valley College

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,090 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,885 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.94	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.30	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.25	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.7	59.6	68.2	68.8
Medium Trucks:	62.3	61.6	55.2	53.7	62.1	62.4
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	70.3	69.4	66.3	61.6	70.1	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	399	859
CNEL:	92	199	428	922

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Quail Creek to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 47,231 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,897 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.96	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.28	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.24	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.5	65.7	59.6	68.3	68.9
Medium Trucks:	62.3	61.6	55.2	53.7	62.2	62.4
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	70.4	69.4	66.3	61.6	70.2	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	186	400	861
CNEL:	92	199	429	924

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Valley College to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,501 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,671 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.70	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.54	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.50	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.2	65.4	59.4	68.0	68.6	
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1	
Heavy Trucks:	62.9	62.3	53.2	54.5	62.8	63.0	
Vehicle Noise:	70.1	69.2	66.0	61.4	69.9	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	178	384	828
CNEL:	89	191	412	888



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Trabuco Road to Hideaway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,737 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,113 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.98	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.26	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.21	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.5	64.7	58.7	67.3	67.9
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4
Heavy Trucks:	62.1	61.6	52.5	53.8	62.1	62.3
Vehicle Noise:	69.4	68.5	65.3	60.6	69.2	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	344	741
CNEL:	80	171	369	795

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Hideaway to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,660 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,107 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.97	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.27	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.22	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.5	64.7	58.7	67.3	67.9
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4
Heavy Trucks:	62.1	61.5	52.5	53.8	62.1	62.2
Vehicle Noise:	69.4	68.5	65.3	60.6	69.2	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	344	740
CNEL:	79	171	369	794

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Roosevelt to Grove

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 40,485 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,340 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.29	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.95	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.91	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.2	65.4	59.4	68.0	68.6
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.9	62.3	53.2	54.5	62.8	63.0
Vehicle Noise:	70.1	69.2	66.0	61.4	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	170	366	788
CNEL:	85	182	392	845

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Grove to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,079 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,224 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.13	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.11	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.06	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.1	67.0	65.3	59.2	67.8	68.4	
Medium Trucks:	61.9	61.2	54.8	53.3	61.7	62.0	
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8	
Vehicle Noise:	69.9	69.0	65.9	61.2	69.7	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	357	770
CNEL:	83	178	383	826

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Bryan Avenue to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,761 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,373 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.80	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.44	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.39	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	60.1	59.4	53.1	51.5	60.0	60.2
Heavy Trucks:	61.0	60.4	51.3	52.6	60.9	61.1
Vehicle Noise:	68.2	67.3	64.1	59.5	68.0	68.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	287	619
CNEL:	66	143	308	664

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Encore to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,646 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,291 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.84	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-18.08	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-22.04	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.7	62.7	60.9	54.8	63.5	64.1
Medium Trucks:	57.5	56.8	50.4	48.9	57.4	57.6
Heavy Trucks:	58.3	57.7	48.7	49.9	58.3	58.4
Vehicle Noise:	65.6	64.6	61.5	56.8	65.4	65.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	89	191	412
CNEL:	44	95	205	442

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Boulevard to Encore

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,564 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,202 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-18.39	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-22.35	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.4	62.3	60.6	54.5	63.1	63.8	
Medium Trucks:	57.2	56.5	50.1	48.6	57.0	57.3	
Heavy Trucks:	58.0	57.4	48.4	49.6	58.0	58.1	
Vehicle Noise:	65.2	64.3	61.2	56.5	65.1	65.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	85	182	393
CNEL:	42	91	196	422

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jeronimo Road  
 Road Segment: Goodyear to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,085 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 667 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.71	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.90	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.5	61.4	59.7	53.6	62.2	62.8	
Medium Trucks:	56.3	55.6	49.2	47.7	56.1	56.4	
Heavy Trucks:	57.1	56.5	47.5	48.7	57.1	57.2	
Vehicle Noise:	64.3	63.4	60.3	55.6	64.1	64.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	55	118	255
CNEL:	27	59	127	273



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jeronimo Road  
 Road Segment: Alton Parkway to Goodyear

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,560 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 624 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.20	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.2	61.1	59.4	53.3	62.0	62.6
Medium Trucks:	56.0	55.3	48.9	47.4	55.9	56.1
Heavy Trucks:	56.8	56.2	47.2	48.4	56.8	56.9
Vehicle Noise:	64.0	63.1	60.0	55.3	63.9	64.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	113	243
CNEL:	26	56	121	261

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Old Laguna Canyon Road to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 52,557 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,336 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.55	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.69	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.65	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.4	70.4	68.6	62.5	71.2	71.8	
Medium Trucks:	64.8	64.1	57.8	56.2	64.7	64.9	
Heavy Trucks:	64.9	64.3	55.2	56.5	64.8	65.0	
Vehicle Noise:	73.0	72.1	69.1	64.3	72.8	73.3	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	129	278	600	1,293
CNEL:	139	300	645	1,391

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Laguna Canyon Freeway to Quail Hill Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,659 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,374 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.44	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.68	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.64	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.3	59.2	67.8	68.4
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6
Heavy Trucks:	61.5	60.9	51.9	53.1	61.5	61.6
Vehicle Noise:	69.7	68.7	65.8	60.9	69.5	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	124	267	576
CNEL:	62	134	288	620

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Discovery to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,807 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,139 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.45	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.3	66.2	64.4	58.4	67.0	67.6	
Medium Trucks:	60.7	60.0	53.6	52.1	60.6	60.8	
Heavy Trucks:	60.7	60.1	51.1	52.3	60.7	60.8	
Vehicle Noise:	68.9	67.9	65.0	60.1	68.7	69.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	110	236	508
CNEL:	55	118	254	547

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: I-405 Overcrossing to Pasteur

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 8,507 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 702 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 42.814				
Road Grade: 0.0%	Medium Trucks: 42.720				
Left View: -90.0 degrees	Heavy Trucks: 42.814				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.95	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-21.18	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.14	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.1	57.1	65.7	66.3
Medium Trucks:	59.5	58.9	52.5	51.0	59.4	59.7
Heavy Trucks:	59.9	59.4	50.3	51.6	59.9	60.1
Vehicle Noise:	67.7	66.7	63.7	58.9	67.5	67.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	73	157	339
CNEL:	36	78	169	364

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Irvine Center Drive to Discovery

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,537 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 787 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-3.86	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-21.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-25.06	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.7	64.6	62.8	56.8	65.4	66.0	
Medium Trucks:	59.1	58.4	52.0	50.5	58.9	59.2	
Heavy Trucks:	59.1	58.5	49.5	50.7	59.1	59.2	
Vehicle Noise:	67.2	66.3	63.4	58.5	67.0	67.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	86	184	397
CNEL:	43	92	198	427

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Quail Hill Parkway to I-405 Overcrossing

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,507 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 702 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.95	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-21.18	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.14	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.1	57.1	65.7	66.3
Medium Trucks:	59.5	58.9	52.5	51.0	59.4	59.7
Heavy Trucks:	59.9	59.4	50.3	51.6	59.9	60.1
Vehicle Noise:	67.7	66.7	63.7	58.9	67.5	67.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	73	157	339
CNEL:	36	78	169	364

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Pasteur to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,352 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	689 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-4.44	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-21.68	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-25.63	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.0	62.3	56.2	64.8	65.4
Medium Trucks:	58.5	57.8	51.5	49.9	58.4	58.6
Heavy Trucks:	58.5	57.9	48.9	50.1	58.5	58.6
Vehicle Noise:	66.7	65.7	62.8	57.9	66.5	66.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	169	364
CNEL:	39	84	182	391



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Waterworks to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,386 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 609 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-4.97	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-22.21	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-26.17	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.6	63.5	61.7	55.7	64.3	64.9	
Medium Trucks:	58.0	57.3	50.9	49.4	57.8	58.1	
Heavy Trucks:	58.0	57.4	48.4	49.6	58.0	58.1	
Vehicle Noise:	66.1	65.2	62.3	57.4	65.9	66.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	72	155	335
CNEL:	36	78	167	360

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,866 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 566 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-5.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-22.53	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-26.48	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.2	63.2	61.4	55.4	64.0	64.6	
Medium Trucks:	57.6	57.0	50.6	49.1	57.5	57.8	
Heavy Trucks:	57.7	57.1	48.0	49.3	57.6	57.8	
Vehicle Noise:	65.8	64.9	61.9	57.1	65.6	66.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	148	319
CNEL:	34	74	159	343

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Barranca Parkway to Waterworks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,179 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 510 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-5.75	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-22.99	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-26.94	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.8	62.7	61.0	54.9	63.5	64.1	
Medium Trucks:	57.2	56.5	50.1	48.6	57.1	57.3	
Heavy Trucks:	57.2	56.6	47.6	48.8	57.2	57.3	
Vehicle Noise:	65.4	64.4	61.5	56.6	65.2	65.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	297
CNEL:	32	69	149	320

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Lake Forest Drive  
 Road Segment: Hidden Canyon to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,345 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,513 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.61	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.85	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.80	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.3	64.5	58.5	67.1	67.7
Medium Trucks:	60.9	60.2	53.9	52.3	60.8	61.0
Heavy Trucks:	61.3	60.7	51.7	53.0	61.3	61.4
Vehicle Noise:	69.0	68.1	65.1	60.3	68.8	69.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	113	243	524
CNEL:	56	121	261	562

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Lake Forest Drive  
 Road Segment: Bake Parkway to Hidden Canyon (Romano)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,195 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,501 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.64	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.88	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.84	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.3	64.5	58.4	67.1	67.7
Medium Trucks:	60.9	60.2	53.8	52.3	60.8	61.0
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4
Vehicle Noise:	69.0	68.1	65.0	60.3	68.8	69.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	112	242	521
CNEL:	56	121	260	559

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Lake Forest Drive  
 Road Segment: Tesla to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,505 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,114 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.94	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-19.18	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-23.13	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.3	61.5	55.5	64.1	64.7
Medium Trucks:	57.9	57.3	50.9	49.4	57.8	58.0
Heavy Trucks:	58.3	57.8	48.7	50.0	58.3	58.5
Vehicle Noise:	66.1	65.1	62.1	57.3	65.9	66.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	96	207	445
CNEL:	48	103	222	478

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Lake Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,138 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	506 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	50.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 42.814				
Road Grade:	0.0%	Medium Trucks: 42.720				
Left View:	-90.0 degrees	Heavy Trucks: 42.814				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-2.35	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	70.80	-19.59	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	77.97	-23.55	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.1	55.0	53.3	47.2	55.8	56.4
Medium Trucks:	50.9	50.3	43.9	42.3	50.8	51.0
Heavy Trucks:	54.1	53.5	44.5	45.8	54.1	54.2
Vehicle Noise:	59.0	58.1	54.2	50.3	58.8	59.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	42	90
CNEL:	10	21	44	95

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Lynx  
 Road Segment: Irvine Boulevard to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1,253 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	103 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-9.25	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-26.49	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-30.45	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	50.1	49.1	47.3	41.2	49.9	50.5
Medium Trucks:	45.0	44.3	37.9	36.4	44.8	45.1
Heavy Trucks:	48.2	47.6	38.5	39.8	48.1	48.3
Vehicle Noise:	53.0	52.2	48.3	44.3	52.8	53.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	3	6	12	27
CNEL:	3	6	13	29



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: I-405 SB Off-Ramp to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 60,659 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,004 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 60 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 56.593				
Road Grade: 0.0%	Medium Trucks: 56.522				
Left View: -90.0 degrees	Heavy Trucks: 56.593				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.79	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-13.45	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-17.40	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.9	73.8	72.1	66.0	74.6	75.2
Medium Trucks:	68.1	67.5	61.1	59.6	68.0	68.3
Heavy Trucks:	67.8	67.2	58.2	59.4	67.8	67.9
Vehicle Noise:	76.4	75.4	72.6	67.6	76.2	76.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	258	556	1,198	2,581
CNEL:	278	599	1,291	2,780

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Main Street to I-405 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 60,198 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,966 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.76	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-13.48	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-17.43	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	74.9	73.8	72.0	66.0	74.6	75.2	
Medium Trucks:	68.1	67.4	61.1	59.5	68.0	68.2	
Heavy Trucks:	67.8	67.2	58.2	59.4	67.8	67.9	
Vehicle Noise:	76.4	75.4	72.5	67.6	76.1	76.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	257	553	1,192	2,568
CNEL:	277	596	1,284	2,766

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: I-405 NB Off-Ramp and I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 59,267 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,890 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 60 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.69	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-13.55	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-17.50	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.8	73.7	72.0	65.9	74.5	75.1
Medium Trucks:	68.0	67.4	61.0	59.5	67.9	68.2
Heavy Trucks:	67.7	67.1	58.1	59.3	67.7	67.8
Vehicle Noise:	76.3	75.3	72.5	67.5	76.1	76.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	254	548	1,180	2,542
CNEL:	274	590	1,271	2,738

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Jamboree Road to Fairchild Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,795 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,283 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.03	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.98	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	64.9	58.9	67.5	68.1
Medium Trucks:	61.5	60.9	54.5	53.0	61.4	61.6
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	69.6	68.7	65.6	60.9	69.4	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	357	768
CNEL:	82	178	382	824

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Fairchild Road to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,738 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,278 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.03	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.99	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	66.7	64.9	58.9	67.5	68.1	
Medium Trucks:	61.5	60.9	54.5	52.9	61.4	61.6	
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5	
Vehicle Noise:	69.6	68.7	65.5	60.9	69.4	69.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	356	767
CNEL:	82	177	382	823

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Fitch to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 41,993 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,464 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">VehicleType</th> <th style="text-align: center;">Day</th> <th style="text-align: center;">Evening</th> <th style="text-align: center;">Night</th> <th style="text-align: center;">Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td style="text-align: center;">77.5%</td> <td style="text-align: center;">12.9%</td> <td style="text-align: center;">9.6%</td> <td style="text-align: center;">97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td style="text-align: center;">84.8%</td> <td style="text-align: center;">4.9%</td> <td style="text-align: center;">10.3%</td> <td style="text-align: center;">1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td style="text-align: center;">86.5%</td> <td style="text-align: center;">2.7%</td> <td style="text-align: center;">10.8%</td> <td style="text-align: center;">0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.45	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.79	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.75	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.4	65.6	59.5	68.2	68.8
Medium Trucks:	62.2	61.5	55.1	53.6	62.1	62.3
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	70.3	69.3	66.2	61.5	70.1	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	375	808
CNEL:	87	187	402	866

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Michelson Drive to Douglas

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 43,680 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,604 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.62	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-13.62	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-17.58	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	68.9	67.1	61.1	69.7	70.3
Medium Trucks:	63.7	63.1	56.7	55.1	63.6	63.8
Heavy Trucks:	64.6	64.0	54.9	56.2	64.5	64.7
Vehicle Noise:	71.8	70.9	67.7	63.1	71.6	72.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	128	276	594	1,280
CNEL:	137	296	637	1,373

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Douglas to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 43,619 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,599 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.61	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-13.63	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-17.58	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	68.9	67.1	61.1	69.7	70.3
Medium Trucks:	63.7	63.0	56.7	55.1	63.6	63.8
Heavy Trucks:	64.6	64.0	54.9	56.2	64.5	64.7
Vehicle Noise:	71.8	70.9	67.7	63.1	71.6	72.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	128	276	594	1,279
CNEL:	137	296	637	1,372



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Skypark to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 33,051 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,727 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.41	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.83	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.79	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.4	66.3	64.5	58.5	67.1	67.7	
Medium Trucks:	61.1	60.5	54.1	52.6	61.0	61.2	
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1	
Vehicle Noise:	69.2	68.3	65.2	60.5	69.0	69.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	148	320	688
CNEL:	74	159	343	738

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Redhill Avenue to Skypark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,961 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,307 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.68	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.56	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.52	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	65.2	63.4	57.4	66.0	66.6
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1
Heavy Trucks:	60.8	60.3	51.2	52.5	60.8	60.9
Vehicle Noise:	68.1	67.2	64.0	59.3	67.9	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	282	607
CNEL:	65	140	302	651

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Birch Street to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,454 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,687 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.32	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.92	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.87	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	63.8	62.1	56.0	64.6	65.2
Medium Trucks:	58.6	58.0	51.6	50.1	58.5	58.8
Heavy Trucks:	59.5	58.9	49.9	51.1	59.5	59.6
Vehicle Noise:	66.7	65.8	62.7	58.0	66.5	67.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	106	229	493
CNEL:	53	114	245	529

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Campus Drive to Birch Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,933 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,892 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.82	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-16.42	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-20.38	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.1	64.3	58.3	66.9	67.5
Medium Trucks:	60.9	60.3	53.9	52.3	60.8	61.0
Heavy Trucks:	61.8	61.2	52.1	53.4	61.7	61.9
Vehicle Noise:	69.0	68.1	64.9	60.3	68.8	69.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	180	387	833
CNEL:	89	193	415	894

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Main Street  
 Road Segment: Gillette Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,129 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,641 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.66	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.58	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.53	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.6	65.8	59.7	68.4	69.0
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5
Heavy Trucks:	63.2	62.6	53.6	54.9	63.2	63.3
Vehicle Noise:	70.5	69.6	66.4	61.7	70.3	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	180	387	835
CNEL:	90	193	416	895

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Main Street  
 Road Segment: MacArthur Boulevard to Mercantile

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,170 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,231 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.14	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.10	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.05	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.1	65.3	59.2	67.9	68.5
Medium Trucks:	61.9	61.2	54.8	53.3	61.8	62.0
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.0	69.0	65.9	61.2	69.8	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	358	771
CNEL:	83	178	384	827

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Main Street  
 Road Segment: Executive Park to MacArthur Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,179 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,325 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.48	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.2	63.4	57.4	66.0	66.6
Medium Trucks:	60.0	59.4	53.0	51.5	59.9	60.1
Heavy Trucks:	60.9	60.3	51.3	52.5	60.9	61.0
Vehicle Noise:	68.1	67.2	64.1	59.4	67.9	68.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	283	610
CNEL:	65	141	304	655

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Main Street  
 Road Segment: Von Karman Avenue to Cartwright

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,884 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,300 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.57	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.53	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.2	65.2	63.4	57.3	66.0	66.6	
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1	
Heavy Trucks:	60.8	60.2	51.2	52.5	60.8	60.9	
Vehicle Noise:	68.1	67.2	64.0	59.3	67.9	68.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	281	606
CNEL:	65	140	302	650



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Main Street  
 Road Segment: McDermott to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,239 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,165 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.40	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.84	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.79	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.1	57.1	65.7	66.3
Medium Trucks:	59.7	59.0	52.7	51.1	59.6	59.8
Heavy Trucks:	60.6	60.0	50.9	52.2	60.5	60.7
Vehicle Noise:	67.8	66.9	63.7	59.1	67.6	68.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	270	582
CNEL:	62	134	290	624

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Main Street  
 Road Segment: Red Hill Avenue to Executive Circle

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,766 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,126 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.32	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.91	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.87	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.8	63.1	57.0	65.6	66.2
Medium Trucks:	59.6	59.0	52.6	51.1	59.5	59.8
Heavy Trucks:	60.5	59.9	50.9	52.1	60.5	60.6
Vehicle Noise:	67.7	66.8	63.7	59.0	67.5	68.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	124	267	575
CNEL:	62	133	286	617

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Main Street  
 Road Segment: Jamboree Road to Union

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,728 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,040 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.05	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.6	62.9	56.8	65.4	66.1
Medium Trucks:	59.5	58.8	52.4	50.9	59.3	59.6
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	67.5	66.6	63.5	58.8	67.4	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	121	260	559
CNEL:	60	129	279	600

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Main Street  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,523 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,198 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.40	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.36	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.0	64.0	62.2	56.2	64.8	65.4
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9
Heavy Trucks:	59.6	59.1	50.0	51.3	59.6	59.8
Vehicle Noise:	66.9	66.0	62.8	58.1	66.7	67.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	175	376
CNEL:	40	87	187	403

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Main Street  
 Road Segment: Siglo to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,884 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,970 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.99	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.24	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.20	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.5	62.7	56.7	65.3	65.9
Medium Trucks:	59.3	58.6	52.3	50.7	59.2	59.4
Heavy Trucks:	60.2	59.6	50.5	51.8	60.1	60.3
Vehicle Noise:	67.4	66.5	63.3	58.7	67.2	67.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	254	547
CNEL:	59	126	272	586

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Main Street  
 Road Segment: Veneto to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,172 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,912 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.86	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.38	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.33	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.4	64.4	62.6	56.5	65.2	65.8
Medium Trucks:	59.2	58.5	52.1	50.6	59.1	59.3
Heavy Trucks:	60.0	59.4	50.4	51.7	60.0	60.1
Vehicle Noise:	67.3	66.4	63.2	58.5	67.1	67.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	115	249	536
CNEL:	57	124	267	575

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Main Street  
 Road Segment: Paseo Westpark to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,180 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,005 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.93	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.17	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.12	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.2	61.5	55.4	64.0	64.6
Medium Trucks:	58.0	57.4	51.0	49.5	57.9	58.2
Heavy Trucks:	58.9	58.3	49.3	50.5	58.9	59.0
Vehicle Noise:	66.1	65.2	62.1	57.4	65.9	66.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	72	155	334
CNEL:	36	77	167	359

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Main Street  
 Road Segment: Harvard Avenue to San Mateo

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,142 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,002 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.94	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.18	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.14	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.2	61.4	55.4	64.0	64.6
Medium Trucks:	58.0	57.4	51.0	49.5	57.9	58.1
Heavy Trucks:	58.9	58.3	49.2	50.5	58.9	59.0
Vehicle Noise:	66.1	65.2	62.1	57.4	65.9	66.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	72	155	334
CNEL:	36	77	166	358



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Marine Way  
 Road Segment: Sand Canyon Avenue to Ridge Valley (O Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,411 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,334 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 42.814				
Road Grade: 0.0%		Medium Trucks: 42.720				
Left View: -90.0 degrees		Heavy Trucks: 42.814				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.79	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	77.72	-13.45	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	82.99	-17.40	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	68.9	67.2	61.1	69.7	70.4
Medium Trucks:	64.0	63.3	57.0	55.4	63.9	64.1
Heavy Trucks:	65.3	64.7	55.7	56.9	65.3	65.4
Vehicle Noise:	72.0	71.1	67.8	63.3	71.8	72.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	143	307	662
CNEL:	71	153	329	709

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Marine Way  
 Road Segment: Alton Parkway to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,689 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,614 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.73	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-14.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-18.46	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	65.9	64.2	58.1	66.7	67.3
Medium Trucks:	61.0	60.3	53.9	52.4	60.9	61.1
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	69.0	68.1	64.8	60.3	68.8	69.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	112	242	522
CNEL:	56	120	259	558

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Marine Way  
 Road Segment: Lynx to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,229 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,659 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-14.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-18.39	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.0	64.2	58.2	66.8	67.4
Medium Trucks:	61.0	60.4	54.0	52.5	60.9	61.2
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5
Vehicle Noise:	69.1	68.2	64.9	60.4	68.9	69.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	245	527
CNEL:	56	122	262	565

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Marine Way  
 Road Segment: County Access to Treble

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,917 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,138 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.86	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.33	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.1	65.1	63.3	57.2	65.9	66.5	
Medium Trucks:	60.1	59.4	53.1	51.5	60.0	60.2	
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5	
Vehicle Noise:	68.1	67.2	64.0	59.4	67.9	68.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	98	212	456
CNEL:	49	105	227	488

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Marine Way  
 Road Segment: Ridge Valley (O Street) to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,715 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,039 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.65	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.58	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.54	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.9	63.1	57.0	65.7	66.3
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	67.9	67.0	63.8	59.2	67.7	68.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	95	205	442
CNEL:	47	102	220	473

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Marine Way  
 Road Segment: Skyhawk to County Access

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,302 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,592 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.58	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.66	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.61	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.8	63.8	62.0	56.0	64.6	65.2
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9
Heavy Trucks:	60.1	59.5	50.5	51.8	60.1	60.2
Vehicle Noise:	66.9	66.0	62.7	58.1	66.7	67.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	81	174	375
CNEL:	40	86	186	401

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Marine Way  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,824 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,470 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.00	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.96	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.5	63.4	61.7	55.6	64.2	64.8	
Medium Trucks:	58.5	57.8	51.4	49.9	58.4	58.6	
Heavy Trucks:	59.8	59.2	50.2	51.4	59.8	59.9	
Vehicle Noise:	66.5	65.6	62.3	57.8	66.3	66.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	165	355
CNEL:	38	82	177	380

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Marine Way  
 Road Segment: Treble to Lynx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,340 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,348 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.34	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.1	63.1	61.3	55.2	63.9	64.5
Medium Trucks:	58.1	57.4	51.1	49.5	58.0	58.2
Heavy Trucks:	59.4	58.8	49.8	51.0	59.4	59.5
Vehicle Noise:	66.1	65.2	62.0	57.4	65.9	66.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	72	156	335
CNEL:	36	77	167	359



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: McGaw Avenue  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,868 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,144 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-0.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-17.51	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-21.47	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.8	60.7	59.0	52.9	61.5	62.1
Medium Trucks:	56.0	55.3	49.0	47.4	55.9	56.1
Heavy Trucks:	57.9	57.3	48.2	49.5	57.8	58.0
Vehicle Noise:	64.0	63.1	59.7	55.3	63.8	64.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	112	242
CNEL:	26	56	120	259

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: McGaw Avenue  
 Road Segment: Red Hill Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,510 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,115 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 35 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-0.39	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-17.63	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-21.58	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.7	60.6	58.8	52.8	61.4	62.0
Medium Trucks:	55.9	55.2	48.9	47.3	55.8	56.0
Heavy Trucks:	57.7	57.2	48.1	49.4	57.7	57.8
Vehicle Noise:	63.9	63.0	59.6	55.2	63.7	64.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	51	111	238
CNEL:	25	55	118	254

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: McGaw Avenue  
 Road Segment: Daimler to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,063 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 748 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-2.12	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-19.36	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-23.32	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.9	58.9	57.1	51.0	59.7	60.3
Medium Trucks:	54.2	53.5	47.1	45.6	54.0	54.3
Heavy Trucks:	56.0	55.4	46.4	47.6	56.0	56.1
Vehicle Noise:	62.2	61.3	57.8	53.5	62.0	62.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	85	182
CNEL:	19	42	90	195

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: McGaw Avenue  
 Road Segment: Jamboree Road to Murphy Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,424 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 365 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-22.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-26.43	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.8	55.8	54.0	47.9	56.6	57.2
Medium Trucks:	51.0	50.4	44.0	42.5	50.9	51.2
Heavy Trucks:	52.9	52.3	43.3	44.5	52.9	53.0
Vehicle Noise:	59.0	58.2	54.7	50.3	58.9	59.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	113
CNEL:	12	26	56	121

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Meadowood  
 Road Segment: Culver Drive to Canyonwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,920 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 901 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	0.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-17.09	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-21.05	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	56.6	55.6	53.8	47.8	56.4	57.0	
Medium Trucks:	51.5	50.8	44.4	42.9	51.3	51.6	
Heavy Trucks:	54.7	54.1	45.1	46.3	54.7	54.8	
Vehicle Noise:	59.5	58.7	54.8	50.9	59.4	59.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	26	57	122
CNEL:	13	28	60	130

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Meridian  
 Road Segment: Spectrum to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,563 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 211 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-6.94	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-24.18	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-28.13	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.6	51.5	49.7	43.7	52.3	52.9
Medium Trucks:	47.1	46.4	40.0	38.5	46.9	47.2
Heavy Trucks:	49.5	49.0	39.9	41.2	49.5	49.7
Vehicle Noise:	55.1	54.2	50.6	46.4	54.9	55.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	13	29	62
CNEL:	7	14	30	66

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Meridian  
 Road Segment: Alton Parkway to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,184 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	180 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-7.63	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-24.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-28.83	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	51.9	50.8	49.0	43.0	51.6	52.2
Medium Trucks:	46.4	45.7	39.3	37.8	46.3	46.5
Heavy Trucks:	48.8	48.3	39.2	40.5	48.8	49.0
Vehicle Noise:	54.4	53.5	49.9	45.7	54.2	54.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	12	26	55
CNEL:	6	13	27	59

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Merit  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,641 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 300 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-4.62	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-21.86	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-25.82	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.7	53.7	51.9	45.9	54.5	55.1
Medium Trucks:	49.6	48.9	42.6	41.0	49.5	49.7
Heavy Trucks:	52.8	52.2	43.2	44.4	52.8	52.9
Vehicle Noise:	57.6	56.8	52.9	49.0	57.5	57.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	12	25	55
CNEL:	6	13	27	58



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Michelson Drive  
 Road Segment: Riparian to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,218 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,080 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.74	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.45	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.2	57.1	65.7	66.4
Medium Trucks:	60.0	59.3	52.9	51.4	59.9	60.1
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4
Vehicle Noise:	68.0	67.1	63.8	59.3	67.8	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	96	208	448
CNEL:	48	103	223	480

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Michelson Drive  
 Road Segment: Almond Tree Lane to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,910 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 818 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.31	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-19.55	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-23.51	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.8	63.8	62.0	55.9	64.6	65.2	
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9	
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2	
Vehicle Noise:	66.8	65.9	62.7	58.1	66.7	67.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	48	104	224
CNEL:	24	52	112	240

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Michelson Drive  
 Road Segment: Von Karman Avenue to Obsidian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,682 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,954 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.47	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.72	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.7	64.7	62.9	56.9	65.5	66.1	
Medium Trucks:	59.7	59.0	52.7	51.1	59.6	59.8	
Heavy Trucks:	61.0	60.4	51.4	52.7	61.0	61.1	
Vehicle Noise:	67.7	66.8	63.6	59.0	67.6	68.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	93	199	429
CNEL:	46	99	213	460

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Michelson Drive  
 Road Segment: Parkside to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,374 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,846 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.02	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.97	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.5	64.4	62.7	56.6	65.2	65.8	
Medium Trucks:	59.5	58.8	52.4	50.9	59.3	59.6	
Heavy Trucks:	60.8	60.2	51.2	52.4	60.8	60.9	
Vehicle Noise:	67.5	66.6	63.3	58.8	67.3	67.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	89	192	414
CNEL:	44	95	206	443

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Michelson Drive  
 Road Segment: Gillman to Seton/Sandburg Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,165 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	756 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.65	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-19.89	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-23.85	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.5	63.4	61.7	55.6	64.2	64.8
Medium Trucks:	58.5	57.8	51.4	49.9	58.4	58.6
Heavy Trucks:	59.8	59.2	50.2	51.4	59.8	59.9
Vehicle Noise:	66.5	65.6	62.3	57.8	66.3	66.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	46	99	213
CNEL:	23	49	106	228

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Michelson Drive  
 Road Segment: Carlson to Prince

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,061 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,232 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 75.0 feet Centerline Dist. to Observer: 75.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 70.413 Medium Trucks: 70.356 Heavy Trucks: 70.413																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.05	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	77.72	-15.19	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	82.99	-19.15	-2.33	-1.20	-5.25	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.0	64.0	62.2	56.1	64.8	65.4
Medium Trucks:	59.0	58.3	52.0	50.4	58.9	59.1
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	67.0	66.1	62.9	58.3	66.8	67.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	100	215	462
CNEL:	49	107	230	495

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Michelson Drive  
 Road Segment: MacArthur Boulevard to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,323 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,677 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.80	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.39	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.1	64.0	62.2	56.2	64.8	65.4	
Medium Trucks:	59.0	58.4	52.0	50.5	58.9	59.2	
Heavy Trucks:	60.4	59.8	50.7	52.0	60.3	60.5	
Vehicle Noise:	67.1	66.2	62.9	58.4	66.9	67.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	180	388
CNEL:	42	89	193	415

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Michelson Drive  
 Road Segment: Harvard Avenue to Parkside

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,916 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,478 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.94	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.5	63.5	61.7	55.6	64.3	64.9
Medium Trucks:	58.5	57.8	51.5	49.9	58.4	58.6
Heavy Trucks:	59.8	59.2	50.2	51.4	59.8	59.9
Vehicle Noise:	66.5	65.6	62.4	57.8	66.3	66.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	166	357
CNEL:	38	82	177	382



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Michelson Drive  
 Road Segment: Bixby to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,607 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,453 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.01	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.4	63.4	61.6	55.6	64.2	64.8	
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5	
Heavy Trucks:	59.7	59.1	50.1	51.4	59.7	59.8	
Vehicle Noise:	66.5	65.6	62.3	57.7	66.3	66.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	164	352
CNEL:	38	81	175	377

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Michelson Drive  
 Road Segment: Jamboree Road to Carlson

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,486 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,103 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.79	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.45	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.41	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.3	64.5	58.5	67.1	67.7
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.4
Heavy Trucks:	62.6	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	69.4	68.5	65.2	60.6	69.2	69.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	245	529
CNEL:	57	122	263	566

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Michelson Drive  
 Road Segment: Teller to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,530 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,106 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 47.329				
Road Grade: 0.0%	Medium Trucks: 47.244				
Left View: -90.0 degrees	Heavy Trucks: 47.329				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.80	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.44	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.40	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.3	64.5	58.5	67.1	67.7
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	62.6	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	69.4	68.5	65.2	60.6	69.2	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	246	529
CNEL:	57	122	263	567

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Michelson Drive  
 Road Segment: Jordan East to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,719 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	554 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	30.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	30.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 29.547				
Road Grade:	0.0%	Medium Trucks: 29.411				
Left View:	-90.0 degrees	Heavy Trucks: 29.547				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.00	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	77.72	-21.24	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	82.99	-25.20	3.32	-1.20	-5.77	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.6	61.8	55.7	64.4	65.0
Medium Trucks:	58.6	58.0	51.6	50.0	58.5	58.7
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0
Vehicle Noise:	66.6	65.7	62.5	57.9	66.5	66.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	38	81	174
CNEL:	19	40	87	186

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Michelson Drive  
 Road Segment: Culver Drive to Angell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,757 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	722 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	16 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	40.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	40.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 39.306				
Road Grade:	0.0%	Medium Trucks: 39.205				
Left View:	-90.0 degrees	Heavy Trucks: 39.307				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.85	1.46	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-20.09	1.48	-1.20	-5.08	0.000	0.000
Heavy Trucks:	82.99	-24.05	1.46	-1.20	-5.56	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.9	62.9	61.1	55.0	63.7	64.3
Medium Trucks:	57.9	57.2	50.9	49.3	57.8	58.0
Heavy Trucks:	59.2	58.6	49.6	50.8	59.2	59.3
Vehicle Noise:	65.9	65.0	61.8	57.2	65.7	66.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	45	97	208
CNEL:	22	48	103	223

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Modjeska (A Street)  
 Road Segment: Portola Springs to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,725 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,132 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 24 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 30.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 30.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 27.659				
Road Grade: 0.0%	Medium Trucks: 27.514				
Left View: -90.0 degrees	Heavy Trucks: 27.659				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.41	3.75	-1.20	-4.81	0.000	0.000
Medium Trucks:	79.45	-18.65	3.79	-1.20	-5.14	0.000	0.000
Heavy Trucks:	84.25	-22.61	3.75	-1.20	-5.77	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.8	60.7	69.3	69.9
Medium Trucks:	63.4	62.7	56.4	54.8	63.3	63.5
Heavy Trucks:	64.2	63.6	54.6	55.8	64.2	64.3
Vehicle Noise:	71.4	70.5	67.4	62.7	71.2	71.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	169	363
CNEL:	39	84	181	390

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Modjeska (A Street)  
 Road Segment: South of Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1,874 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	155 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-10.06	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-27.30	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-31.25	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.0	58.0	56.2	50.2	58.8	59.4
Medium Trucks:	52.8	52.1	45.8	44.2	52.7	52.9
Heavy Trucks:	53.6	53.0	44.0	45.3	53.6	53.7
Vehicle Noise:	60.9	60.0	56.8	52.1	60.7	61.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	42	90
CNEL:	10	21	45	96

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Muirlands Boulevard  
 Road Segment: Bake Parkway to City Limits

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,376 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,186 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.40	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.0	63.9	62.2	56.1	64.7	65.3	
Medium Trucks:	58.8	58.1	51.7	50.2	58.6	58.9	
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7	
Vehicle Noise:	66.8	65.9	62.8	58.1	66.6	67.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	80	173	374
CNEL:	40	86	186	401



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Muirlands Boulevard  
 Road Segment: Alton Parkway to Sterling

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,970 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 988 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.20	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.2	63.1	61.4	55.3	63.9	64.6	
Medium Trucks:	58.0	57.3	50.9	49.4	57.8	58.1	
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9	
Vehicle Noise:	66.0	65.1	62.0	57.3	65.9	66.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	331
CNEL:	35	76	165	355

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Muirlands Boulevard  
 Road Segment: Wrigley to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,970 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 988 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.20	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.1	61.4	55.3	63.9	64.6
Medium Trucks:	58.0	57.3	50.9	49.4	57.8	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.0	65.1	62.0	57.3	65.9	66.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	331
CNEL:	35	76	165	355

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Newport Coast Drive  
 Road Segment: SR-73 NB Off-Ramp to Turtle Ridge

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,333 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,430 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.12	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.08	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.3	61.5	55.5	64.1	64.7
Medium Trucks:	58.4	57.7	51.3	49.8	58.2	58.5
Heavy Trucks:	59.7	59.1	50.0	51.3	59.7	59.8
Vehicle Noise:	66.4	65.5	62.2	57.7	66.2	66.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	75	162	349
CNEL:	37	80	173	373

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Newport Coast Drive  
 Road Segment: Turtle Crest to Bonita Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,101 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 998 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.45	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.69	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.64	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.8	61.8	60.0	53.9	62.6	63.2	
Medium Trucks:	56.8	56.1	49.8	48.2	56.7	56.9	
Heavy Trucks:	58.1	57.5	48.5	49.7	58.1	58.2	
Vehicle Noise:	64.8	63.9	60.7	56.1	64.6	65.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	59	127	275
CNEL:	29	63	136	294

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Nightmist  
 Road Segment: Sand Canyon Avenue to Tulip (Road C)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	11,630 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	959 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.61	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.56	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.1	58.1	56.3	50.3	58.9	59.5
Medium Trucks:	53.6	53.0	46.6	45.1	53.5	53.7
Heavy Trucks:	56.1	55.5	46.5	47.7	56.1	56.2
Vehicle Noise:	61.6	60.8	57.1	53.0	61.5	61.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	36	78	169
CNEL:	18	39	83	180

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Northwood  
 Road Segment: Yale Avenue to Savannah

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,715 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 389 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-4.96	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-22.20	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-26.15	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.0	58.9	57.1	51.1	59.7	60.3	
Medium Trucks:	54.2	53.5	47.2	45.6	54.1	54.3	
Heavy Trucks:	56.0	55.5	46.4	47.7	56.0	56.2	
Vehicle Noise:	62.2	61.3	57.9	53.5	62.0	62.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	51	110
CNEL:	12	25	55	118

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Northwood  
 Road Segment: Goldrush to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,773 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	311 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.93	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-23.17	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-27.12	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.0	57.9	56.2	50.1	58.7	59.4
Medium Trucks:	53.2	52.6	46.2	44.7	53.1	53.4
Heavy Trucks:	55.1	54.5	45.5	46.7	55.1	55.2
Vehicle Noise:	61.2	60.4	56.9	52.5	61.1	61.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	20	44	95
CNEL:	10	22	47	101

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Oak Canyon Drive  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,082 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 997 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.97	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-19.20	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-23.16	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.1	66.1	64.3	58.2	66.9	67.5	
Medium Trucks:	60.9	60.2	53.9	52.3	60.8	61.0	
Heavy Trucks:	61.7	61.1	52.1	53.4	61.7	61.8	
Vehicle Noise:	69.0	68.1	64.9	60.2	68.8	69.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	144	311
CNEL:	33	72	155	333



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Pacifica  
 Road Segment: Gateway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,406 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,023 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.58	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.53	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.9	61.9	60.1	54.0	62.7	63.3	
Medium Trucks:	56.9	56.2	49.9	48.3	56.8	57.0	
Heavy Trucks:	58.2	57.6	48.6	49.8	58.2	58.3	
Vehicle Noise:	64.9	64.0	60.8	56.2	64.7	65.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	60	130	279
CNEL:	30	64	139	299

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Pacifica  
 Road Segment: Alton Parkway to Gateway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,464 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 781 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.51	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.75	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.71	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.8	60.7	58.9	52.9	61.5	62.1	
Medium Trucks:	55.7	55.1	48.7	47.1	55.6	55.8	
Heavy Trucks:	57.0	56.5	47.4	48.7	57.0	57.1	
Vehicle Noise:	63.8	62.9	59.6	55.0	63.6	64.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	233
CNEL:	25	54	116	249

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred Project Name: Irvine GP  
 Road Name: Pacifica Job Number: 15937  
 Road Segment: Irvine Center Drive to Fortune Drive (Spectrum Center Drive)

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,930 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 572 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 40 mph																					
Near/Far Lane Distance: 48 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 62.5 feet	Heavy Trucks: 8.006 <span style="float:right">Grade Adjustment: 0.0</span>																				
Centerline Dist. to Observer: 62.5 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet																					
Road Grade: 0.0%																					
Left View: -90.0 degrees																					
Right View: 90.0 degrees																					
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786																				
	Medium Trucks: 57.717																				
	Heavy Trucks: 57.787																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.87	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.06	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.4	59.3	57.6	51.5	60.1	60.7
Medium Trucks:	54.4	53.7	47.3	45.8	54.3	54.5
Heavy Trucks:	55.7	55.1	46.1	47.3	55.7	55.8
Vehicle Noise:	62.4	61.5	58.2	53.7	62.2	62.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	41	88	189
CNEL:	20	44	94	203

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Pacifica  
 Road Segment: Meridian to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,476 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	369 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.77	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-23.00	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-26.96	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.5	57.4	55.7	49.6	58.2	58.8
Medium Trucks:	52.5	51.8	45.4	43.9	52.4	52.6
Heavy Trucks:	53.8	53.2	44.2	45.4	53.8	53.9
Vehicle Noise:	60.5	59.6	56.3	51.8	60.3	60.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	30	66	141
CNEL:	15	33	70	151

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Park Place  
 Road Segment: Christamon South to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,750 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	309 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-5.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-22.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-26.48	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.2	53.2	51.4	45.3	54.0	54.6
Medium Trucks:	48.7	48.0	41.7	40.1	48.6	48.8
Heavy Trucks:	51.2	50.6	41.6	42.8	51.2	51.3
Vehicle Noise:	56.7	55.9	52.2	48.0	56.6	57.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	79
CNEL:	8	18	39	85

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred Project Name: Irvine GP  
 Road Name: Portola Parkway Job Number: 15937  
 Road Segment: Bee Canyon Access Road to Sand Canyon Avenue

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,011 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,981 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float:right">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.09	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.05	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.9	60.8	69.4	70.0
Medium Trucks:	63.1	62.4	56.0	54.5	63.0	63.2
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	71.3	70.3	67.4	62.5	71.1	71.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	158	341	735
CNEL:	79	170	367	791

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Portola Parkway  
 Road Segment: Jeffrey Road to Bee Canyon Access Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,959 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,977 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.06	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.8	60.8	69.4	70.0
Medium Trucks:	63.1	62.4	56.0	54.5	62.9	63.2
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	71.2	70.3	67.4	62.5	71.0	71.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	158	341	734
CNEL:	79	170	367	790

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Portola Parkway  
 Road Segment: Arrowhead to Ridge Valley Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,161 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,911 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.25	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.20	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.5	68.5	66.7	60.6	69.3	69.9	
Medium Trucks:	62.9	62.2	55.9	54.3	62.8	63.0	
Heavy Trucks:	62.9	62.4	53.3	54.6	62.9	63.1	
Vehicle Noise:	71.1	70.2	67.2	62.3	70.9	71.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	72	155	333	718
CNEL:	77	166	358	772



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Portola Parkway  
 Road Segment: Sand Canyon Avenue to Arrowhead

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,291 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,757 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.38	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.61	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.57	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.2	68.1	66.3	60.3	68.9	69.5	
Medium Trucks:	62.6	61.9	55.5	54.0	62.4	62.7	
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7	
Vehicle Noise:	70.7	69.8	66.9	62.0	70.5	71.0	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	146	315	679
CNEL:	73	157	339	730

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Portola Parkway  
 Road Segment: Portola Springs to SR-241 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,068 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,408 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.57	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.53	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	67.1	65.4	59.3	67.9	68.5	
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7	
Heavy Trucks:	61.6	61.0	52.0	53.2	61.6	61.7	
Vehicle Noise:	69.8	68.9	65.9	61.0	69.6	70.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	126	272	586
CNEL:	63	136	292	630

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Portola Parkway  
 Road Segment: Gatepark to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,306 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,335 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.86	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.38	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.33	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.1	61.5	55.1	53.6	62.0	62.2
Heavy Trucks:	62.2	61.6	52.5	53.8	62.1	62.3
Vehicle Noise:	70.3	69.4	66.4	61.6	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	184	397	856
CNEL:	92	198	427	921

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Portola Parkway  
 Road Segment: ETC-6 (SR-261) NB Off-Ramp to Gatepark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,985 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,309 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.81	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.43	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.38	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.9	59.8	68.4	69.0	
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2	
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2	
Vehicle Noise:	70.3	69.3	66.4	61.5	70.1	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	183	394	849
CNEL:	91	197	424	914

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Portola Parkway  
 Road Segment: SR-261 SB Off-Ramp to SR-261 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,082 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,234 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.57	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.53	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.7	59.7	68.3	68.9
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.1
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	70.1	69.2	66.2	61.4	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	179	386	831
CNEL:	89	193	415	894

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Portola Parkway  
 Road Segment: Jamboree Road to Bellevue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,830 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,213 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.63	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.61	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.57	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.7	59.6	68.2	68.9
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0
Heavy Trucks:	61.9	61.3	52.3	53.6	61.9	62.0
Vehicle Noise:	70.1	69.2	66.2	61.3	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	178	383	826
CNEL:	89	191	412	888

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Portola Parkway  
 Road Segment: Bellevue to ETC-6 (SR-261) SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,584 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,193 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.59	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.65	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.61	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.4	65.6	59.6	68.2	68.8	
Medium Trucks:	61.9	61.2	54.8	53.3	61.7	62.0	
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0	
Vehicle Noise:	70.0	69.1	66.2	61.3	69.8	70.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	381	821
CNEL:	88	190	410	883

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Portola Parkway  
 Road Segment: Yale Avenue to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,071 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,068 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.33	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.90	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.86	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.2	65.4	59.3	68.0	68.6
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7
Heavy Trucks:	61.6	61.1	52.0	53.3	61.6	61.7
Vehicle Noise:	69.8	68.9	65.9	61.0	69.6	70.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	170	366	789
CNEL:	85	183	394	849



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Portola Parkway  
 Road Segment: Culver Drive to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,276 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,838 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.18	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.42	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.37	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.6	64.9	58.8	67.4	68.0
Medium Trucks:	61.1	60.4	54.1	52.5	61.0	61.2
Heavy Trucks:	61.1	60.5	51.5	52.8	61.1	61.2
Vehicle Noise:	69.3	68.4	65.4	60.5	69.1	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	339	729
CNEL:	78	169	364	785

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Portola Parkway  
 Road Segment: Silverado to Portola Springs

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,067 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 996 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.84	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-20.08	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-24.04	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.7	65.6	63.9	57.8	66.4	67.0	
Medium Trucks:	60.1	59.4	53.1	51.5	60.0	60.2	
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2	
Vehicle Noise:	68.3	67.3	64.4	59.5	68.1	68.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	100	216	465
CNEL:	50	108	232	500

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Pusan  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,470 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 204 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-6.31	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-23.55	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-27.50	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.1	52.0	50.2	44.2	52.8	53.4
Medium Trucks:	47.9	47.2	40.9	39.3	47.8	48.0
Heavy Trucks:	51.1	50.5	41.5	42.7	51.1	51.2
Vehicle Noise:	55.9	55.1	51.2	47.3	55.8	56.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	20	42
CNEL:	4	10	21	45

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Quail Hill Parkway  
 Road Segment: Shady Canyon Drive to Passage

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,448 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,274 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.90	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.14	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.09	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.3	64.3	62.5	56.4	65.1	65.7
Medium Trucks:	59.1	58.4	52.0	50.5	59.0	59.2
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0
Vehicle Noise:	67.2	66.2	63.1	58.4	67.0	67.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	182	392
CNEL:	42	91	195	420

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Quail Hill Parkway  
 Road Segment: East Knollcrest to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,917 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	818 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.82	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.02	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.4	62.3	60.6	54.5	63.1	63.7
Medium Trucks:	57.1	56.5	50.1	48.6	57.0	57.3
Heavy Trucks:	58.0	57.4	48.4	49.6	58.0	58.1
Vehicle Noise:	65.2	64.3	61.2	56.5	65.0	65.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	135	292
CNEL:	31	67	145	313

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred Project Name: Irvine GP  
 Road Name: Quassar Drive (Spectrum) Job Number: 15937  
 Road Segment: Irvine Center Drive to Spectrum Center Drive (Fortune)

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,981 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 163 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 16 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 39.306 Medium Trucks: 39.205 Heavy Trucks: 39.307																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-7.27	1.46	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-24.50	1.48	-1.20	-5.08	0.000	0.000
Heavy Trucks:	77.97	-28.46	1.46	-1.20	-5.56	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	51.7	50.7	48.9	42.8	51.5	52.1
Medium Trucks:	46.6	45.9	39.5	38.0	46.5	46.7
Heavy Trucks:	49.8	49.2	40.2	41.4	49.8	49.9
Vehicle Noise:	54.6	53.8	49.9	46.0	54.5	54.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	8	17	37
CNEL:	4	8	18	39

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Red Hill Avenue  
 Road Segment: MacArthur Boulevard to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,189 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,646 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.03	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.99	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.5	68.5	66.7	60.6	69.3	69.9
Medium Trucks:	63.1	62.4	56.0	54.5	63.0	63.2
Heavy Trucks:	63.5	62.9	53.9	55.1	63.5	63.6
Vehicle Noise:	71.2	70.3	67.2	62.5	71.0	71.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	211	455	981
CNEL:	105	227	489	1,054

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Red Hill Avenue  
 Road Segment: I-405 Over Crossing to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,062 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,820 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.00	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.1	65.3	59.3	67.9	68.5
Medium Trucks:	61.7	61.0	54.7	53.1	61.6	61.8
Heavy Trucks:	62.1	61.5	52.5	53.8	62.1	62.2
Vehicle Noise:	69.8	68.9	65.9	61.1	69.6	70.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	128	275	592
CNEL:	64	137	295	636



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Red Hill Avenue  
 Road Segment: Alton Parkway to Deere Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,427 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,593 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.73	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.51	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.47	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.0	67.0	65.2	59.2	67.8	68.4	
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7	
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1	
Vehicle Noise:	69.7	68.8	65.8	61.0	69.5	70.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	168	363	782
CNEL:	84	181	390	840

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Red Hill Avenue  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,718 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,534 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.63	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.61	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.56	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.9	65.1	59.1	67.7	68.3
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	69.6	68.7	65.7	60.9	69.4	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	357	770
CNEL:	83	178	384	827

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Red Hill Avenue  
 Road Segment: Deere Avenue to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,672 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,448 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.48	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.76	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.71	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	65.0	58.9	67.5	68.1
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	61.8	61.2	52.1	53.4	61.7	61.9
Vehicle Noise:	69.5	68.6	65.5	60.7	69.3	69.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	349	752
CNEL:	81	174	375	808

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Red Hill Avenue  
 Road Segment: Skypark East to MacArthur Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,395 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,765 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.06	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.18	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.14	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.3	66.5	60.4	69.1	69.7
Medium Trucks:	62.9	62.2	55.9	54.3	62.8	63.0
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4
Vehicle Noise:	71.0	70.1	67.1	62.3	70.8	71.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	146	316	680
CNEL:	73	157	339	731

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Red Hill Avenue  
 Road Segment: Main Street to Skypark East

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,423 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,520 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.59	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.83	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.78	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.2	61.6	55.2	53.7	62.1	62.4
Heavy Trucks:	62.6	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	70.4	69.4	66.4	61.6	70.2	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	286	615
CNEL:	66	142	307	661

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Research Drive  
 Road Segment: Hubble to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,938 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,057 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">VehicleType</th> <th style="text-align: center;">Day</th> <th style="text-align: center;">Evening</th> <th style="text-align: center;">Night</th> <th style="text-align: center;">Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td style="text-align: center;">77.5%</td> <td style="text-align: center;">12.9%</td> <td style="text-align: center;">9.6%</td> <td style="text-align: center;">97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td style="text-align: center;">84.8%</td> <td style="text-align: center;">4.9%</td> <td style="text-align: center;">10.3%</td> <td style="text-align: center;">1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td style="text-align: center;">86.5%</td> <td style="text-align: center;">2.7%</td> <td style="text-align: center;">10.8%</td> <td style="text-align: center;">0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.01	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.4	66.3	64.6	58.5	67.1	67.7	
Medium Trucks:	61.2	60.5	54.1	52.6	61.0	61.3	
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1	
Vehicle Noise:	69.2	68.3	65.2	60.5	69.0	69.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	250	539
CNEL:	58	125	269	579

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Research Drive  
 Road Segment: Scientific to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,327 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,264 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.93	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.17	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.13	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.3	64.2	62.5	56.4	65.0	65.6
Medium Trucks:	59.0	58.4	52.0	50.5	58.9	59.2
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0
Vehicle Noise:	67.1	66.2	63.1	58.4	66.9	67.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	181	390
CNEL:	42	90	194	418

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Research Drive  
 Road Segment: Bake Parkway to Muller

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,774 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,054 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.72	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.96	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.92	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.5	63.4	61.7	55.6	64.2	64.8
Medium Trucks:	58.2	57.6	51.2	49.7	58.1	58.4
Heavy Trucks:	59.1	58.5	49.5	50.7	59.1	59.2
Vehicle Noise:	66.3	65.4	62.3	57.6	66.1	66.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	74	160	345
CNEL:	37	80	172	370



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Research Drive  
 Road Segment: Irvine Center Drive to Bunsen

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,214 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 843 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.69	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.93	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.89	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.5	62.5	60.7	54.6	63.3	63.9
Medium Trucks:	57.3	56.6	50.2	48.7	57.2	57.4
Heavy Trucks:	58.1	57.5	48.5	49.7	58.1	58.2
Vehicle Noise:	65.4	64.4	61.3	56.6	65.2	65.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	297
CNEL:	32	69	148	319

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred Project Name: Irvine GP  
 Road Name: Ridge Valley (O Street) Job Number: 15937  
 Road Segment: Irvine Boulevard to Trabuco Road (Great Park Boulevard)

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b> Average Daily Traffic (Adt): 14,874 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,227 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	<b>Site Conditions (Hard = 10, Soft = 15)</b> Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b> Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<b>Vehicle Mix</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table> <b>Noise Source Elevations (in feet)</b> Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Lane Equivalent Distance (in feet)</b> Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.06	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.30	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.26	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.1	62.3	56.3	64.9	65.5
Medium Trucks:	58.9	58.2	51.9	50.3	58.8	59.0
Heavy Trucks:	59.8	59.2	50.1	51.4	59.7	59.9
Vehicle Noise:	67.0	66.1	62.9	58.3	66.8	67.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	177	382
CNEL:	41	88	190	410

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Ridge Valley (O Street)  
 Road Segment: Portola Parkway to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,231 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,009 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.91	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.15	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.11	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.2	61.5	55.4	64.0	64.6
Medium Trucks:	58.1	57.4	51.0	49.5	57.9	58.2
Heavy Trucks:	58.9	58.3	49.3	50.5	58.9	59.0
Vehicle Noise:	66.1	65.2	62.1	57.4	65.9	66.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	72	156	335
CNEL:	36	78	167	360

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred Project Name: Irvine GP  
 Road Name: Ridge Valley (O Street) Job Number: 15937  
 Road Segment: Trabuco Road (Great Park Boulevard) to Marine Way

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,130 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 918 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.52	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.9	62.8	61.1	55.0	63.6	64.2
Medium Trucks:	57.7	57.0	50.6	49.1	57.5	57.8
Heavy Trucks:	58.5	57.9	48.9	50.1	58.5	58.6
Vehicle Noise:	65.7	64.8	61.7	57.0	65.5	66.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	68	146	315
CNEL:	34	73	157	338

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Ridge Valley (O Street)  
 Road Segment: Ranchland to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 936 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 77 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-13.07	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-30.31	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-34.27	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.0	55.0	53.2	47.1	55.8	56.4
Medium Trucks:	49.8	49.1	42.8	41.2	49.7	49.9
Heavy Trucks:	50.6	50.0	41.0	42.2	50.6	50.7
Vehicle Noise:	57.9	56.9	53.8	49.1	57.7	58.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	12	26	56
CNEL:	6	13	28	61

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Ridgeline Drive  
 Road Segment: Concordia East to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,053 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,324 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 35 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 40.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 40.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 32.140				
Road Grade: 0.0%		Medium Trucks: 32.016				
Left View: -90.0 degrees		Heavy Trucks: 32.141				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	0.36	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-16.88	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	81.57	-20.83	2.78	-1.20	-5.56	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	65.2	63.4	57.4	66.0	66.6
Medium Trucks:	60.5	59.8	53.4	51.9	60.4	60.6
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	68.5	67.6	64.1	59.8	68.3	68.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	66	143	307
CNEL:	33	71	152	328

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Ridgeline Drive  
 Road Segment: Turtle Rock Drive to San Simeon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,883 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,228 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 35 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 40.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 40.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 32.140				
Road Grade: 0.0%		Medium Trucks: 32.016				
Left View: -90.0 degrees		Heavy Trucks: 32.141				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	0.03	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-17.21	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	81.57	-21.16	2.78	-1.20	-5.56	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.8	63.1	57.0	65.6	66.3
Medium Trucks:	60.1	59.5	53.1	51.6	60.0	60.3
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	68.1	67.3	63.8	59.4	68.0	68.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	136	292
CNEL:	31	67	145	312

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Rockfield Avenue  
 Road Segment: Whatney to McLaren

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 16,154 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,333 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.70	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.94	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.90	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.5	64.4	62.7	56.6	65.2	65.9
Medium Trucks:	59.3	58.6	52.2	50.7	59.2	59.4
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2
Vehicle Noise:	67.3	66.4	63.3	58.6	67.2	67.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	87	187	404
CNEL:	43	93	201	433



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Rockfield Avenue  
 Road Segment: Bake Parkway to Whatney

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,259 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 599 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.42	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.37	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.0	61.0	59.2	53.2	61.8	62.4	
Medium Trucks:	55.8	55.1	48.8	47.2	55.7	55.9	
Heavy Trucks:	56.6	56.0	47.0	48.3	56.6	56.7	
Vehicle Noise:	63.9	63.0	59.8	55.1	63.7	64.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	51	110	237
CNEL:	25	55	118	254

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Rockfield Avenue  
 Road Segment: Thomas to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,672 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 468 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-5.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-22.49	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-26.44	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.0	59.9	58.1	52.1	60.7	61.3
Medium Trucks:	54.7	54.1	47.7	46.1	54.6	54.8
Heavy Trucks:	55.6	55.0	45.9	47.2	55.5	55.7
Vehicle Noise:	62.8	61.9	58.7	54.1	62.6	63.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	43	93	201
CNEL:	22	46	100	216

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Roosevelt  
 Road Segment: Jeffrey Road to Vision

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 16,664 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,375 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.06	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.30	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.25	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.2	63.1	61.4	55.3	63.9	64.6	
Medium Trucks:	58.2	57.5	51.1	49.6	58.1	58.3	
Heavy Trucks:	59.5	58.9	49.9	51.1	59.5	59.6	
Vehicle Noise:	66.2	65.3	62.0	57.5	66.0	66.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	73	158	340
CNEL:	36	78	169	364

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Roosevelt  
 Road Segment: Yale Avenue to Van Buren

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,969 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	740 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	30.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	30.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 29.547				
Road Grade:	0.0%	Medium Trucks: 29.411				
Left View:	-90.0 degrees	Heavy Trucks: 29.547				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.75	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	77.72	-19.99	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	82.99	-23.94	3.32	-1.20	-5.77	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.8	63.1	57.0	65.6	66.2
Medium Trucks:	59.9	59.2	52.8	51.3	59.8	60.0
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	67.9	67.0	63.7	59.2	67.7	68.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	45	98	211
CNEL:	23	49	105	226

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Roosevelt  
 Road Segment: Vision to Bay Tree

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,775 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,301 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.30	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.53	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.49	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.0	62.9	61.1	55.1	63.7	64.3
Medium Trucks:	57.9	57.3	50.9	49.4	57.8	58.1
Heavy Trucks:	59.3	58.7	49.6	50.9	59.2	59.4
Vehicle Noise:	66.0	65.1	61.8	57.3	65.8	66.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	152	328
CNEL:	35	76	163	351

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Roosevelt  
 Road Segment: Nimitz to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,499 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,196 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.86	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.6	62.5	60.8	54.7	63.3	63.9	
Medium Trucks:	57.6	56.9	50.5	49.0	57.5	57.7	
Heavy Trucks:	58.9	58.3	49.3	50.5	58.9	59.0	
Vehicle Noise:	65.6	64.7	61.4	56.9	65.4	65.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	144	310
CNEL:	33	71	154	332

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Roosevelt  
 Road Segment: Tulip (Road C) to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,703 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,131 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.91	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.15	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.10	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.4	62.3	60.5	54.5	63.1	63.7
Medium Trucks:	57.3	56.7	50.3	48.8	57.2	57.4
Heavy Trucks:	58.6	58.1	49.0	50.3	58.6	58.8
Vehicle Noise:	65.4	64.5	61.2	56.6	65.2	65.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	298
CNEL:	32	69	148	319

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Royal Oak  
 Road Segment: Alton Parkway to Eaglecreek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,830 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	398 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	30.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	30.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 29.547				
Road Grade:	0.0%	Medium Trucks: 29.411				
Left View:	-90.0 degrees	Heavy Trucks: 29.547				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-4.86	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	75.75	-22.09	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	81.57	-26.05	3.32	-1.20	-5.77	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.6	60.5	58.7	52.7	61.3	61.9
Medium Trucks:	55.8	55.1	48.8	47.2	55.7	55.9
Heavy Trucks:	57.6	57.1	48.0	49.3	57.6	57.8
Vehicle Noise:	63.8	62.9	59.5	55.1	63.6	64.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	113
CNEL:	12	26	56	120



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Oak Canyon Drive to Burt Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 50,454 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,162 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.78	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.45	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.41	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.0	67.3	61.2	69.8	70.4
Medium Trucks:	63.7	63.0	56.6	55.1	63.5	63.8
Heavy Trucks:	64.1	63.5	54.4	55.7	64.1	64.2
Vehicle Noise:	71.8	70.9	67.8	63.0	71.6	72.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	107	231	498	1,072
CNEL:	115	248	535	1,152

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Irvine Center Drive to Oak Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 49,167 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,056 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.57	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.52	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	68.9	67.1	61.1	69.7	70.3
Medium Trucks:	63.5	62.9	56.5	55.0	63.4	63.7
Heavy Trucks:	64.0	63.4	54.3	55.6	63.9	64.1
Vehicle Noise:	71.7	70.8	67.7	62.9	71.5	71.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	105	227	489	1,054
CNEL:	113	244	525	1,132

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-405 NB Off-Ramp to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,532 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,756 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.34	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-13.90	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.86	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.6	71.5	69.8	63.7	72.3	72.9	
Medium Trucks:	66.2	65.5	59.1	57.6	66.0	66.3	
Heavy Trucks:	66.6	66.0	57.0	58.2	66.6	66.7	
Vehicle Noise:	74.3	73.4	70.3	65.5	74.1	74.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	242	522	1,125
CNEL:	121	260	561	1,209

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Burt Road to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 53,029 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,375 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.00	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.24	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.19	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.7	69.7	67.9	61.8	70.5	71.1	
Medium Trucks:	64.3	63.6	57.2	55.7	64.2	64.4	
Heavy Trucks:	64.7	64.1	55.1	56.3	64.7	64.8	
Vehicle Noise:	72.4	71.5	68.5	63.7	72.2	72.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	112	242	522	1,124
CNEL:	121	260	560	1,208

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Marine to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 60,688 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,007 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.59	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-12.65	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-16.61	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.7	71.6	69.9	63.8	72.4	73.0	
Medium Trucks:	66.2	65.6	59.2	57.7	66.1	66.4	
Heavy Trucks:	66.7	66.1	57.0	58.3	66.6	66.8	
Vehicle Noise:	74.4	73.5	70.4	65.6	74.2	74.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	190	409	881	1,899
CNEL:	204	440	947	2,040

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Trabuco Road to Towngate

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,085 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,307 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.79	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.45	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.41	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.3	60.2	68.8	69.4
Medium Trucks:	62.7	62.0	55.6	54.1	62.5	62.8
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	70.8	69.9	66.8	62.0	70.6	71.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	427	919
CNEL:	99	213	459	988

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Barranca Parkway to Waterworks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 38,043 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,139 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.56	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.68	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.64	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.9	67.8	66.0	60.0	68.6	69.2	
Medium Trucks:	62.4	61.8	55.4	53.8	62.3	62.5	
Heavy Trucks:	62.8	62.3	53.2	54.5	62.8	63.0	
Vehicle Noise:	70.6	69.6	66.6	61.8	70.4	70.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	191	412	888
CNEL:	95	206	443	954

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-5 SB Off-Ramp to Marine

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 50,509 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,167 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.79	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-13.45	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-17.40	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.9	70.8	69.1	63.0	71.6	72.2
Medium Trucks:	65.4	64.8	58.4	56.9	65.3	65.6
Heavy Trucks:	65.9	65.3	56.2	57.5	65.8	66.0
Vehicle Noise:	73.6	72.7	69.6	64.8	73.4	73.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	168	362	780	1,680
CNEL:	181	389	838	1,805



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Hospital to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,931 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,964 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.31	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.93	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.88	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.6	65.8	59.7	68.4	69.0
Medium Trucks:	62.2	61.5	55.1	53.6	62.1	62.3
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	70.3	69.4	66.4	61.6	70.1	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	184	397	855
CNEL:	92	198	426	918

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Nightmist to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 47,040 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,881 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.48	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-13.76	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-17.71	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.6	70.5	68.7	62.7	71.3	71.9
Medium Trucks:	65.1	64.5	58.1	56.6	65.0	65.3
Heavy Trucks:	65.6	65.0	55.9	57.2	65.5	65.7
Vehicle Noise:	73.3	72.4	69.3	64.5	73.1	73.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	160	345	744	1,602
CNEL:	172	371	799	1,722

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,399 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,920 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.25	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.99	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.95	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.4	68.7	62.6	71.2	71.8
Medium Trucks:	65.1	64.4	58.0	56.5	65.0	65.2
Heavy Trucks:	65.5	64.9	55.9	57.1	65.5	65.6
Vehicle Noise:	73.2	72.3	69.2	64.5	73.0	73.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	95	205	442	951
CNEL:	102	220	474	1,022

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-5 NB Off-Ramp to Nightmist

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,651 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,849 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.44	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-13.79	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-17.75	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.5	68.7	62.7	71.3	71.9
Medium Trucks:	65.1	64.4	58.1	56.5	65.0	65.2
Heavy Trucks:	65.5	64.9	55.9	57.1	65.5	65.6
Vehicle Noise:	73.2	72.3	69.3	64.5	73.0	73.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	159	343	740	1,594
CNEL:	171	369	795	1,712

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Towngate to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,490 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,845 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.13	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.11	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.06	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.4	65.6	59.6	68.2	68.8
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	70.1	69.2	66.2	61.4	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	179	386	832
CNEL:	89	193	415	894

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Waterworks to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 33,082 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,729 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.95	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.29	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.24	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.2	65.4	59.4	68.0	68.6	
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9	
Heavy Trucks:	62.2	61.7	52.6	53.9	62.2	62.3	
Vehicle Noise:	70.0	69.0	66.0	61.2	69.8	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	376	809
CNEL:	87	187	403	869

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Irvine Boulevard to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,874 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,475 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.72	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.96	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.92	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.2	66.2	64.4	58.4	67.0	67.6	
Medium Trucks:	60.8	60.1	53.8	52.2	60.7	60.9	
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3	
Vehicle Noise:	68.9	68.0	65.0	60.2	68.7	69.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	111	239	515
CNEL:	55	119	257	553

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Roosevelt to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,585 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,266 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.73	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-14.51	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-18.46	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.8	68.0	61.9	70.6	71.2
Medium Trucks:	64.4	63.7	57.4	55.8	64.3	64.5
Heavy Trucks:	64.8	64.2	55.2	56.4	64.8	64.9
Vehicle Noise:	72.5	71.6	68.6	63.8	72.3	72.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	308	663	1,428
CNEL:	153	331	712	1,535



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Alton Parkway to Hospital

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,774 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,704 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.91	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.33	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.28	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.6	65.8	59.7	68.4	69.0
Medium Trucks:	62.2	61.5	55.2	53.6	62.1	62.3
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	70.3	69.4	66.4	61.6	70.1	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	176	379	815
CNEL:	88	189	407	876

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Sand Canyon/Shady Canyon  
 Road Segment: Quail Hill Parkway to I-405 SB Ramps

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,802 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,964 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.52	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.72	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.67	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	67.0	60.9	69.5	70.1
Medium Trucks:	63.4	62.7	56.3	54.8	63.2	63.5
Heavy Trucks:	63.8	63.2	54.1	55.4	63.7	63.9
Vehicle Noise:	71.5	70.6	67.5	62.7	71.3	71.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	339	730
CNEL:	78	169	364	784

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Scientific Way  
 Road Segment: Irvine Center Drive to Wald

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1,635 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	135 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-9.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-26.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-30.75	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.5	51.4	49.7	43.6	52.2	52.8
Medium Trucks:	46.7	46.0	39.7	38.1	46.6	46.8
Heavy Trucks:	48.6	48.0	38.9	40.2	48.5	48.7
Vehicle Noise:	54.7	53.8	50.4	46.0	54.5	55.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	13	27	58
CNEL:	6	13	29	62

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Shady Canyon Drive  
 Road Segment: Culver Drive/Bonita Canyon Drive to Cloverfield

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,123 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 753 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.64	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-20.88	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-24.84	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.2	66.1	64.4	58.3	66.9	67.5	
Medium Trucks:	60.8	60.1	53.7	52.2	60.7	60.9	
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3	
Vehicle Noise:	68.9	68.0	64.9	60.1	68.7	69.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	66	142	307
CNEL:	33	71	153	330

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Shady Canyon Drive  
 Road Segment: Bommer Canyon Road to Sunnyhill

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,752 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	640 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	50.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 42.814				
Road Grade:	0.0%	Medium Trucks: 42.720				
Left View:	-90.0 degrees	Heavy Trucks: 42.814				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.35	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-21.59	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.54	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.5	62.7	56.7	65.3	65.9
Medium Trucks:	59.1	58.5	52.1	50.6	59.0	59.2
Heavy Trucks:	59.5	59.0	49.9	51.2	59.5	59.7
Vehicle Noise:	67.3	66.3	63.3	58.5	67.1	67.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	148	318
CNEL:	34	74	159	342

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Skyhawk  
 Road Segment: Great Park Boulevard to Marine Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,666 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 880 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	0.05	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-17.19	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-21.15	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	56.5	55.5	53.7	47.7	56.3	56.9	
Medium Trucks:	51.4	50.7	44.3	42.8	51.2	51.5	
Heavy Trucks:	54.6	54.0	45.0	46.2	54.6	54.7	
Vehicle Noise:	59.4	58.6	54.7	50.8	59.3	59.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	26	56	120
CNEL:	13	27	59	128

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Southwood  
 Road Segment: Yale Avenue to Colt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,031 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 250 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-6.88	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-24.12	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-28.07	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.1	57.0	55.2	49.2	57.8	58.4
Medium Trucks:	52.3	51.6	45.3	43.7	52.2	52.4
Heavy Trucks:	54.1	53.5	44.5	45.8	54.1	54.2
Vehicle Noise:	60.3	59.4	56.0	51.6	60.1	60.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	18	38	82
CNEL:	9	19	41	88

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Southwood  
 Road Segment: Challenger to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,798 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 231 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-7.23	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-24.47	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-28.42	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.7	56.6	54.9	48.8	57.4	58.1
Medium Trucks:	51.9	51.3	44.9	43.4	51.8	52.1
Heavy Trucks:	53.8	53.2	44.2	45.4	53.8	53.9
Vehicle Noise:	59.9	59.1	55.6	51.2	59.8	60.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	36	78
CNEL:	8	18	39	83



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Spectrum Center Drive (Fortune)  
 Road Segment: Pacifica to Quassar Drive (Spectrum )

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,786 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 972 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.31	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.55	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.51	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.2	58.1	56.4	50.3	58.9	59.5
Medium Trucks:	53.7	53.0	46.7	45.1	53.6	53.8
Heavy Trucks:	56.2	55.6	46.5	47.8	56.2	56.3
Vehicle Noise:	61.7	60.8	57.2	53.0	61.5	61.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	79	170
CNEL:	18	39	84	181

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Spectrum Center Drive (Fortune)  
 Road Segment: Quassar Drive (Spectrum ) to Gatewayb

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,116 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,082 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	0.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.09	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.04	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.7	58.6	56.8	50.8	59.4	60.0
Medium Trucks:	54.2	53.5	47.1	45.6	54.0	54.3
Heavy Trucks:	56.6	56.0	47.0	48.3	56.6	56.7
Vehicle Noise:	62.2	61.3	57.7	53.5	62.0	62.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	85	183
CNEL:	19	42	90	195

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Sunnyhill  
 Road Segment: Shady Canyon Drive to Turtle Rock Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,602 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	545 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-2.04	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-19.28	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-23.23	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.5	53.4	51.6	45.6	54.2	54.8
Medium Trucks:	49.3	48.6	42.2	40.7	49.2	49.4
Heavy Trucks:	52.5	51.9	42.9	44.1	52.5	52.6
Vehicle Noise:	57.3	56.5	52.6	48.7	57.2	57.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	41	87
CNEL:	9	20	43	93

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Technology Drive  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,036 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,643 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.97	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.92	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.7	59.6	68.2	68.8
Medium Trucks:	62.2	61.6	55.2	53.7	62.1	62.4
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	70.3	69.4	66.3	61.6	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	137	296	637
CNEL:	68	147	317	684

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred	Project Name: Irvine GP
Road Name: Technology Drive	Job Number: 15937
Road Segment: Old Laguna Canyon Road to I-5/SR-133 Undercrossing	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,487 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,938 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.92	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.32	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.27	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.1	64.3	58.3	66.9	67.5
Medium Trucks:	60.9	60.2	53.9	52.3	60.8	61.0
Heavy Trucks:	61.7	61.1	52.1	53.4	61.7	61.8
Vehicle Noise:	69.0	68.1	64.9	60.2	68.8	69.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	112	241	518
CNEL:	56	120	258	556

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Technology Drive  
 Road Segment: I-5/SR-133 to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,568 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,862 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.75	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.49	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.45	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	65.9	64.1	58.1	66.7	67.3
Medium Trucks:	60.7	60.0	53.7	52.1	60.6	60.8
Heavy Trucks:	61.6	61.0	51.9	53.2	61.5	61.7
Vehicle Noise:	68.8	67.9	64.7	60.1	68.6	69.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	109	234	505
CNEL:	54	117	251	541

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Technology Drive  
 Road Segment: Ada to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	5,528 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	456 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-5.36	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-22.60	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-26.55	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.9	59.8	58.0	52.0	60.6	61.2
Medium Trucks:	54.6	53.9	47.6	46.0	54.5	54.7
Heavy Trucks:	55.5	54.9	45.8	47.1	55.4	55.6
Vehicle Noise:	62.7	61.8	58.6	54.0	62.5	63.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	43	92	198
CNEL:	21	46	98	212

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Toledo Way  
 Road Segment: Bake Parkway to City Limits

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,905 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 652 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-21.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-25.46	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.7	62.6	60.9	54.8	63.4	64.0	
Medium Trucks:	57.3	56.6	50.2	48.7	57.1	57.4	
Heavy Trucks:	57.7	57.1	48.1	49.3	57.7	57.8	
Vehicle Noise:	65.4	64.5	61.4	56.6	65.2	65.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	139	299
CNEL:	32	69	149	321



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Toledo Way  
 Road Segment: Goodyear to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,324 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 522 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.47	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.43	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.7	61.7	59.9	53.8	62.5	63.1	
Medium Trucks:	56.3	55.6	49.3	47.7	56.2	56.4	
Heavy Trucks:	56.7	56.1	47.1	48.3	56.7	56.8	
Vehicle Noise:	64.4	63.5	60.5	55.7	64.2	64.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	55	119	257
CNEL:	28	60	128	277

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Toledo Way  
 Road Segment: Alton Parkway to Parker

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,838 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 482 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.58	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.82	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.78	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.4	61.3	59.5	53.5	62.1	62.7	
Medium Trucks:	55.9	55.3	48.9	47.4	55.8	56.1	
Heavy Trucks:	56.4	55.8	46.7	48.0	56.3	56.5	
Vehicle Noise:	64.1	63.2	60.1	55.3	63.9	64.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	53	113	244
CNEL:	26	56	122	262

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Trabuco Road  
 Road Segment: Keystone to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,475 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,194 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.42	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.37	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.0	64.0	62.2	56.2	64.8	65.4	
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9	
Heavy Trucks:	59.6	59.0	50.0	51.3	59.6	59.7	
Vehicle Noise:	66.9	66.0	62.8	58.1	66.7	67.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	174	375
CNEL:	40	87	187	403

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Trabuco Road  
 Road Segment: Jeffrey Road to Keystone

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,713 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,131 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.42	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.61	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.8	63.7	62.0	55.9	64.5	65.1
Medium Trucks:	58.6	57.9	51.5	50.0	58.4	58.7
Heavy Trucks:	59.4	58.8	49.8	51.0	59.4	59.5
Vehicle Noise:	66.6	65.7	62.6	57.9	66.4	66.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	168	362
CNEL:	39	84	180	388

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Trabuco Road  
 Road Segment: Culver Drive to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,214 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,090 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.58	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.81	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.77	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.6	61.8	55.8	64.4	65.0
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5
Heavy Trucks:	59.2	58.6	49.6	50.9	59.2	59.3
Vehicle Noise:	66.5	65.6	62.4	57.7	66.3	66.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	164	353
CNEL:	38	82	176	379

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Trabuco Road  
 Road Segment: Monroe to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,866 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,061 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.69	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.93	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.89	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.5	63.5	61.7	55.6	64.3	64.9	
Medium Trucks:	58.3	57.6	51.2	49.7	58.2	58.4	
Heavy Trucks:	59.1	58.5	49.5	50.7	59.1	59.2	
Vehicle Noise:	66.4	65.5	62.3	57.6	66.2	66.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	75	161	347
CNEL:	37	80	173	372

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Trabuco Road  
 Road Segment: I-5 NB Off-Ramp to Monroe

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,616 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,041 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.78	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.02	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.97	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.4	61.6	55.6	64.2	64.8
Medium Trucks:	58.2	57.5	51.2	49.6	58.1	58.3
Heavy Trucks:	59.0	58.4	49.4	50.7	59.0	59.1
Vehicle Noise:	66.3	65.4	62.2	57.5	66.1	66.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	342
CNEL:	37	79	170	367

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Trabuco Road  
 Road Segment: Yale Avenue to Remington

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,616 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 958 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.37	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.33	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.1	63.0	61.2	55.2	63.8	64.4	
Medium Trucks:	57.8	57.2	50.8	49.3	57.7	58.0	
Heavy Trucks:	58.7	58.1	49.1	50.3	58.7	58.8	
Vehicle Noise:	65.9	65.0	61.9	57.2	65.7	66.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	70	150	324
CNEL:	35	75	161	348



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Trabuco Road  
 Road Segment: Remington to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,077 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 914 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.58	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.54	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.9	62.8	61.0	55.0	63.6	64.2
Medium Trucks:	57.6	57.0	50.6	49.1	57.5	57.7
Heavy Trucks:	58.5	57.9	48.8	50.1	58.5	58.6
Vehicle Noise:	65.7	64.8	61.7	57.0	65.5	66.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	68	146	314
CNEL:	34	73	156	337

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Turtle Ridge Drive  
 Road Segment: Federation Way to Bonita Canyon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,017 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,734 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.44	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.76	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.6	63.8	57.8	66.4	67.0
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5
Heavy Trucks:	61.3	60.7	51.6	52.9	61.2	61.4
Vehicle Noise:	68.5	67.6	64.4	59.8	68.3	68.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	104	223	481
CNEL:	52	111	240	516

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Turtle Rock Drive  
 Road Segment: Ridgeline to Willowleaf

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,727 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 720 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.38	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-20.62	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-24.57	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.7	62.9	56.8	65.5	66.1
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	67.6	66.6	63.5	58.8	67.4	67.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	116	250
CNEL:	27	58	125	268

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Turtle Rock Drive  
 Road Segment: Silkwood to Sunnyhill

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,572 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 707 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.46	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-20.69	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-24.65	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.6	64.6	62.8	56.8	65.4	66.0	
Medium Trucks:	59.4	58.7	52.4	50.8	59.3	59.5	
Heavy Trucks:	60.2	59.7	50.6	51.9	60.2	60.3	
Vehicle Noise:	67.5	66.6	63.4	58.7	67.3	67.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	53	115	247
CNEL:	27	57	123	265

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Turtle Rock Drive  
 Road Segment: Canyon Park to Ridgeline

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,206 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	595 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.21	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-21.45	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-25.40	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	63.8	62.1	56.0	64.6	65.2
Medium Trucks:	58.7	58.0	51.6	50.1	58.5	58.8
Heavy Trucks:	59.5	58.9	49.9	51.1	59.5	59.6
Vehicle Noise:	66.7	65.8	62.7	58.0	66.5	67.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	102	220
CNEL:	24	51	110	236

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Turtle Rock Drive  
 Road Segment: Sunnyhill to Southernwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,588 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	296 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-7.24	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-24.48	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-28.43	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	60.8	59.0	53.0	61.6	62.2
Medium Trucks:	55.6	55.0	48.6	47.0	55.5	55.7
Heavy Trucks:	56.5	55.9	46.8	48.1	56.4	56.6
Vehicle Noise:	63.7	62.8	59.6	55.0	63.5	64.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	30	64	138
CNEL:	15	32	69	148

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Turtle Rock Drive  
 Road Segment: Campus Drive to Hillgate

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,125 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	588 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.45	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.0	60.9	59.1	53.1	61.7	62.3
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8
Heavy Trucks:	56.6	56.0	46.9	48.2	56.5	56.7
Vehicle Noise:	63.8	62.9	59.7	55.1	63.6	64.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	109	234
CNEL:	25	54	116	251

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Turtle Rock Drive  
 Road Segment: Paseo Segovia to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,066 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 335 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 32.140 Medium Trucks: 32.016 Heavy Trucks: 32.141																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-6.69	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-23.93	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	84.25	-27.89	2.78	-1.20	-5.56	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.3	62.3	60.5	54.5	63.1	63.7	
Medium Trucks:	57.1	56.4	50.1	48.5	57.0	57.2	
Heavy Trucks:	57.9	57.4	48.3	49.6	57.9	58.0	
Vehicle Noise:	65.2	64.3	61.1	56.4	65.0	65.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	40	86	185
CNEL:	20	43	92	199



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: University Drive  
 Road Segment: Golden Glow to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 42,194 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,481 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.19	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.0	69.9	68.1	62.1	70.7	71.3	
Medium Trucks:	64.5	63.9	57.5	56.0	64.4	64.6	
Heavy Trucks:	64.9	64.4	55.3	56.6	64.9	65.1	
Vehicle Noise:	72.7	71.7	68.7	63.9	72.5	72.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	197	423	912
CNEL:	98	211	455	980

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: University Drive  
 Road Segment: Ridgeline to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 51,836 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,276 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.90	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.34	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-17.29	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	69.5	67.7	61.7	70.3	70.9
Medium Trucks:	64.1	63.5	57.1	55.6	64.0	64.3
Heavy Trucks:	64.6	64.0	54.9	56.2	64.5	64.7
Vehicle Noise:	72.3	71.3	68.3	63.5	72.1	72.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	103	222	478	1,030
CNEL:	111	239	514	1,107

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: University Drive  
 Road Segment: Culver Drive to Golden Glow

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 41,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,383 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.88	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.31	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.8	68.0	62.0	70.6	71.2
Medium Trucks:	64.4	63.7	57.4	55.8	64.3	64.5
Heavy Trucks:	64.8	64.2	55.2	56.4	64.8	64.9
Vehicle Noise:	72.5	71.6	68.6	63.8	72.3	72.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	193	415	895
CNEL:	96	207	446	962

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: University Drive  
 Road Segment: Yale Avenue to Ridgeline

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,567 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,017 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.39	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.85	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.81	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.3	69.3	67.5	61.5	70.1	70.7	
Medium Trucks:	63.9	63.2	56.9	55.3	63.8	64.0	
Heavy Trucks:	64.3	63.7	54.7	56.0	64.3	64.4	
Vehicle Noise:	72.0	71.1	68.1	63.3	71.8	72.3	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	179	385	829
CNEL:	89	192	414	891

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: University Drive  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 58,027 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,787 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.39	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-12.85	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-16.80	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.6	67.9	61.8	70.4	71.0
Medium Trucks:	64.3	63.6	57.2	55.7	64.1	64.4
Heavy Trucks:	64.7	64.1	55.1	56.3	64.7	64.8
Vehicle Noise:	72.4	71.5	68.4	63.6	72.2	72.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	118	254	546	1,177
CNEL:	126	272	587	1,264

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: University Drive  
 Road Segment: Mesa to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,446 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,667 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.23	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.00	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.96	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.5	71.4	69.7	63.6	72.2	72.8	
Medium Trucks:	66.1	65.4	59.0	57.5	65.9	66.2	
Heavy Trucks:	66.5	65.9	56.9	58.1	66.5	66.6	
Vehicle Noise:	74.2	73.3	70.2	65.4	74.0	74.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	111	239	514	1,107
CNEL:	119	256	552	1,189

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred	Project Name: Irvine GP
Road Name: University Drive	Job Number: 15937
Road Segment: MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS															
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>															
Average Daily Traffic (Adt): 43,634 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,600 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15															
<b>Site Data</b>	<b>Vehicle Mix</b>															
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border: none;"> <tr> <td style="text-align: right;">Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td style="text-align: right;">Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td style="text-align: right;">Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </table>	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Autos:	77.5%	12.9%	9.6%	97.42%												
Medium Trucks:	84.8%	4.9%	10.3%	1.84%												
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%												
	<b>Noise Source Elevations (in feet)</b>															
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0															
	<b>Lane Equivalent Distance (in feet)</b>															
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329															

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.15	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.08	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.04	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.4	71.3	69.6	63.5	72.2	72.8	
Medium Trucks:	66.0	65.3	58.9	57.4	65.9	66.1	
Heavy Trucks:	66.4	65.8	56.8	58.0	66.4	66.5	
Vehicle Noise:	74.1	73.2	70.1	65.4	73.9	74.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	109	236	508	1,094
CNEL:	117	253	545	1,175

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: University Drive  
 Road Segment: California Avenue to Mesa

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 43,321 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,574 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.12	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.12	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.07	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.4	71.3	69.6	63.5	72.1	72.7
Medium Trucks:	66.0	65.3	58.9	57.4	65.8	66.1
Heavy Trucks:	66.4	65.8	56.7	58.0	66.3	66.5
Vehicle Noise:	74.1	73.2	70.1	65.3	73.9	74.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	109	234	505	1,088
CNEL:	117	252	543	1,169



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: University Drive  
 Road Segment: Campus Drive to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 36,432 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,006 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.37	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.87	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.82	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.8	59.8	68.4	69.0	
Medium Trucks:	62.2	61.6	55.2	53.7	62.1	62.4	
Heavy Trucks:	62.7	62.1	53.0	54.3	62.6	62.8	
Vehicle Noise:	70.4	69.5	66.4	61.6	70.2	70.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	186	400	863
CNEL:	93	200	430	927

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred Project Name: Irvine GP  
 Road Name: University Drive Job Number: 15937  
 Road Segment: SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,332 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,595 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 42.814				
Road Grade: 0.0%	Medium Trucks: 42.720				
Left View: -90.0 degrees	Heavy Trucks: 42.814				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.38	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-17.62	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-21.58	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.5	68.5	66.7	60.6	69.3	69.9
Medium Trucks:	63.1	62.4	56.1	54.5	63.0	63.2
Heavy Trucks:	63.5	62.9	53.9	55.1	63.5	63.6
Vehicle Noise:	71.2	70.3	67.3	62.5	71.0	71.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	126	272	586
CNEL:	63	136	292	629

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred Project Name: Irvine GP  
 Road Name: University Drive Job Number: 15937  
 Road Segment: SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,489 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,680 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float:right">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.87	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.37	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.32	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.1	65.3	59.3	67.9	68.5
Medium Trucks:	61.7	61.1	54.7	53.2	61.6	61.9
Heavy Trucks:	62.2	61.6	52.5	53.8	62.1	62.3
Vehicle Noise:	69.9	69.0	65.9	61.1	69.7	70.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	172	371	799
CNEL:	86	185	399	859

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: University Drive  
 Road Segment: San Joaquin to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,608 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,443 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.47	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.77	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.72	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	66.7	64.9	58.9	67.5	68.1	
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5	
Heavy Trucks:	61.8	61.2	52.1	53.4	61.7	61.9	
Vehicle Noise:	69.5	68.6	65.5	60.7	69.3	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	349	751
CNEL:	81	174	375	807

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: University Drive  
 Road Segment: Harvard Avenue to San Joaquin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,483 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,432 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.45	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.79	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.74	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	66.7	64.9	58.9	67.5	68.1	
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4	
Heavy Trucks:	61.7	61.2	52.1	53.4	61.7	61.8	
Vehicle Noise:	69.5	68.5	65.5	60.7	69.3	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	348	749
CNEL:	80	173	374	805

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Valley Oak Drive  
 Road Segment: Hawkcreek to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,484 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,112 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.95	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.18	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.14	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.0	64.9	63.2	57.1	65.7	66.4	
Medium Trucks:	59.6	58.9	52.5	51.0	59.5	59.7	
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1	
Vehicle Noise:	67.7	66.8	63.7	59.0	67.5	68.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	92	198	426
CNEL:	46	99	213	458

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Valley Oak Drive  
 Road Segment: Irvine Center Drive to Oak Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,004 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 908 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.83	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-20.07	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-24.02	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.0	64.3	58.2	66.8	67.4
Medium Trucks:	60.7	60.0	53.6	52.1	60.5	60.8
Heavy Trucks:	61.1	60.5	51.4	52.7	61.0	61.2
Vehicle Noise:	68.8	67.9	64.8	60.0	68.6	69.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	87	187	402
CNEL:	43	93	201	432

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Valley Oak Drive  
 Road Segment: Barranca Parkway to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,125 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 835 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-20.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-24.38	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.8	63.7	61.9	55.9	64.5	65.1
Medium Trucks:	58.3	57.7	51.3	49.8	58.2	58.4
Heavy Trucks:	58.7	58.2	49.1	50.4	58.7	58.9
Vehicle Noise:	66.5	65.5	62.5	57.7	66.3	66.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	164	352
CNEL:	38	82	176	378



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Valley Oak Drive  
 Road Segment: Alton Parkway to Hawkcreek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,517 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 538 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.30	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.9	61.8	60.0	54.0	62.6	63.2
Medium Trucks:	56.4	55.7	49.4	47.8	56.3	56.5
Heavy Trucks:	56.8	56.2	47.2	48.5	56.8	56.9
Vehicle Noise:	64.5	63.6	60.6	55.8	64.4	64.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	57	122	263
CNEL:	28	61	131	282

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Marriott to Morse Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,440 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,841 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.58	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.61	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	66.0	59.9	68.5	69.1
Medium Trucks:	62.6	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	70.6	69.7	66.6	61.9	70.4	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	310	669
CNEL:	72	155	333	717

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Michelson Drive to Quartz

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 33,121 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,732 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.41	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.82	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.78	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.6	65.8	59.7	68.4	69.0
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5
Heavy Trucks:	63.2	62.6	53.6	54.9	63.2	63.3
Vehicle Noise:	70.5	69.6	66.4	61.7	70.3	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	140	302	652
CNEL:	70	151	324	699

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,658 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,694 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.35	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.88	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.84	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.7	59.7	68.3	68.9
Medium Trucks:	62.3	61.7	55.3	53.7	62.2	62.4
Heavy Trucks:	63.2	62.6	53.5	54.8	63.1	63.3
Vehicle Noise:	70.4	69.5	66.3	61.7	70.2	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	139	300	646
CNEL:	69	149	321	692

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,666 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,355 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.31	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.93	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	84.25	-17.89	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.2	65.4	59.3	68.0	68.6
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.8	62.2	53.2	54.5	62.8	62.9
Vehicle Noise:	70.1	69.2	66.0	61.3	69.9	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	342	736
CNEL:	79	170	366	789

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Main Street to Anchor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,991 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,639 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.97	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.93	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.6	59.6	68.2	68.8
Medium Trucks:	62.2	61.6	55.2	53.7	62.1	62.4
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	70.3	69.4	66.3	61.6	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	137	296	637
CNEL:	68	147	317	683

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Anchor to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 30,891 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,549 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.08	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.3	65.5	59.4	68.1	68.7	
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2	
Heavy Trucks:	62.9	62.3	53.3	54.6	62.9	63.0	
Vehicle Noise:	70.2	69.3	66.1	61.4	70.0	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	134	289	622
CNEL:	67	144	310	667

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Morse to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,382 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,424 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.89	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.30	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.3	59.2	67.8	68.5
Medium Trucks:	61.9	61.2	54.8	53.3	61.7	62.0
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	69.9	69.0	65.9	61.2	69.8	70.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	279	602
CNEL:	65	139	300	645



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Martin to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,189 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,078 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.01	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.97	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.4	64.6	58.6	67.2	67.8
Medium Trucks:	61.2	60.5	54.2	52.6	61.1	61.3
Heavy Trucks:	62.0	61.5	52.4	53.7	62.0	62.1
Vehicle Noise:	69.3	68.4	65.2	60.5	69.1	69.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	117	252	543
CNEL:	58	125	270	582

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Campus Drive to Martin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,686 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,037 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.06	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.4	66.3	64.5	58.5	67.1	67.7	
Medium Trucks:	61.1	60.4	54.1	52.5	61.0	61.2	
Heavy Trucks:	62.0	61.4	52.3	53.6	61.9	62.1	
Vehicle Noise:	69.2	68.3	65.1	60.5	69.0	69.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	115	249	536
CNEL:	57	124	267	575

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Dupont Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,689 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,037 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.06	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.3	64.5	58.5	67.1	67.7
Medium Trucks:	61.1	60.4	54.1	52.5	61.0	61.2
Heavy Trucks:	62.0	61.4	52.3	53.6	61.9	62.1
Vehicle Noise:	69.2	68.3	65.1	60.5	69.0	69.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	115	249	536
CNEL:	57	124	267	575

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Jeffrey Road to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,097 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,813 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.70	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.65	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.8	67.7	65.9	59.9	68.5	69.1	
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6	
Heavy Trucks:	63.4	62.8	53.7	55.0	63.3	63.5	
Vehicle Noise:	70.6	69.7	66.5	61.9	70.4	70.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	143	308	664
CNEL:	71	154	331	713

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Myford Road to Jamboree Road SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,555 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,861 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.75	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.49	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.45	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	65.9	64.1	58.1	66.7	67.3
Medium Trucks:	60.7	60.0	53.7	52.1	60.6	60.8
Heavy Trucks:	61.6	61.0	51.9	53.2	61.5	61.7
Vehicle Noise:	68.8	67.9	64.7	60.1	68.6	69.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	109	234	504
CNEL:	54	117	251	541

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Walnut Avenue  
 Road Segment: The Mall Street to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,739 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,711 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.38	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.86	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.81	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.5	63.8	57.7	66.3	66.9
Medium Trucks:	60.4	59.7	53.3	51.8	60.2	60.5
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	68.4	67.5	64.4	59.7	68.2	68.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	221	477
CNEL:	51	110	237	512

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Harvard Avenue to The Mall Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,671 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,705 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.83	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.5	63.8	57.7	66.3	66.9
Medium Trucks:	60.3	59.7	53.3	51.8	60.2	60.5
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	68.4	67.5	64.4	59.7	68.2	68.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	221	476
CNEL:	51	110	237	510

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Franciscan Street to Ravenwood Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,169 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,581 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.04	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.20	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.15	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.2	63.4	57.4	66.0	66.6
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1
Heavy Trucks:	60.9	60.3	51.2	52.5	60.8	61.0
Vehicle Noise:	68.1	67.2	64.0	59.4	67.9	68.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	97	210	453
CNEL:	49	105	225	485



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Ravenwood Street to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,154 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,580 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.04	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.20	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.16	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.2	63.4	57.4	66.0	66.6
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1
Heavy Trucks:	60.8	60.3	51.2	52.5	60.8	61.0
Vehicle Noise:	68.1	67.2	64.0	59.4	67.9	68.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	97	210	452
CNEL:	49	105	225	485

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Culver Drive to Franciscan Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	18,884 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	1,558 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.03	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.22	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	65.1	63.4	57.3	65.9	66.5
Medium Trucks:	59.9	59.3	52.9	51.4	59.8	60.1
Heavy Trucks:	60.8	60.2	51.2	52.4	60.8	60.9
Vehicle Noise:	68.0	67.1	64.0	59.3	67.8	68.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	97	208	448
CNEL:	48	104	223	481

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Peters Canyon Road to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,274 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,085 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.24	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.00	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.95	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.8	64.7	63.0	56.9	65.5	66.1
Medium Trucks:	59.6	58.9	52.5	51.0	59.4	59.7
Heavy Trucks:	60.4	59.8	50.8	52.0	60.4	60.5
Vehicle Noise:	67.6	66.7	63.6	58.9	67.4	67.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	122	263	568
CNEL:	61	131	283	609

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred Project Name: Irvine GP  
 Road Name: Walnut Avenue Job Number: 15937  
 Road Segment: Jamboree Road NB Off-Ramp to Peters Canyon Road

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,408 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,014 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>  <b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
	VehicleType	Day	Evening	Night	Daily																
	Autos:	77.5%	12.9%	9.6%	97.42%																
	Medium Trucks:	84.8%	4.9%	10.3%	1.84%																
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Noise Source Elevations (in feet)</b>																					
Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float:right">Grade Adjustment: 0.0</span>																					
<b>Lane Equivalent Distance (in feet)</b>																					
Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.09	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.15	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.11	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.6	62.8	56.8	65.4	66.0
Medium Trucks:	59.4	58.7	52.4	50.8	59.3	59.5
Heavy Trucks:	60.2	59.7	50.6	51.9	60.2	60.4
Vehicle Noise:	67.5	66.6	63.4	58.8	67.3	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	119	257	554
CNEL:	59	128	276	595

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Yale Avenue to Kazan Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,408 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,189 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.20	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.44	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.39	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.0	64.0	62.2	56.1	64.8	65.4	
Medium Trucks:	58.8	58.1	51.7	50.2	58.7	58.9	
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7	
Vehicle Noise:	66.8	65.9	62.8	58.1	66.7	67.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	81	174	374
CNEL:	40	86	186	401

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Wisteria to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,301 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,180 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.47	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.43	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.0	63.9	62.2	56.1	64.7	65.3	
Medium Trucks:	58.7	58.1	51.7	50.2	58.6	58.9	
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7	
Vehicle Noise:	66.8	65.9	62.8	58.1	66.6	67.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	80	173	372
CNEL:	40	86	185	399

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred Project Name: Irvine GP  
 Road Name: Warner Avenue Job Number: 15937  
 Road Segment: Jamboree Road SB Off-ramp to Construction North

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,075 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,399 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos:	77.5%	12.9%	9.6%	97.42%
	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
	<b>Noise Source Elevations (in feet)</b>				
	Autos:	2.000			
	Medium Trucks:	4.000			
	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos:	57.786			
	Medium Trucks:	57.717			
	Heavy Trucks:	57.787			

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.85	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.35	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.2	59.2	67.8	68.4
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	62.7	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	69.9	69.0	65.8	61.2	69.7	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	277	597
CNEL:	64	138	297	641

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Warner Avenue  
 Road Segment: Construction North to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,183 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,665 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.93	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.5	65.4	63.6	57.6	66.2	66.8	
Medium Trucks:	60.2	59.6	53.2	51.7	60.1	60.4	
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2	
Vehicle Noise:	68.3	67.4	64.3	59.6	68.1	68.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	101	217	468
CNEL:	50	108	233	502



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Warner Avenue  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,998 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,155 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos:	77.5%	12.9%	9.6%	97.42%
	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
	<b>Noise Source Elevations (in feet)</b>				
	Autos:	2.000			
	Medium Trucks:	4.000			
	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos:	57.786			
	Medium Trucks:	57.717			
	Heavy Trucks:	57.787			

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.33	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.52	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.9	63.8	62.1	56.0	64.6	65.2	
Medium Trucks:	58.6	58.0	51.6	50.1	58.5	58.8	
Heavy Trucks:	59.5	58.9	49.9	51.1	59.5	59.6	
Vehicle Noise:	66.7	65.8	62.7	58.0	66.5	67.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	170	367
CNEL:	39	85	183	394

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Warner Avenue  
 Road Segment: Santa Ynez to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,117 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 917 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.33	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.52	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.9	62.8	61.1	55.0	63.6	64.2
Medium Trucks:	57.6	57.0	50.6	49.1	57.5	57.8
Heavy Trucks:	58.5	57.9	48.9	50.1	58.5	58.6
Vehicle Noise:	65.7	64.8	61.7	57.0	65.5	66.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	68	146	315
CNEL:	34	73	157	338

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Warner Avenue  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,312 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 851 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.65	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.89	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.85	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.6	62.5	60.7	54.7	63.3	63.9
Medium Trucks:	57.3	56.6	50.3	48.7	57.2	57.4
Heavy Trucks:	58.2	57.6	48.5	49.8	58.1	58.3
Vehicle Noise:	65.4	64.5	61.3	56.7	65.2	65.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	139	299
CNEL:	32	69	149	321

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: West Yale Loop  
 Road Segment: Alton Parkway to Blue Lake North

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,402 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 776 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.78	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.74	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.7	60.7	58.9	52.8	61.5	62.1	
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8	
Heavy Trucks:	57.0	56.4	47.4	48.6	57.0	57.1	
Vehicle Noise:	63.7	62.8	59.6	55.0	63.5	64.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	232
CNEL:	25	54	115	248

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: West Yale Loop  
 Road Segment: Eagle Run to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,077 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 749 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.70	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.93	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.89	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.6	60.5	58.7	52.7	61.3	61.9
Medium Trucks:	55.5	54.9	48.5	47.0	55.4	55.7
Heavy Trucks:	56.9	56.3	47.2	48.5	56.8	57.0
Vehicle Noise:	63.6	62.7	59.4	54.9	63.4	63.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	49	105	227
CNEL:	24	52	113	243

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: West Yale Loop  
 Road Segment: Thunder Run to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,148 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 755 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
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	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.86	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.6	60.5	58.8	52.7	61.3	61.9
Medium Trucks:	55.6	54.9	48.5	47.0	55.5	55.7
Heavy Trucks:	56.9	56.3	47.3	48.5	56.9	57.0
Vehicle Noise:	63.6	62.7	59.4	54.9	63.4	63.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	49	106	228
CNEL:	24	53	113	244

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: West Yale Loop  
 Road Segment: Main Street to Timber Run

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,350 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 606 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
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	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.61	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.85	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.81	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.7	59.6	57.8	51.8	60.4	61.0	
Medium Trucks:	54.6	54.0	47.6	46.0	54.5	54.7	
Heavy Trucks:	55.9	55.4	46.3	47.6	55.9	56.1	
Vehicle Noise:	62.7	61.8	58.5	53.9	62.5	62.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	42	91	197
CNEL:	21	45	98	211

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: West Yale Loop  
 Road Segment: Yale Avenue to Shorebird

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,270 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 600 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.85	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.6	59.5	57.8	51.7	60.3	60.9
Medium Trucks:	54.6	53.9	47.5	46.0	54.5	54.7
Heavy Trucks:	55.9	55.3	46.3	47.5	55.9	56.0
Vehicle Noise:	62.6	61.7	58.4	53.9	62.4	62.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	42	91	195
CNEL:	21	45	97	209



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: West Yale Loop  
 Road Segment: Warner Avenue to Stonecreek South

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,777 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 559 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.96	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.20	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.16	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.3	59.2	57.5	51.4	60.0	60.6	
Medium Trucks:	54.3	53.6	47.2	45.7	54.2	54.4	
Heavy Trucks:	55.6	55.0	46.0	47.2	55.6	55.7	
Vehicle Noise:	62.3	61.4	58.1	53.6	62.1	62.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	40	87	187
CNEL:	20	43	93	200

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: West Yale Loop  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,586 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 543 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.09	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.33	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.28	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.2	59.1	57.3	51.3	59.9	60.5	
Medium Trucks:	54.1	53.5	47.1	45.6	54.0	54.3	
Heavy Trucks:	55.5	54.9	45.8	47.1	55.4	55.6	
Vehicle Noise:	62.2	61.3	58.0	53.5	62.0	62.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	85	183
CNEL:	20	42	91	196

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: West Yale Loop  
 Road Segment: Stonecreek North to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,484 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 535 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.16	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.35	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.1	59.0	57.3	51.2	59.8	60.5
Medium Trucks:	54.1	53.4	47.0	45.5	54.0	54.2
Heavy Trucks:	55.4	54.8	45.8	47.0	55.4	55.5
Vehicle Noise:	62.1	61.2	57.9	53.4	61.9	62.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	84	181
CNEL:	19	42	90	194

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: West Yale Loop  
 Road Segment: Birdsong to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,405 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	528 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.40	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.1	59.0	57.2	51.2	59.8	60.4
Medium Trucks:	54.0	53.4	47.0	45.5	53.9	54.1
Heavy Trucks:	55.3	54.8	45.7	47.0	55.3	55.5
Vehicle Noise:	62.1	61.2	57.9	53.3	61.9	62.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	83	180
CNEL:	19	41	89	192

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Westwood  
 Road Segment: Yorktown to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,072 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	501 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-3.86	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-21.10	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-25.06	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.1	60.0	58.2	52.2	60.8	61.4
Medium Trucks:	55.3	54.6	48.3	46.7	55.2	55.4
Heavy Trucks:	57.1	56.6	47.5	48.8	57.1	57.3
Vehicle Noise:	63.3	62.4	59.0	54.6	63.1	63.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	13	28	61	130
CNEL:	14	30	65	139

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Westwood  
 Road Segment: Bryan Avenue to Leaf

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,762 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 310 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.94	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-23.18	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-27.14	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	59.0	57.9	56.2	50.1	58.7	59.3	
Medium Trucks:	53.2	52.6	46.2	44.6	53.1	53.3	
Heavy Trucks:	55.1	54.5	45.4	46.7	55.0	55.2	
Vehicle Noise:	61.2	60.3	56.9	52.5	61.0	61.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	20	44	95
CNEL:	10	22	47	101

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Yale Avenue  
 Road Segment: Deerfield Avenue to Winvale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,511 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 867 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	37.138			
Road Grade: 0.0%	Medium Trucks:	37.030			
Left View: -90.0 degrees	Heavy Trucks:	37.139			
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.57	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-19.81	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-23.76	1.83	-1.20	-5.60	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.5	65.5	63.7	57.6	66.3	66.9	
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4	
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2	
Vehicle Noise:	68.4	67.5	64.3	59.6	68.2	68.6	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	131	283
CNEL:	30	65	141	304

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Yale Avenue  
 Road Segment: Hicks Canyon Drive to Meadowood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,814 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 645 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.86	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-21.10	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-25.05	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.2	64.2	62.4	56.4	65.0	65.6	
Medium Trucks:	59.0	58.3	52.0	50.4	58.9	59.1	
Heavy Trucks:	59.8	59.2	50.2	51.5	59.8	59.9	
Vehicle Noise:	67.1	66.2	63.0	58.3	66.9	67.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	232
CNEL:	25	54	116	249



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Yale Avenue  
 Road Segment: Walnut Avenue to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,547 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,200 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 32.140 Medium Trucks: 32.016 Heavy Trucks: 32.141																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.16	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-18.40	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	84.25	-22.35	2.78	-1.20	-5.56	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	62.7	62.0	55.6	54.1	62.5	62.8
Heavy Trucks:	63.5	62.9	53.9	55.1	63.5	63.6
Vehicle Noise:	70.7	69.8	66.7	62.0	70.5	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	93	201	433
CNEL:	46	100	216	465

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Yale Avenue  
 Road Segment: Roosevelt to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,133 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,166 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.48	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	63.9	62.1	56.0	64.7	65.3
Medium Trucks:	58.7	58.0	51.7	50.1	58.6	58.8
Heavy Trucks:	59.5	58.9	49.9	51.2	59.5	59.6
Vehicle Noise:	66.8	65.9	62.7	58.0	66.6	67.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	80	171	369
CNEL:	40	85	184	396

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Yale Avenue  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,725 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,132 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.41	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.61	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.8	63.7	62.0	55.9	64.5	65.1	
Medium Trucks:	58.6	57.9	51.5	50.0	58.4	58.7	
Heavy Trucks:	59.4	58.8	49.8	51.0	59.4	59.5	
Vehicle Noise:	66.6	65.7	62.6	57.9	66.4	66.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	168	362
CNEL:	39	84	180	389

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Yale Avenue  
 Road Segment: West Yale Loop to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	11,926 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	984 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.22	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.1	61.4	55.3	63.9	64.5
Medium Trucks:	58.0	57.3	50.9	49.4	57.8	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.0	65.1	62.0	57.3	65.8	66.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	330
CNEL:	35	76	164	354

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Yale Avenue  
 Road Segment: Winvale Avenue to Karen Ann Lane

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,310 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 851 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.65	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.89	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.85	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.6	62.5	60.7	54.7	63.3	63.9	
Medium Trucks:	57.3	56.6	50.3	48.7	57.2	57.4	
Heavy Trucks:	58.2	57.6	48.5	49.8	58.1	58.3	
Vehicle Noise:	65.4	64.5	61.3	56.7	65.2	65.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	139	299
CNEL:	32	69	149	321

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Yale Avenue  
 Road Segment: Karen Ann Lane to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,310 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 851 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.65	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.89	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.85	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.6	62.5	60.7	54.7	63.3	63.9
Medium Trucks:	57.3	56.6	50.3	48.7	57.2	57.4
Heavy Trucks:	58.2	57.6	48.5	49.8	58.1	58.3
Vehicle Noise:	65.4	64.5	61.3	56.7	65.2	65.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	139	299
CNEL:	32	69	149	321

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Yale Avenue  
 Road Segment: Trabuco Road to Southwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,111 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 834 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.74	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.93	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.5	62.4	60.6	54.6	63.2	63.8	
Medium Trucks:	57.2	56.6	50.2	48.7	57.1	57.3	
Heavy Trucks:	58.1	57.5	48.5	49.7	58.1	58.2	
Vehicle Noise:	65.3	64.4	61.3	56.6	65.1	65.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	137	295
CNEL:	32	68	147	317

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Yale Avenue  
 Road Segment: Southwood to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,802 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 809 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.87	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.07	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.3	62.3	60.5	54.5	63.1	63.7	
Medium Trucks:	57.1	56.4	50.1	48.5	57.0	57.2	
Heavy Trucks:	57.9	57.4	48.3	49.6	57.9	58.0	
Vehicle Noise:	65.2	64.3	61.1	56.4	65.0	65.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	62	134	289
CNEL:	31	67	144	310



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Yale Avenue  
 Road Segment: Northwood to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,152 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 755 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.41	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.37	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.0	62.0	60.2	54.2	62.8	63.4	
Medium Trucks:	56.8	56.1	49.8	48.2	56.7	56.9	
Heavy Trucks:	57.6	57.1	48.0	49.3	57.6	57.8	
Vehicle Noise:	64.9	64.0	60.8	56.1	64.7	65.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	60	128	276
CNEL:	30	64	138	297

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Yale Avenue  
 Road Segment: Bryan Avenue to Monticello

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,918 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	736 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.48	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.9	61.9	60.1	54.0	62.7	63.3
Medium Trucks:	56.7	56.0	49.7	48.1	56.6	56.8
Heavy Trucks:	57.5	56.9	47.9	49.2	57.5	57.6
Vehicle Noise:	64.8	63.9	60.7	56.0	64.6	65.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	59	126	272
CNEL:	29	63	135	291

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Yale Avenue  
 Road Segment: Irvine Boulevard to Park Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,463 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 616 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.06	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.30	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.25	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.2	61.1	59.3	53.3	61.9	62.5	
Medium Trucks:	55.9	55.2	48.9	47.3	55.8	56.0	
Heavy Trucks:	56.8	56.2	47.1	48.4	56.7	56.9	
Vehicle Noise:	64.0	63.1	59.9	55.3	63.8	64.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	112	241
CNEL:	26	56	120	259

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Yale Avenue  
 Road Segment: University Drive to Royce

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 3,940 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 325 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 42.814				
Road Grade: 0.0%	Medium Trucks: 42.720				
Left View: -90.0 degrees	Heavy Trucks: 42.814				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-6.83	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	79.45	-24.07	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	84.25	-28.03	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.3	60.3	58.5	52.5	61.1	61.7
Medium Trucks:	55.1	54.4	48.1	46.5	55.0	55.2
Heavy Trucks:	55.9	55.3	46.3	47.6	55.9	56.0
Vehicle Noise:	63.2	62.3	59.1	54.4	63.0	63.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	79	170
CNEL:	18	39	85	183

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Yale Court  
 Road Segment: Arborwood to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,427 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 530 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-2.15	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-19.39	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-23.35	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	57.2	56.2	54.4	48.3	57.0	57.6	
Medium Trucks:	52.1	51.4	45.0	43.5	51.9	52.2	
Heavy Trucks:	55.3	54.7	45.6	46.9	55.2	55.4	
Vehicle Noise:	60.1	59.3	55.4	51.4	59.9	60.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	80
CNEL:	8	18	39	85

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Ada  
 Road Segment: Barranca Parway to Marine Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,050 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,902 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.35	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-15.89	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-19.84	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.4	65.7	59.6	68.2	68.8	
Medium Trucks:	62.5	61.8	55.4	53.9	62.4	62.6	
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9	
Vehicle Noise:	70.5	69.6	66.3	61.8	70.3	70.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	85	183	394
CNEL:	42	91	196	422

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Ada  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,284 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,581 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.68	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-14.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-18.52	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.9	65.9	64.1	58.1	66.7	67.3
Medium Trucks:	60.9	60.2	53.9	52.3	60.8	61.0
Heavy Trucks:	62.2	61.6	52.6	53.9	62.2	62.3
Vehicle Noise:	69.0	68.1	64.8	60.2	68.8	69.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	111	240	517
CNEL:	55	119	257	554

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Enterprise to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 76,734 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 6,331 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	5.61	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-11.63	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-15.59	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.9	70.8	69.1	63.0	71.7	72.3
Medium Trucks:	65.5	64.8	58.4	56.9	65.4	65.6
Heavy Trucks:	65.9	65.3	56.3	57.5	65.9	66.0
Vehicle Noise:	73.6	72.7	69.6	64.9	73.4	73.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	142	305	658	1,418
CNEL:	152	328	707	1,523



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: I-5 NB Off-Ramp to Technology Drive West

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 80,974 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 6,680 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	5.84	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-11.40	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-15.35	-2.29	-1.20	-5.23	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.6	71.5	69.7	63.7	72.3	72.9	
Medium Trucks:	66.1	65.4	59.1	57.5	66.0	66.2	
Heavy Trucks:	66.5	65.9	56.9	58.2	66.5	66.6	
Vehicle Noise:	74.3	73.3	70.3	65.5	74.1	74.5	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	149	321	692	1,490
CNEL:	160	345	743	1,601

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: East Yale Loop to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,275 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,663 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.84	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.35	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	67.0	60.9	69.5	70.1
Medium Trucks:	63.4	62.7	56.3	54.8	63.3	63.5
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9
Vehicle Noise:	71.5	70.6	67.5	62.8	71.3	71.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	164	354	763
CNEL:	82	177	380	820

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Gateway Boulevard to Enterprise

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 46,790 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,860 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.46	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.78	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.74	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.8	68.7	66.9	60.9	69.5	70.1	
Medium Trucks:	63.3	62.7	56.3	54.7	63.2	63.4	
Heavy Trucks:	63.7	63.2	54.1	55.4	63.7	63.9	
Vehicle Noise:	71.5	70.5	67.5	62.7	71.3	71.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	102	220	473	1,019
CNEL:	110	236	508	1,095

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Jeffrey Road to Royal Oak

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,682 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,119 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.85	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.34	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	66.0	59.9	68.5	69.2
Medium Trucks:	62.4	61.7	55.3	53.8	62.3	62.5
Heavy Trucks:	62.8	62.2	53.2	54.4	62.8	62.9
Vehicle Noise:	70.5	69.6	66.5	61.8	70.3	70.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	141	304	655
CNEL:	70	152	327	704

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Daimler Street to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,892 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,054 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.72	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.48	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.8	59.8	68.4	69.0	
Medium Trucks:	62.2	61.6	55.2	53.7	62.1	62.4	
Heavy Trucks:	62.7	62.1	53.0	54.3	62.6	62.8	
Vehicle Noise:	70.4	69.5	66.4	61.6	70.2	70.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	138	298	642
CNEL:	69	149	320	689

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,826 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,048 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.70	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.53	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.49	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.2	61.6	55.2	53.7	62.1	62.3
Heavy Trucks:	62.6	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	70.4	69.4	66.4	61.6	70.2	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	138	297	641
CNEL:	69	148	319	688

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: West Yale Loop to Lake Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,661 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,035 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.68	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.52	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.6	65.8	59.7	68.4	69.0
Medium Trucks:	62.2	61.5	55.2	53.6	62.1	62.3
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	70.3	69.4	66.4	61.6	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	137	296	638
CNEL:	69	148	318	685

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Technology Drive West to Ada

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 49,944 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,120 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.74	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.50	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.45	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	69.4	67.6	61.6	70.2	70.8
Medium Trucks:	64.0	63.3	57.0	55.4	63.9	64.1
Heavy Trucks:	64.4	63.9	54.8	56.1	64.4	64.5
Vehicle Noise:	72.2	71.2	68.2	63.4	72.0	72.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	108	233	501	1,080
CNEL:	116	250	539	1,160



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Creek Road to East Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,400 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,013 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.63	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.61	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.56	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	68.9
Medium Trucks:	62.2	61.5	55.1	53.6	62.0	62.3
Heavy Trucks:	62.6	62.0	52.9	54.2	62.6	62.7
Vehicle Noise:	70.3	69.4	66.3	61.5	70.1	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	294	633
CNEL:	68	147	316	680

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Red Hill Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,050 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,984 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.67	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.63	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.5	65.7	59.6	68.3	68.9
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	70.2	69.3	66.3	61.5	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	135	291	627
CNEL:	67	145	313	674

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Lake Road to Creek Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,143 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,909 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.40	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.84	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.79	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	61.9	61.3	54.9	53.3	61.8	62.0
Heavy Trucks:	62.3	61.8	52.7	54.0	62.3	62.4
Vehicle Noise:	70.1	69.1	66.1	61.3	69.9	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	284	611
CNEL:	66	141	305	657

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Telemetry to Banting

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,349 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,926 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.44	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.76	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	62.0	61.3	54.9	53.4	61.8	62.1
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	70.1	69.2	66.1	61.3	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	285	615
CNEL:	66	142	307	661

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Irvine Boulevard to Commercentre

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 38,497 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,176 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.61	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.63	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.58	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.9	67.9	66.1	60.0	68.7	69.3	
Medium Trucks:	62.5	61.8	55.4	53.9	62.4	62.6	
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0	
Vehicle Noise:	70.6	69.7	66.7	61.9	70.4	70.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	193	415	895
CNEL:	96	207	446	962

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Jenner to Telemetry

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,981 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,896 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.82	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.3	65.5	59.4	68.1	68.7
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	282	608
CNEL:	65	141	303	654

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Irvine Center Drive to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,393 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,250 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.48	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.0	68.0	66.2	60.1	68.8	69.4	
Medium Trucks:	62.6	61.9	55.5	54.0	62.5	62.7	
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1	
Vehicle Noise:	70.7	69.8	66.8	62.0	70.5	71.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	196	422	909
CNEL:	98	210	453	977

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Sand Canyon Avenue to Hospital

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,269 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,075 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.47	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.77	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.72	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.7	70.7	68.9	62.8	71.5	72.1	
Medium Trucks:	65.3	64.6	58.3	56.7	65.2	65.4	
Heavy Trucks:	65.7	65.1	56.1	57.3	65.7	65.8	
Vehicle Noise:	73.4	72.5	69.5	64.7	73.2	73.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	212	457	984
CNEL:	106	228	491	1,058



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Laguna Canyon Road to Jenner

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,495 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,856 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.96	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.92	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	67.2	65.4	59.4	68.0	68.6	
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9	
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3	
Vehicle Noise:	69.9	69.0	66.0	61.2	69.7	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	278	600
CNEL:	64	139	299	644

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred Project Name: Irvine GP  
 Road Name: Alton Parkway Job Number: 15937  
 Road Segment: Technology Drive East to Barranca Pkwy/Muirlands Blvd

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 38,222 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,153 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.58	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.66	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.62	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.8	66.1	60.0	68.6	69.2
Medium Trucks:	62.4	61.8	55.4	53.9	62.3	62.6
Heavy Trucks:	62.9	62.3	53.2	54.5	62.8	63.0
Vehicle Noise:	70.6	69.7	66.6	61.8	70.4	70.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	192	413	891
CNEL:	96	206	444	957

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Royal Oak to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,595 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,782 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.14	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.09	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.2	59.2	67.8	68.4
Medium Trucks:	61.6	61.0	54.6	53.0	61.5	61.7
Heavy Trucks:	62.0	61.5	52.4	53.7	62.0	62.1
Vehicle Noise:	69.8	68.8	65.8	61.0	69.6	70.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	126	271	584
CNEL:	63	135	291	627

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Banting to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,170 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,746 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.18	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	66.9	65.1	59.1	67.7	68.3
Medium Trucks:	61.5	60.9	54.5	53.0	61.4	61.7
Heavy Trucks:	62.0	61.4	52.3	53.6	61.9	62.1
Vehicle Noise:	69.7	68.7	65.7	60.9	69.5	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	124	267	576
CNEL:	62	133	287	619

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred	Project Name: Irvine GP
Road Name: Alton Parkway	Job Number: 15937
Road Segment: Barranca Pkwy/Muirlands Blvd to Jeronimo Road	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 33,780 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 2,787 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 50 mph																					
Near/Far Lane Distance: 78 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 84.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 84.0 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 74.458																				
Left View: -90.0 degrees	Medium Trucks: 74.404																				
Right View: 90.0 degrees	Heavy Trucks: 74.458																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.04	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.20	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.15	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0
Heavy Trucks:	62.3	61.7	52.7	54.0	62.3	62.4
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	381	820
CNEL:	88	190	409	881

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Ada to Technology Drive East

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,965 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,802 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.07	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.17	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.13	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.3	65.5	59.5	68.1	68.7	
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.1	
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5	
Vehicle Noise:	70.1	69.1	66.1	61.3	69.9	70.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	382	823
CNEL:	88	191	411	885

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,836 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,636 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.51	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.46	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.7	66.6	64.9	58.8	67.4	68.0	
Medium Trucks:	61.3	60.6	54.2	52.7	61.1	61.4	
Heavy Trucks:	61.7	61.1	52.0	53.3	61.7	61.8	
Vehicle Noise:	69.4	68.5	65.4	60.6	69.2	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	119	256	552
CNEL:	59	128	275	593

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Jeronimo Road to Hughes

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,395 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,590 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.72	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.51	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.47	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	67.0	65.2	59.1	67.8	68.4
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	69.7	68.8	65.8	61.0	69.5	70.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	168	363	781
CNEL:	84	181	390	839



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Hughes to Morgan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,715 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,451 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.49	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.75	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.71	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	65.0	58.9	67.5	68.1
Medium Trucks:	61.4	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	69.5	68.6	65.5	60.7	69.3	69.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	350	753
CNEL:	81	174	376	809

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Morgan to Toledo Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,095 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,070 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.75	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.49	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.44	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.0	64.2	58.2	66.8	67.4
Medium Trucks:	60.6	59.9	53.6	52.0	60.5	60.7
Heavy Trucks:	61.0	60.5	51.4	52.7	61.0	61.1
Vehicle Noise:	68.8	67.8	64.8	60.0	68.6	69.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	145	312	673
CNEL:	72	156	336	723

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: San Marino to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,692 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,120 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.85	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.38	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.34	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.1	64.3	58.3	66.9	67.5
Medium Trucks:	60.7	60.1	53.7	52.1	60.6	60.8
Heavy Trucks:	61.1	60.6	51.5	52.8	61.1	61.2
Vehicle Noise:	68.9	67.9	64.9	60.1	68.7	69.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	147	317	684
CNEL:	73	158	341	734

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Jamboree Road to Murphy Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,799 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,128 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.87	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.37	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.32	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.1	64.3	58.3	66.9	67.5
Medium Trucks:	60.7	60.1	53.7	52.2	60.6	60.9
Heavy Trucks:	61.2	60.6	51.5	52.8	61.1	61.3
Vehicle Noise:	68.9	68.0	64.9	60.1	68.7	69.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	148	318	685
CNEL:	74	159	342	736

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Hospital to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,005 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,063 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.74	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.50	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.46	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.0	68.9	67.2	61.1	69.7	70.3	
Medium Trucks:	63.6	62.9	56.5	55.0	63.4	63.7	
Heavy Trucks:	64.0	63.4	54.4	55.6	64.0	64.1	
Vehicle Noise:	71.7	70.8	67.7	62.9	71.5	72.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	163	350	754
CNEL:	81	175	376	811

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,016 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,981 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.56	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.68	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.63	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.8	67.0	60.9	69.6	70.2
Medium Trucks:	63.4	62.7	56.4	54.8	63.3	63.5
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9
Vehicle Noise:	71.5	70.6	67.6	62.8	71.3	71.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	158	341	734
CNEL:	79	170	366	789

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Murphy Avenue to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,679 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,036 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.68	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.56	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.52	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	65.9	64.2	58.1	66.7	67.3
Medium Trucks:	60.5	59.9	53.5	52.0	60.4	60.7
Heavy Trucks:	61.0	60.4	51.3	52.6	60.9	61.1
Vehicle Noise:	68.7	67.8	64.7	59.9	68.5	68.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	143	309	665
CNEL:	71	154	332	715

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Foster to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,362 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,927 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.44	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.80	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.75	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4
Heavy Trucks:	60.7	60.1	51.1	52.4	60.7	60.8
Vehicle Noise:	68.4	67.5	64.5	59.7	68.2	68.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	138	298	642
CNEL:	69	149	320	689



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Fairbanks to Foster

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,132 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,826 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.03	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.99	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.5	65.4	63.7	57.6	66.3	66.9	
Medium Trucks:	60.1	59.4	53.0	51.5	60.0	60.2	
Heavy Trucks:	60.5	59.9	50.9	52.1	60.5	60.6	
Vehicle Noise:	68.2	67.3	64.2	59.5	68.0	68.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	287	619
CNEL:	66	143	309	665

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Toledo Way to Bertea

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,840 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,802 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.05	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.4	63.6	57.6	66.2	66.8
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1
Heavy Trucks:	60.4	59.8	50.8	52.1	60.4	60.5
Vehicle Noise:	68.1	67.2	64.2	59.4	68.0	68.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	285	613
CNEL:	66	142	306	659

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Pacifica to Meridian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,898 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,889 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.35	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.88	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.84	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.8	60.7	69.4	70.0
Medium Trucks:	63.2	62.5	56.1	54.6	63.1	63.3
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7
Vehicle Noise:	71.3	70.4	67.3	62.6	71.1	71.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	153	330	711
CNEL:	76	165	355	764

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Bertea to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,315 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,758 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.04	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.20	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.15	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.3	65.3	63.5	57.5	66.1	66.7	
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0	
Heavy Trucks:	60.3	59.7	50.7	52.0	60.3	60.4	
Vehicle Noise:	68.0	67.1	64.1	59.3	67.8	68.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	280	604
CNEL:	65	140	301	648

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Meridian to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,652 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,704 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.09	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.33	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.29	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.2	65.1	63.4	57.3	66.0	66.6	
Medium Trucks:	59.8	59.1	52.7	51.2	59.7	59.9	
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3	
Vehicle Noise:	67.9	67.0	63.9	59.2	67.7	68.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	274	591
CNEL:	63	137	295	635

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Paseo Westpark to San Marino

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,780 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,714 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.07	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.31	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.26	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.2	65.2	63.4	57.4	66.0	66.6	
Medium Trucks:	59.8	59.1	52.8	51.2	59.7	59.9	
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3	
Vehicle Noise:	67.9	67.0	64.0	59.2	67.7	68.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	128	275	593
CNEL:	64	137	296	638

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,451 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,522 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.58	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.82	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.78	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.7	62.9	56.8	65.5	66.1
Medium Trucks:	59.3	58.6	52.3	50.7	59.2	59.4
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8
Vehicle Noise:	67.4	66.5	63.5	58.7	67.2	67.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	254	548
CNEL:	59	127	273	589

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Astor  
 Road Segment: Lynx to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,506 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,609 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 37.138				
Road Grade: 0.0%		Medium Trucks: 37.030				
Left View: -90.0 degrees		Heavy Trucks: 37.139				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	1.88	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-15.36	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-19.32	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.2	61.4	55.4	64.0	64.6
Medium Trucks:	58.8	58.1	51.7	50.2	58.7	58.9
Heavy Trucks:	61.2	60.7	51.6	52.9	61.2	61.3
Vehicle Noise:	66.8	65.9	62.3	58.1	66.6	67.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	48	103	222
CNEL:	24	51	110	237



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Astor  
 Road Segment: Cadence to Lynx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,820 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,223 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	0.68	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-16.56	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-20.51	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.1	62.0	60.2	54.2	62.8	63.4	
Medium Trucks:	57.6	56.9	50.5	49.0	57.5	57.7	
Heavy Trucks:	60.0	59.5	50.4	51.7	60.0	60.2	
Vehicle Noise:	65.6	64.7	61.1	56.9	65.4	65.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	40	86	185
CNEL:	20	43	92	197

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bake Parkway  
 Road Segment: I-5 NB Off-Ramp to Rockfield Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 95,791 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 7,903 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	6.57	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-10.67	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-14.62	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	74.7	73.6	71.8	65.8	74.4	75.0	
Medium Trucks:	68.2	67.6	61.2	59.7	68.1	68.3	
Heavy Trucks:	68.6	68.1	59.0	60.3	68.6	68.8	
Vehicle Noise:	76.4	75.4	72.4	67.6	76.2	76.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	257	555	1,195	2,574
CNEL:	277	596	1,284	2,766

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bake Parkway  
 Road Segment: Muirlands Boulevard to Jeronimo Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 61,823 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,100 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-12.57	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-16.53	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.0	69.9	68.1	62.1	70.7	71.3
Medium Trucks:	64.5	63.9	57.5	56.0	64.4	64.7
Heavy Trucks:	65.0	64.4	55.3	56.6	64.9	65.1
Vehicle Noise:	72.7	71.8	68.7	63.9	72.5	72.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	264	570	1,227
CNEL:	132	284	612	1,319

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bake Parkway  
 Road Segment: Rockfield Boulevard to Muirlands Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 66,605 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,495 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 56.593				
Road Grade: 0.0%	Medium Trucks: 56.522				
Left View: -90.0 degrees	Heavy Trucks: 56.593				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.99	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-12.25	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-16.20	-0.91	-1.20	-5.16	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.1	72.0	70.3	64.2	72.8	73.4	
Medium Trucks:	66.7	66.0	59.6	58.1	66.5	66.8	
Heavy Trucks:	67.1	66.5	57.4	58.7	67.0	67.2	
Vehicle Noise:	74.8	73.9	70.8	66.0	74.6	75.0	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	202	435	938	2,021
CNEL:	217	468	1,008	2,171

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Bake Parkway  
 Road Segment: Jeronimo Road to Toledo Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 49,866 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,114 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.73	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.50	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.46	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	69.0	67.2	61.2	69.8	70.4
Medium Trucks:	63.6	62.9	56.6	55.0	63.5	63.7
Heavy Trucks:	64.0	63.4	54.4	55.6	64.0	64.1
Vehicle Noise:	71.7	70.8	67.8	63.0	71.5	72.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	229	494	1,064
CNEL:	114	246	530	1,143

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bake Parkway  
 Road Segment: Toledo Way to Cromwell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 46,021 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,797 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.39	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.85	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.81	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.7	68.6	66.9	60.8	69.4	70.0	
Medium Trucks:	63.3	62.6	56.2	54.7	63.1	63.4	
Heavy Trucks:	63.7	63.1	54.0	55.3	63.7	63.8	
Vehicle Noise:	71.4	70.5	67.4	62.6	71.2	71.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	217	468	1,008
CNEL:	108	233	503	1,083

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Bake Parkway  
 Road Segment: Cromwell to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,675 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,768 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.35	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.89	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.84	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.8	60.8	69.4	70.0
Medium Trucks:	63.2	62.5	56.2	54.6	63.1	63.3
Heavy Trucks:	63.6	63.1	54.0	55.3	63.6	63.7
Vehicle Noise:	71.4	70.4	67.4	62.6	71.2	71.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	466	1,003
CNEL:	108	232	500	1,078

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Bake Parkway  
 Road Segment: Research Drive to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,545 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,355 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.31	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.93	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.88	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.6	64.8	58.7	67.4	68.0
Medium Trucks:	61.2	60.5	54.1	52.6	61.1	61.3
Heavy Trucks:	61.6	61.0	52.0	53.2	61.6	61.7
Vehicle Noise:	69.3	68.4	65.4	60.6	69.1	69.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	158	340	733
CNEL:	79	170	366	788



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bake Parkway  
 Road Segment: Irvine Center Drive to Research Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,944 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 820 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.27	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-20.51	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-24.46	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.0	62.0	60.2	54.2	62.8	63.4	
Medium Trucks:	56.6	55.9	49.6	48.0	56.5	56.7	
Heavy Trucks:	57.0	56.4	47.4	48.6	57.0	57.1	
Vehicle Noise:	64.7	63.8	60.8	56.0	64.5	65.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	169	363
CNEL:	39	84	181	390

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Bake Parkway  
 Road Segment: Lake Forest Drive to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,379 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	609 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	84.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 74.458				
Road Grade:	0.0%	Medium Trucks: 74.404				
Left View:	-90.0 degrees	Heavy Trucks: 74.458				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.56	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-21.80	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-25.76	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.7	60.7	58.9	52.9	61.5	62.1
Medium Trucks:	55.3	54.6	48.3	46.7	55.2	55.4
Heavy Trucks:	55.7	55.1	46.1	47.3	55.7	55.8
Vehicle Noise:	63.4	62.5	59.5	54.7	63.2	63.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	298
CNEL:	32	69	148	320

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Banting  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,367 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 443 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-4.40	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-21.64	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-25.59	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	57.7	56.6	54.8	48.8	57.4	58.0	
Medium Trucks:	51.9	51.2	44.8	43.3	51.8	52.0	
Heavy Trucks:	53.7	53.1	44.1	45.4	53.7	53.8	
Vehicle Noise:	59.9	59.0	55.6	51.2	59.7	60.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	13	28	60	129
CNEL:	14	30	64	137

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Pacifica to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,481 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,845 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.72	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-15.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.48	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.3	70.2	68.4	62.4	71.0	71.6
Medium Trucks:	64.6	64.0	57.6	56.1	64.5	64.8
Heavy Trucks:	64.7	64.1	55.1	56.3	64.7	64.8
Vehicle Noise:	72.8	71.9	68.9	64.1	72.6	73.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	94	202	434	936
CNEL:	101	217	467	1,007

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Banting to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,533 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,601 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.33	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-15.91	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.86	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.9	69.8	68.0	62.0	70.6	71.2
Medium Trucks:	64.3	63.6	57.2	55.7	64.1	64.4
Heavy Trucks:	64.3	63.7	54.7	55.9	64.3	64.4
Vehicle Noise:	72.4	71.5	68.6	63.7	72.2	72.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	190	409	882
CNEL:	95	204	440	948

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: I-5 HOV Ramp to Technology Drive West

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,208 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,575 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-15.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.91	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.8	69.8	68.0	61.9	70.6	71.2	
Medium Trucks:	64.2	63.5	57.2	55.6	64.1	64.3	
Heavy Trucks:	64.2	63.7	54.6	55.9	64.2	64.3	
Vehicle Noise:	72.4	71.5	68.5	63.6	72.2	72.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	189	406	876
CNEL:	94	203	437	942

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Technology Drive West to Ada

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 30,730 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,535 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.02	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.98	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.7	67.9	61.9	70.5	71.1
Medium Trucks:	64.1	63.5	57.1	55.6	64.0	64.3
Heavy Trucks:	64.2	63.6	54.6	55.8	64.2	64.3
Vehicle Noise:	72.3	71.4	68.4	63.6	72.1	72.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	187	402	867
CNEL:	93	201	433	932

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Irvine Center Drive to I-5 HOV Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,070 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,398 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.98	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.22	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	69.4	67.7	61.6	70.2	70.9
Medium Trucks:	63.9	63.2	56.9	55.3	63.8	64.0
Heavy Trucks:	63.9	63.3	54.3	55.6	63.9	64.0
Vehicle Noise:	72.1	71.2	68.2	63.3	71.9	72.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	180	388	835
CNEL:	90	194	417	898



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,213 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,328 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.85	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.35	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	69.3	67.6	61.5	70.1	70.7
Medium Trucks:	63.8	63.1	56.7	55.2	63.7	63.9
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9
Vehicle Noise:	72.0	71.0	68.1	63.2	71.8	72.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	176	380	819
CNEL:	88	190	409	881

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: East Yale Loop to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,535 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,272 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.74	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.45	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.2	67.4	61.4	70.0	70.6
Medium Trucks:	63.7	63.0	56.6	55.1	63.6	63.8
Heavy Trucks:	63.7	63.1	54.1	55.3	63.7	63.8
Vehicle Noise:	71.9	70.9	68.0	63.1	71.7	72.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	374	805
CNEL:	87	187	402	866

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: West Yale Loop to Lake Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,880 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,218 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.64	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.60	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.56	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.2	69.1	67.3	61.3	69.9	70.5	
Medium Trucks:	63.6	62.9	56.5	55.0	63.4	63.7	
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7	
Vehicle Noise:	71.7	70.8	67.9	63.0	71.5	72.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	171	368	793
CNEL:	85	184	396	853

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Ada to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,022 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,229 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.58	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.53	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	69.1	67.4	61.3	69.9	70.5
Medium Trucks:	63.6	62.9	56.6	55.0	63.5	63.7
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7
Vehicle Noise:	71.8	70.8	67.9	63.0	71.6	72.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	171	369	795
CNEL:	86	184	397	856

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Lake Road to Creek Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,130 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,073 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.89	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.85	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	68.8	67.0	61.0	69.6	70.2
Medium Trucks:	63.3	62.6	56.2	54.7	63.2	63.4
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4
Vehicle Noise:	71.5	70.5	67.6	62.7	71.3	71.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	163	352	758
CNEL:	82	176	378	815

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Red Hill Avenue to Armstrong Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 48,369 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,990 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.19	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-14.05	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-18.01	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.9	71.8	70.0	64.0	72.6	73.2
Medium Trucks:	66.3	65.6	59.2	57.7	66.1	66.4
Heavy Trucks:	66.3	65.7	56.7	57.9	66.3	66.4
Vehicle Noise:	74.4	73.5	70.6	65.7	74.2	74.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	192	413	889	1,916
CNEL:	206	444	957	2,061

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Discovery/Herchel to Banting

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,373 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,011 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.03	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.98	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.7	66.9	60.9	69.5	70.1
Medium Trucks:	63.1	62.5	56.1	54.6	63.0	63.3
Heavy Trucks:	63.2	62.6	53.5	54.8	63.1	63.3
Vehicle Noise:	71.3	70.4	67.4	62.6	71.1	71.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	345	743
CNEL:	80	172	371	799

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Lyon to East Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,735 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,958 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.14	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.10	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.6	66.8	60.7	69.4	70.0
Medium Trucks:	63.0	62.4	56.0	54.4	62.9	63.1
Heavy Trucks:	63.1	62.5	53.4	54.7	63.0	63.2
Vehicle Noise:	71.2	70.3	67.3	62.5	71.0	71.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	339	730
CNEL:	78	169	364	785



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Creek Road to Lyon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,344 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,926 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.21	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.17	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.7	60.7	69.3	69.9
Medium Trucks:	63.0	62.3	55.9	54.4	62.8	63.1
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	71.1	70.2	67.3	62.4	70.9	71.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	72	155	335	721
CNEL:	78	167	360	776

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 41,730 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,443 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos: 77.5% 12.9% 9.6% 97.42% Medium Trucks: 84.8% 4.9% 10.3% 1.84% Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
	<b>Noise Source Elevations (in feet)</b>				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0				
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.55	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.69	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.65	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.8	69.8	68.0	62.0	70.6	71.2	
Medium Trucks:	64.2	63.6	57.2	55.7	64.1	64.3	
Heavy Trucks:	64.3	63.7	54.6	55.9	64.2	64.4	
Vehicle Noise:	72.4	71.5	68.5	63.7	72.2	72.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	112	242	522	1,124
CNEL:	121	261	561	1,209

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Sand Canyon Avenue to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,369 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,680 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.81	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.76	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.0	67.9	66.1	60.1	68.7	69.3	
Medium Trucks:	62.4	61.7	55.3	53.8	62.2	62.5	
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5	
Vehicle Noise:	70.5	69.6	66.7	61.8	70.3	70.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	142	306	659
CNEL:	71	153	329	709

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Armstrong Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,026 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,220 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.26	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.98	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.94	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	69.5	67.7	61.7	70.3	70.9
Medium Trucks:	63.9	63.3	56.9	55.4	63.8	64.1
Heavy Trucks:	64.0	63.4	54.3	55.6	64.0	64.1
Vehicle Noise:	72.1	71.2	68.2	63.4	71.9	72.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	108	232	499	1,075
CNEL:	116	249	537	1,157

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,863 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,639 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.68	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.92	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.87	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.9	67.8	66.0	60.0	68.6	69.2	
Medium Trucks:	62.2	61.6	55.2	53.7	62.1	62.4	
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4	
Vehicle Noise:	70.4	69.5	66.6	61.7	70.2	70.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	140	301	648
CNEL:	70	150	323	697

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Jamboree Road to Construction Circle

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,487 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,598 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.32	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.91	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.87	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.1	66.4	60.3	68.9	69.6
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	62.6	62.0	53.0	54.3	62.6	62.7
Vehicle Noise:	70.8	69.9	66.9	62.0	70.6	71.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	426	919
CNEL:	99	213	459	988

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Santa Rosa to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,840 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,544 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.23	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.01	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.96	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.1	66.3	60.2	68.9	69.5
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6
Heavy Trucks:	62.5	62.0	52.9	54.2	62.5	62.6
Vehicle Noise:	70.7	69.8	66.8	61.9	70.5	71.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	195	421	906
CNEL:	97	210	452	975

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: FedEx to Discovery/Herchel

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,901 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,477 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.13	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.37	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.32	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	61.8	61.2	52.2	53.5	61.8	61.9
Vehicle Noise:	70.0	69.1	66.1	61.2	69.8	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	281	604
CNEL:	65	140	302	650



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Jeffrey Road to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,889 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,476 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.13	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.37	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.33	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.3	65.6	59.5	68.1	68.7	
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9	
Heavy Trucks:	61.8	61.2	52.2	53.5	61.8	61.9	
Vehicle Noise:	70.0	69.1	66.1	61.2	69.8	70.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	280	604
CNEL:	65	140	302	650

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Laguna Canyon Road to FedEx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,450 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,440 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.43	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.2	65.5	59.4	68.0	68.6
Medium Trucks:	61.7	61.0	54.7	53.1	61.6	61.8
Heavy Trucks:	61.7	61.1	52.1	53.3	61.7	61.8
Vehicle Noise:	69.9	68.9	66.0	61.1	69.7	70.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	128	276	594
CNEL:	64	138	297	639

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Pullman Street to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 37,245 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,073 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.05	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-15.19	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-19.14	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.7	70.7	68.9	62.8	71.5	72.1
Medium Trucks:	65.1	64.4	58.1	56.5	65.0	65.2
Heavy Trucks:	65.1	64.6	55.5	56.8	65.1	65.3
Vehicle Noise:	73.3	72.4	69.4	64.5	73.1	73.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	161	347	747	1,609
CNEL:	173	373	804	1,731

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Construction Circle to Fire Station

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,622 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,279 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.75	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.48	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.44	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.6	67.6	65.8	59.8	68.4	69.0	
Medium Trucks:	62.0	61.4	55.0	53.4	61.9	62.1	
Heavy Trucks:	62.1	61.5	52.4	53.7	62.0	62.2	
Vehicle Noise:	70.2	69.3	66.3	61.5	70.0	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	391	842
CNEL:	91	195	420	906

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Fire Station to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,622 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,279 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.75	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.48	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.44	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.0	61.4	55.0	53.4	61.9	62.1
Heavy Trucks:	62.1	61.5	52.4	53.7	62.0	62.2
Vehicle Noise:	70.2	69.3	66.3	61.5	70.0	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	391	842
CNEL:	91	195	420	906

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Paseo Westpark to Santa Rosa

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,925 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,304 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.80	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.44	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.39	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.9	59.8	68.4	69.0
Medium Trucks:	62.1	61.4	55.0	53.5	62.0	62.2
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	70.3	69.3	66.4	61.5	70.1	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	183	394	848
CNEL:	91	197	423	912

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,798 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,128 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.46	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.78	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.74	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	61.7	61.1	54.7	53.2	61.6	61.8
Heavy Trucks:	61.8	61.2	52.1	53.4	61.7	61.9
Vehicle Noise:	69.9	69.0	66.0	61.2	69.7	70.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	173	373	804
CNEL:	87	186	402	865

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bay Tree  
 Road Segment: Trabuco Road to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,720 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 224 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-7.35	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-24.59	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-28.54	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.7	53.6	51.9	45.8	54.4	55.1
Medium Trucks:	48.9	48.3	41.9	40.3	48.8	49.0
Heavy Trucks:	50.8	50.2	41.2	42.4	50.8	50.9
Vehicle Noise:	56.9	56.1	52.6	48.2	56.8	57.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	18	38	82
CNEL:	9	19	41	87



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Beacon  
 Road Segment: Ridge Valley to Benchmark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,587 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	296 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-5.48	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-22.72	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-26.67	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.9	55.8	54.1	48.0	56.6	57.3
Medium Trucks:	51.4	50.7	44.4	42.8	51.3	51.5
Heavy Trucks:	53.9	53.3	44.3	45.5	53.9	54.0
Vehicle Noise:	59.4	58.6	54.9	50.7	59.2	59.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	15	33	72
CNEL:	8	17	36	77

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Benchmark (LN Street)  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,743 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 144 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-8.61	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-25.85	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-29.81	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	53.8	52.7	50.9	44.9	53.5	54.1	
Medium Trucks:	48.3	47.6	41.2	39.7	48.2	48.4	
Heavy Trucks:	50.7	50.2	41.1	42.4	50.7	50.9	
Vehicle Noise:	56.3	55.4	51.8	47.6	56.1	56.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	10	21	44
CNEL:	5	10	22	47

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bison Avenue  
 Road Segment: SR-73 NB Off-Ramp to California Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,152 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,158 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos: 77.5% 12.9% 9.6% 97.42% Medium Trucks: 84.8% 4.9% 10.3% 1.84% Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
	<b>Noise Source Elevations (in feet)</b>				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0				
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.39	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.85	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.81	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.6	66.5	64.8	58.7	67.3	67.9	
Medium Trucks:	61.4	60.7	54.3	52.8	61.2	61.5	
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3	
Vehicle Noise:	69.4	68.5	65.4	60.7	69.2	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	120	258	557
CNEL:	60	129	277	597

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bonita Canyon Drive  
 Road Segment: MacArthur Boulevard to SR-73

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 30,797 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,541 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 75.0 feet Centerline Dist. to Observer: 75.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 70.413 Medium Trucks: 70.356 Heavy Trucks: 70.413																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.64	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.60	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-19.55	-2.33	-1.20	-5.25	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.2	65.5	59.4	68.0	68.7
Medium Trucks:	61.9	61.2	54.8	53.3	61.8	62.0
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.0	69.1	66.0	61.3	69.8	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	338	728
CNEL:	78	169	363	782

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bonita Canyon Drive  
 Road Segment: Turtle Ridge to Shady Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,746 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,712 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 70.413				
Road Grade: 0.0%	Medium Trucks: 70.356				
Left View: -90.0 degrees	Heavy Trucks: 70.413				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.07	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.31	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-21.27	-2.33	-1.20	-5.25	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.5	63.8	57.7	66.3	66.9
Medium Trucks:	60.2	59.5	53.1	51.6	60.0	60.3
Heavy Trucks:	60.6	60.0	51.0	52.2	60.6	60.7
Vehicle Noise:	68.3	67.4	64.3	59.5	68.1	68.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	121	260	560
CNEL:	60	130	279	601

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bonita Canyon Drive  
 Road Segment: Newport Coast Drive to Turtle Ridge

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,113 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,577 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 70.413				
Road Grade: 0.0%	Medium Trucks: 70.356				
Left View: -90.0 degrees	Heavy Trucks: 70.413				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.43	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.67	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-21.62	-2.33	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.2	65.2	63.4	57.4	66.0	66.6	
Medium Trucks:	59.8	59.1	52.8	51.2	59.7	59.9	
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3	
Vehicle Noise:	67.9	67.0	64.0	59.2	67.7	68.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	246	530
CNEL:	57	123	264	569

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bonita Canyon Drive  
 Road Segment: SR-73 NB Off-Ramp to Newport Coast Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 18,182 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,500 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 75.0 feet Centerline Dist. to Observer: 75.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 70.413 Medium Trucks: 70.356 Heavy Trucks: 70.413																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.65	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.89	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-21.84	-2.33	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.0	65.0	63.2	57.1	65.8	66.4	
Medium Trucks:	59.6	58.9	52.6	51.0	59.5	59.7	
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1	
Vehicle Noise:	67.7	66.8	63.8	59.0	67.5	68.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	110	238	513
CNEL:	55	119	256	551

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bosque  
 Road Segment: Cadence to Great Park Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,864 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,061 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	0.07	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-17.17	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-21.13	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.5	61.4	59.6	53.6	62.2	62.8	
Medium Trucks:	57.0	56.3	49.9	48.4	56.8	57.1	
Heavy Trucks:	59.4	58.8	49.8	51.1	59.4	59.5	
Vehicle Noise:	65.0	64.1	60.5	56.3	64.8	65.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	36	78	169
CNEL:	18	39	83	180



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bosque  
 Road Segment: Irvine Boulevard to Benchmark (LN Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,621 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 711 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-1.67	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-18.91	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-22.86	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.7	59.7	57.9	51.8	60.5	61.1
Medium Trucks:	55.2	54.6	48.2	46.6	55.1	55.3
Heavy Trucks:	57.7	57.1	48.1	49.3	57.7	57.8
Vehicle Noise:	63.2	62.4	58.7	54.5	63.1	63.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	13	28	60	129
CNEL:	14	30	64	138

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bosque  
 Road Segment: Benchmark to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,923 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 654 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-2.04	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-19.27	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-23.23	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.3	59.3	57.5	51.5	60.1	60.7	
Medium Trucks:	54.9	54.2	47.8	46.3	54.7	55.0	
Heavy Trucks:	57.3	56.7	47.7	49.0	57.3	57.4	
Vehicle Noise:	62.9	62.0	58.4	54.2	62.7	63.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	26	57	122
CNEL:	13	28	60	130

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Bosque  
 Road Segment: Great Park Boulevard to Beacon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1,837 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	152 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-8.39	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-25.62	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-29.58	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.0	52.9	51.2	45.1	53.7	54.3
Medium Trucks:	48.5	47.8	41.5	39.9	48.4	48.6
Heavy Trucks:	51.0	50.4	41.4	42.6	51.0	51.1
Vehicle Noise:	56.5	55.6	52.0	47.8	56.3	56.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	10	21	46
CNEL:	5	11	23	49

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Bosque  
 Road Segment: Beacon to S 5th Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1,592 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	131 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-9.01	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-26.24	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-30.20	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.4	52.3	50.5	44.5	53.1	53.7
Medium Trucks:	47.9	47.2	40.9	39.3	47.8	48.0
Heavy Trucks:	50.4	49.8	40.7	42.0	50.3	50.5
Vehicle Noise:	55.9	55.0	51.4	47.2	55.7	56.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	19	42
CNEL:	4	10	21	45

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bryan Avenue  
 Road Segment: Jamboree Road to Market Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,217 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,833 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.68	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.51	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.9	65.8	64.1	58.0	66.6	67.2	
Medium Trucks:	60.7	60.0	53.6	52.1	60.5	60.8	
Heavy Trucks:	61.5	60.9	51.9	53.1	61.5	61.6	
Vehicle Noise:	68.7	67.8	64.7	60.0	68.5	69.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	108	232	499
CNEL:	54	115	249	536

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bryan Avenue  
 Road Segment: Market Place to El Camino Real

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,675 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,788 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.67	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.62	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.8	65.7	64.0	57.9	66.5	67.1	
Medium Trucks:	60.5	59.9	53.5	52.0	60.4	60.7	
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5	
Vehicle Noise:	68.6	67.7	64.6	59.9	68.4	68.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	106	228	491
CNEL:	53	114	245	527

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bryan Avenue  
 Road Segment: Rubicon to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,708 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,791 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.58	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.66	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.61	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.8	65.7	64.0	57.9	66.5	67.1	
Medium Trucks:	60.6	59.9	53.5	52.0	60.4	60.7	
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5	
Vehicle Noise:	68.6	67.7	64.6	59.9	68.4	68.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	106	228	492
CNEL:	53	114	245	527

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Bryan Avenue  
 Road Segment: El Camino Real to Rubicon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,532 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,776 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.69	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.65	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	61.4	60.8	51.7	53.0	61.3	61.5
Vehicle Noise:	68.6	67.7	64.5	59.9	68.4	68.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	105	227	489
CNEL:	52	113	243	525



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bryan Avenue  
 Road Segment: Eastwood to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,067 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,161 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.30	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.54	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.50	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.9	63.8	62.1	56.0	64.6	65.3	
Medium Trucks:	58.7	58.0	51.6	50.1	58.6	58.8	
Heavy Trucks:	59.5	58.9	49.9	51.1	59.5	59.6	
Vehicle Noise:	66.7	65.8	62.7	58.0	66.6	67.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	171	368
CNEL:	39	85	183	395

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Bryan Avenue  
 Road Segment: Westwood to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,963 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,069 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.85	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.5	61.7	55.7	64.3	64.9
Medium Trucks:	58.3	57.6	51.3	49.7	58.2	58.4
Heavy Trucks:	59.2	58.6	49.5	50.8	59.1	59.3
Vehicle Noise:	66.4	65.5	62.3	57.7	66.2	66.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	75	162	349
CNEL:	37	81	174	374

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Bryan Avenue  
 Road Segment: Culver Drive to Westwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,769 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,053 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.72	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.96	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.92	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.5	63.4	61.7	55.6	64.2	64.8	
Medium Trucks:	58.2	57.6	51.2	49.7	58.1	58.4	
Heavy Trucks:	59.1	58.5	49.5	50.7	59.1	59.2	
Vehicle Noise:	66.3	65.4	62.3	57.6	66.1	66.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	74	160	345
CNEL:	37	80	172	370

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Bryan Avenue  
 Road Segment: Yale Avenue to Eastwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,526 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,033 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.00	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.3	61.6	55.5	64.1	64.7
Medium Trucks:	58.2	57.5	51.1	49.6	58.0	58.3
Heavy Trucks:	59.0	58.4	49.4	50.6	59.0	59.1
Vehicle Noise:	66.2	65.3	62.2	57.5	66.0	66.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	73	158	341
CNEL:	37	79	170	366

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Cadence  
 Road Segment: Pusan to Chinon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,014 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	579 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.82	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-21.05	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-25.01	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.3	62.3	60.5	54.4	63.1	63.7
Medium Trucks:	57.3	56.6	50.3	48.7	57.2	57.4
Heavy Trucks:	58.6	58.0	49.0	50.2	58.6	58.7
Vehicle Noise:	65.3	64.4	61.2	56.6	65.2	65.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	38	83	178
CNEL:	19	41	89	191

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Cadence  
 Road Segment: Bosque to Pusan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,558 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 541 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.11	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-21.35	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-25.30	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.0	62.0	60.2	54.2	62.8	63.4	
Medium Trucks:	57.0	56.4	50.0	48.4	56.9	57.1	
Heavy Trucks:	58.3	57.7	48.7	50.0	58.3	58.4	
Vehicle Noise:	65.0	64.2	60.9	56.3	64.9	65.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	79	170
CNEL:	18	39	85	182

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Cadence  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,749 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 392 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.51	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-22.75	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-26.70	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.6	60.6	58.8	52.8	61.4	62.0	
Medium Trucks:	55.6	54.9	48.6	47.0	55.5	55.7	
Heavy Trucks:	56.9	56.3	47.3	48.6	56.9	57.0	
Vehicle Noise:	63.6	62.8	59.5	54.9	63.5	63.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	30	64	137
CNEL:	15	32	68	147

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Cadence  
 Road Segment: Chinon to Merit

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,233 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 267 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-7.18	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-24.42	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-28.37	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.0	58.9	57.1	51.1	59.7	60.3	
Medium Trucks:	54.0	53.3	46.9	45.4	53.8	54.1	
Heavy Trucks:	55.3	54.7	45.6	46.9	55.2	55.4	
Vehicle Noise:	62.0	61.1	57.8	53.3	61.8	62.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	23	49	106
CNEL:	11	25	53	114



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Cadence  
 Road Segment: Merit to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,697 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 140 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-9.98	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-27.22	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-31.17	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	57.2	56.1	54.3	48.3	56.9	57.5	
Medium Trucks:	51.2	50.5	44.1	42.6	51.0	51.3	
Heavy Trucks:	52.5	51.9	42.8	44.1	52.4	52.6	
Vehicle Noise:	59.2	58.3	55.0	50.5	59.0	59.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	15	32	69
CNEL:	7	16	34	74

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: California Avenue  
 Road Segment: University Drive to Academy Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,919 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,643 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.72	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.48	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.0	63.9	62.2	56.1	64.7	65.3
Medium Trucks:	59.0	58.3	51.9	50.4	58.8	59.1
Heavy Trucks:	60.3	59.7	50.6	51.9	60.3	60.4
Vehicle Noise:	67.0	66.1	62.8	58.3	66.8	67.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	178	383
CNEL:	41	88	190	410

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: California Avenue  
 Road Segment: Campus Drive to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,803 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 809 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.36	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.60	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.56	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.9	60.8	59.1	53.0	61.6	62.2	
Medium Trucks:	55.9	55.2	48.8	47.3	55.8	56.0	
Heavy Trucks:	57.2	56.6	47.6	48.8	57.2	57.3	
Vehicle Noise:	63.9	63.0	59.7	55.2	63.7	64.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	51	111	239
CNEL:	26	55	119	255

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: California Avenue  
 Road Segment: Theory to Bison Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,378 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	774 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.55	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.79	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.75	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.7	60.6	58.9	52.8	61.4	62.1	
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8	
Heavy Trucks:	57.0	56.4	47.4	48.6	57.0	57.1	
Vehicle Noise:	63.7	62.8	59.5	55.0	63.5	64.0	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	232
CNEL:	25	53	115	248

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Campus Drive  
 Road Segment: Carlson Avenue to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,153 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,405 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 42.814				
Road Grade: 0.0%		Medium Trucks: 42.720				
Left View: -90.0 degrees		Heavy Trucks: 42.814				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.40	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-15.84	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-19.79	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.3	70.3	68.5	62.4	71.1	71.7
Medium Trucks:	64.9	64.2	57.9	56.3	64.8	65.0
Heavy Trucks:	65.3	64.7	55.7	56.9	65.3	65.4
Vehicle Noise:	73.0	72.1	69.0	64.3	72.8	73.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	357	770
CNEL:	83	178	384	827

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Campus Drive  
 Road Segment: University Drive to Bridge Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,999 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,640 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.39	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	66.9	60.9	69.5	70.1
Medium Trucks:	63.3	62.7	56.3	54.8	63.2	63.4
Heavy Trucks:	63.7	63.2	54.1	55.4	63.7	63.9
Vehicle Noise:	71.5	70.5	67.5	62.7	71.3	71.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	163	352	759
CNEL:	82	176	378	815

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Campus Drive  
 Road Segment: Jamboree Road to Carlson Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,629 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,527 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.62	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.62	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.58	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.7	60.7	69.3	69.9
Medium Trucks:	63.1	62.5	56.1	54.6	63.0	63.3
Heavy Trucks:	63.6	63.0	53.9	55.2	63.5	63.7
Vehicle Noise:	71.3	70.4	67.3	62.5	71.1	71.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	342	737
CNEL:	79	171	367	792

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Campus Drive  
 Road Segment: Stanford Court to Berkeley Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,357 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,257 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.13	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.07	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.3	60.2	68.8	69.4
Medium Trucks:	62.7	62.0	55.6	54.1	62.5	62.8
Heavy Trucks:	63.1	62.5	53.4	54.7	63.0	63.2
Vehicle Noise:	70.8	69.9	66.8	62.0	70.6	71.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	147	317	683
CNEL:	73	158	341	734



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Campus Drive  
 Road Segment: California Avenue to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,405 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,178 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.97	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.27	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.22	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.9	66.1	60.0	68.7	69.3
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0
Vehicle Noise:	70.6	69.7	66.7	61.9	70.4	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	310	667
CNEL:	72	154	333	717

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Campus Drive  
 Road Segment: Berkeley Avenue to Cornell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,031 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,735 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.25	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.21	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.9	66.9	65.1	59.1	67.7	68.3	
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6	
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0	
Vehicle Noise:	69.6	68.7	65.7	60.9	69.4	69.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	124	266	573
CNEL:	62	133	286	616

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Campus Drive  
 Road Segment: Martin to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,561 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,449 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.80	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.04	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.99	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.2	66.1	64.3	58.3	66.9	67.5	
Medium Trucks:	60.7	60.1	53.7	52.1	60.6	60.8	
Heavy Trucks:	61.1	60.6	51.5	52.8	61.1	61.2	
Vehicle Noise:	68.9	67.9	64.9	60.1	68.7	69.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	110	236	509
CNEL:	55	118	254	546

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred	Project Name: Irvine GP
Road Name: Campus Drive	Job Number: 15937
Road Segment: Culver Drive to Paseo Montoya (Turtle Rock Drive)	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,896 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 1,311 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 50 mph																					
Near/Far Lane Distance: 48 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 62.5 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 62.5 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 57.786																				
Left View: -90.0 degrees	Medium Trucks: 57.717																				
Right View: 90.0 degrees	Heavy Trucks: 57.787																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.47	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.43	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.8	66.5	67.1
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4
Heavy Trucks:	60.7	60.1	51.1	52.3	60.7	60.8
Vehicle Noise:	68.4	67.5	64.5	59.7	68.2	68.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	221	476
CNEL:	51	110	237	511

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Campus Drive  
 Road Segment: Von Karman Avenue to Teller Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,040 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,241 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.47	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.71	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.67	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.4	63.7	57.6	66.2	66.8
Medium Trucks:	60.1	59.4	53.0	51.5	59.9	60.2
Heavy Trucks:	60.5	59.9	50.8	52.1	60.4	60.6
Vehicle Noise:	68.2	67.3	64.2	59.4	68.0	68.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	99	213	459
CNEL:	49	106	229	493

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Campus Drive  
 Road Segment: MacArthur Boulevard to Martin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,413 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,189 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.89	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.85	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.2	63.5	57.4	66.0	66.6
Medium Trucks:	59.9	59.2	52.8	51.3	59.7	60.0
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	68.0	67.1	64.0	59.3	67.8	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	96	207	446
CNEL:	48	103	222	479

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Campus Drive  
 Road Segment: Teller Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,202 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,007 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.38	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.62	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.57	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.5	62.7	56.7	65.3	65.9
Medium Trucks:	59.1	58.5	52.1	50.6	59.0	59.3
Heavy Trucks:	59.6	59.0	49.9	51.2	59.5	59.7
Vehicle Noise:	67.3	66.4	63.3	58.5	67.1	67.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	86	185	399
CNEL:	43	92	199	429

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Carlson Avenue  
 Road Segment: Michelson Drive to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,323 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,099 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.19	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.1	57.1	65.7	66.3
Medium Trucks:	59.5	58.9	52.5	50.9	59.4	59.6
Heavy Trucks:	59.9	59.4	50.3	51.6	59.9	60.0
Vehicle Noise:	67.7	66.7	63.7	58.9	67.5	67.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	91	196	423
CNEL:	45	98	211	454



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Chinon  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,756 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	392 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-3.46	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-20.70	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-24.66	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.9	54.8	53.1	47.0	55.6	56.3
Medium Trucks:	50.7	50.1	43.7	42.2	50.6	50.9
Heavy Trucks:	54.0	53.4	44.3	45.6	53.9	54.1
Vehicle Noise:	58.8	58.0	54.0	50.1	58.6	59.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	14	30	65
CNEL:	7	15	32	70

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Creek Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,796 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	396 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-3.42	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-20.66	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-24.62	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.1	52.0	50.2	44.2	52.8	53.4
Medium Trucks:	47.9	47.2	40.9	39.3	47.8	48.0
Heavy Trucks:	51.1	50.5	41.5	42.7	51.1	51.2
Vehicle Noise:	55.9	55.1	51.2	47.3	55.8	56.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	15	33	71
CNEL:	7	16	35	75

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 60,961 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,029 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.19	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.05	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.00	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.1	71.0	69.2	63.2	71.8	72.4	
Medium Trucks:	65.5	64.8	58.4	56.9	65.3	65.6	
Heavy Trucks:	65.5	64.9	55.9	57.1	65.5	65.6	
Vehicle Noise:	73.7	72.7	69.8	64.9	73.5	73.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	307	662	1,427
CNEL:	154	331	713	1,535

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 59,836 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,936 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.11	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.13	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.08	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.0	70.9	69.2	63.1	71.7	72.3	
Medium Trucks:	65.4	64.7	58.4	56.8	65.3	65.5	
Heavy Trucks:	65.4	64.8	55.8	57.0	65.4	65.5	
Vehicle Noise:	73.6	72.6	69.7	64.8	73.4	73.8	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	141	304	654	1,409
CNEL:	152	327	704	1,516

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 60,896 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,024 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.19	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.05	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.01	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.1	71.0	69.2	63.2	71.8	72.4
Medium Trucks:	65.5	64.8	58.4	56.9	65.3	65.6
Heavy Trucks:	65.5	64.9	55.9	57.1	65.5	65.6
Vehicle Noise:	73.6	72.7	69.8	64.9	73.4	73.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	307	662	1,426
CNEL:	153	331	712	1,534

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Scottsdale Drive to I-5 SB Off- Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 59,899 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,942 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.12	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.08	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.0	70.9	69.2	63.1	71.7	72.3	
Medium Trucks:	65.4	64.7	58.4	56.8	65.3	65.5	
Heavy Trucks:	65.4	64.8	55.8	57.0	65.4	65.5	
Vehicle Noise:	73.6	72.7	69.7	64.8	73.4	73.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	141	304	655	1,410
CNEL:	152	327	704	1,517

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: I-405 NB Off-Ramp to San Leandro

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 56,751 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,682 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.88	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.36	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.31	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.8	70.7	68.9	62.9	71.5	72.1
Medium Trucks:	65.2	64.5	58.1	56.6	65.0	65.3
Heavy Trucks:	65.2	64.6	55.6	56.8	65.2	65.3
Vehicle Noise:	73.3	72.4	69.5	64.6	73.1	73.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	136	293	631	1,360
CNEL:	146	315	679	1,464

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: San Leandro to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 53,116 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,382 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.59	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.64	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.60	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.4	68.6	62.6	71.2	71.8
Medium Trucks:	64.9	64.2	57.8	56.3	64.7	65.0
Heavy Trucks:	64.9	64.3	55.3	56.5	64.9	65.0
Vehicle Noise:	73.1	72.1	69.2	64.3	72.9	73.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	130	280	604	1,302
CNEL:	140	302	650	1,400



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Harvard Avenue to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 53,212 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,390 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.60	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.64	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.59	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.4	68.7	62.6	71.2	71.8
Medium Trucks:	64.9	64.2	57.8	56.3	64.8	65.0
Heavy Trucks:	64.9	64.3	55.3	56.5	64.9	65.0
Vehicle Noise:	73.1	72.1	69.2	64.3	72.9	73.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	130	281	605	1,303
CNEL:	140	302	651	1,402

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Trabuco Road to Farwell Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 59,466 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,906 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos:	77.5%	12.9%	9.6%	97.42%
	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
	<b>Noise Source Elevations (in feet)</b>				
	Autos:	2.000			
	Medium Trucks:	4.000			
	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos:	69.914			
	Medium Trucks:	69.857			
	Heavy Trucks:	69.914			

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.08	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.15	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.11	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.4	71.3	69.5	63.5	72.1	72.7
Medium Trucks:	65.8	65.1	58.7	57.2	65.7	65.9
Heavy Trucks:	65.8	65.2	56.2	57.4	65.8	65.9
Vehicle Noise:	74.0	73.0	70.1	65.2	73.8	74.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	142	307	661	1,424
CNEL:	153	330	711	1,532

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 51,527 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,251 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.46	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.78	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.73	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.3	70.3	68.5	62.5	71.1	71.7
Medium Trucks:	64.7	64.1	57.7	56.2	64.6	64.8
Heavy Trucks:	64.8	64.2	55.1	56.4	64.7	64.9
Vehicle Noise:	72.9	72.0	69.0	64.2	72.7	73.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	128	275	592	1,276
CNEL:	137	296	637	1,372

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Main Street to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 50,100 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,133 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.34	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.90	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.85	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.2	70.2	68.4	62.3	71.0	71.6
Medium Trucks:	64.6	63.9	57.6	56.0	64.5	64.7
Heavy Trucks:	64.6	64.1	55.0	56.3	64.6	64.8
Vehicle Noise:	72.8	71.9	68.9	64.0	72.6	73.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	125	270	581	1,252
CNEL:	135	290	625	1,347

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Warner Avenue to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 49,101 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,051 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.25	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.99	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.94	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	70.1	68.3	62.3	70.9	71.5
Medium Trucks:	64.5	63.9	57.5	55.9	64.4	64.6
Heavy Trucks:	64.6	64.0	54.9	56.2	64.5	64.7
Vehicle Noise:	72.7	71.8	68.8	64.0	72.5	73.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	124	266	573	1,235
CNEL:	133	286	617	1,329

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Walnut Avenue to Scottsdale Dive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 48,057 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,965 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
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	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.16	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.08	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.03	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.0	70.0	68.2	62.2	70.8	71.4	
Medium Trucks:	64.4	63.8	57.4	55.9	64.3	64.5	
Heavy Trucks:	64.5	63.9	54.8	56.1	64.4	64.6	
Vehicle Noise:	72.6	71.7	68.7	63.9	72.4	72.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	122	262	565	1,218
CNEL:	131	282	608	1,310

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 47,820 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,945 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.14	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.10	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.06	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.0	70.0	68.2	62.1	70.8	71.4	
Medium Trucks:	64.4	63.7	57.4	55.8	64.3	64.5	
Heavy Trucks:	64.4	63.9	54.8	56.1	64.4	64.6	
Vehicle Noise:	72.6	71.7	68.7	63.8	72.4	72.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	261	563	1,214
CNEL:	131	281	606	1,306

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Shady Canyon Drive to Palo Verde

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,587 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,193 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.59	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.61	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.1	69.1	67.3	61.2	69.9	70.5	
Medium Trucks:	63.5	62.8	56.5	54.9	63.4	63.6	
Heavy Trucks:	63.5	63.0	53.9	55.2	63.5	63.7	
Vehicle Noise:	71.7	70.8	67.8	62.9	71.5	72.0	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	170	365	787
CNEL:	85	182	393	846



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Deerfield Avenue to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,310 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,656 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.81	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.43	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.39	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.6	67.9	61.8	70.4	71.0
Medium Trucks:	64.1	63.4	57.0	55.5	64.0	64.2
Heavy Trucks:	64.1	63.5	54.5	55.7	64.1	64.2
Vehicle Noise:	72.3	71.3	68.4	63.5	72.1	72.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	249	535	1,154
CNEL:	124	267	576	1,241

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Sandburg Way to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,084 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,637 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.78	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.45	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.41	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.7	69.6	67.8	61.8	70.4	71.0	
Medium Trucks:	64.1	63.4	57.0	55.5	63.9	64.2	
Heavy Trucks:	64.1	63.5	54.5	55.7	64.1	64.2	
Vehicle Noise:	72.2	71.3	68.4	63.5	72.0	72.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	248	534	1,150
CNEL:	124	266	574	1,237

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 43,249 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,568 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.70	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.54	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.49	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	69.5	67.8	61.7	70.3	70.9
Medium Trucks:	64.0	63.3	56.9	55.4	63.9	64.1
Heavy Trucks:	64.0	63.4	54.4	55.6	64.0	64.1
Vehicle Noise:	72.2	71.2	68.3	63.4	72.0	72.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	245	527	1,135
CNEL:	122	263	567	1,221

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Palo Verde to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,255 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,001 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.00	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.7	66.9	60.8	69.5	70.1
Medium Trucks:	63.1	62.4	56.1	54.5	63.0	63.2
Heavy Trucks:	63.1	62.6	53.5	54.8	63.1	63.3
Vehicle Noise:	71.3	70.4	67.4	62.5	71.1	71.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	344	740
CNEL:	80	172	370	796

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: University Drive to Sandburg Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 40,762 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,363 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.44	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.79	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.75	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.3	69.3	67.5	61.4	70.1	70.7	
Medium Trucks:	63.7	63.0	56.7	55.1	63.6	63.8	
Heavy Trucks:	63.7	63.2	54.1	55.4	63.7	63.9	
Vehicle Noise:	71.9	71.0	68.0	63.2	71.7	72.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	109	235	506	1,091
CNEL:	117	253	545	1,174

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Farwell Avenue to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 46,855 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,866 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.05	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.19	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.14	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.3	70.3	68.5	62.5	71.1	71.7	
Medium Trucks:	64.7	64.1	57.7	56.2	64.6	64.8	
Heavy Trucks:	64.8	64.2	55.1	56.4	64.7	64.9	
Vehicle Noise:	72.9	72.0	69.0	64.2	72.7	73.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	262	564	1,214
CNEL:	131	281	606	1,307

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Campus Drive to High School

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,109 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,309 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.37	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.86	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.82	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.2	67.4	61.4	70.0	70.6
Medium Trucks:	63.6	63.0	56.6	55.1	63.5	63.8
Heavy Trucks:	63.7	63.1	54.1	55.3	63.7	63.8
Vehicle Noise:	71.8	70.9	68.0	63.1	71.6	72.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	108	233	501	1,079
CNEL:	116	250	539	1,161

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: High School to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,343 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,246 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.29	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.95	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.90	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.2	69.1	67.3	61.3	69.9	70.5	
Medium Trucks:	63.6	62.9	56.5	55.0	63.4	63.7	
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7	
Vehicle Noise:	71.8	70.8	67.9	63.0	71.6	72.0	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	107	230	495	1,066
CNEL:	115	247	532	1,146



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Bryan Avenue to Florence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,291 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,076 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.06	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.18	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.14	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	68.9	67.1	61.1	69.7	70.3
Medium Trucks:	63.3	62.7	56.3	54.8	63.2	63.4
Heavy Trucks:	63.4	62.8	53.7	55.0	63.3	63.5
Vehicle Noise:	71.5	70.6	67.6	62.8	71.3	71.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	103	222	477	1,028
CNEL:	111	238	513	1,106

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Portola Parkway to Settlers

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,133 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,826 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.40	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.3	66.5	60.4	69.1	69.7
Medium Trucks:	62.7	62.0	55.7	54.1	62.6	62.8
Heavy Trucks:	62.7	62.2	53.1	54.4	62.7	62.9
Vehicle Noise:	70.9	70.0	67.0	62.2	70.7	71.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	150	323	696
CNEL:	75	161	348	749

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Florence to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 36,478 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,009 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.96	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.28	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.23	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.8	67.0	61.0	69.6	70.2
Medium Trucks:	63.2	62.6	56.2	54.7	63.1	63.3
Heavy Trucks:	63.3	62.7	53.6	54.9	63.2	63.4
Vehicle Noise:	71.4	70.5	67.5	62.7	71.2	71.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	218	470	1,013
CNEL:	109	235	506	1,090

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Irvine Boulevard to Viewpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,880 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,300 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.79	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.44	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.40	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.1	61.4	55.0	53.5	61.9	62.2
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	70.3	69.3	66.4	61.5	70.1	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	182	393	847
CNEL:	91	196	423	911

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Viewpark to Meadowood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,007 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,228 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.66	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.58	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.54	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.5	65.7	59.7	68.3	68.9
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.0
Heavy Trucks:	62.0	61.4	52.3	53.6	61.9	62.1
Vehicle Noise:	70.1	69.2	66.2	61.4	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	179	385	829
CNEL:	89	192	414	892

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Settlers to Furrow

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,905 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 982 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.90	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-20.14	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-24.09	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.6	63.8	57.7	66.4	67.0
Medium Trucks:	60.0	59.4	53.0	51.4	59.9	60.1
Heavy Trucks:	60.1	59.5	50.4	51.7	60.0	60.2
Vehicle Noise:	68.2	67.3	64.3	59.5	68.0	68.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	99	214	461
CNEL:	50	107	230	495

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Meadowood to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,491 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,608 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.76	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-18.00	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.95	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.1	66.1	64.3	58.2	66.9	67.5	
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6	
Heavy Trucks:	60.5	60.0	50.9	52.2	60.5	60.7	
Vehicle Noise:	68.7	67.8	64.8	59.9	68.5	69.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	310	667
CNEL:	72	155	333	718

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Discovery Drive  
 Road Segment: Irvine Center Drive to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,390 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	775 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.55	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.79	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.74	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.7	60.7	58.9	52.8	61.5	62.1
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8
Heavy Trucks:	57.0	56.4	47.4	48.6	57.0	57.1
Vehicle Noise:	63.7	62.8	59.6	55.0	63.5	64.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	232
CNEL:	25	53	115	248



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Discovery Drive  
 Road Segment: Waterworks Way to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	5,001 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	413 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-22.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-26.48	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.0	57.9	56.2	50.1	58.7	59.3
Medium Trucks:	53.0	52.3	45.9	44.4	52.8	53.1
Heavy Trucks:	54.3	53.7	44.6	45.9	54.3	54.4
Vehicle Noise:	61.0	60.1	56.8	52.3	60.8	61.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	15	33	71	152
CNEL:	16	35	76	163

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: East Yale Loop  
 Road Segment: Alton Parkway to Witherspoon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,347 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,101 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.22	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.2	62.2	60.4	54.4	63.0	63.6	
Medium Trucks:	57.2	56.5	50.2	48.6	57.1	57.3	
Heavy Trucks:	58.5	57.9	48.9	50.2	58.5	58.6	
Vehicle Noise:	65.3	64.4	61.1	56.5	65.1	65.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	136	293
CNEL:	31	68	146	314

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: East Yale Loop  
 Road Segment: Osborn Street to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,680 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,046 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.44	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.0	62.0	60.2	54.1	62.8	63.4
Medium Trucks:	57.0	56.3	50.0	48.4	56.9	57.1
Heavy Trucks:	58.3	57.7	48.7	49.9	58.3	58.4
Vehicle Noise:	65.0	64.1	60.9	56.3	64.8	65.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	131	283
CNEL:	30	65	141	303

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: East Yale Loop  
 Road Segment: Yale Avenue to Springbrook South

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	11,525 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	951 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.85	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.6	61.5	59.8	53.7	62.3	63.0
Medium Trucks:	56.6	55.9	49.5	48.0	56.5	56.7
Heavy Trucks:	57.9	57.3	48.3	49.5	57.9	58.0
Vehicle Noise:	64.6	63.7	60.4	55.9	64.4	64.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	57	123	266
CNEL:	28	61	132	285

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: East Yale Loop  
 Road Segment: Springbrook North to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,506 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	702 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		57.786		
Left View:	-90.0 degrees	Medium Trucks:		57.717		
Right View:	90.0 degrees	Heavy Trucks:		57.787		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.98	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.22	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.17	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.3	60.2	58.5	52.4	61.0	61.6
Medium Trucks:	55.3	54.6	48.2	46.7	55.1	55.4
Heavy Trucks:	56.6	56.0	47.0	48.2	56.6	56.7
Vehicle Noise:	63.3	62.4	59.1	54.6	63.1	63.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	101	217
CNEL:	23	50	108	232

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: East Yale Loop  
 Road Segment: Woodspring to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,059 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	582 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.79	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.03	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.98	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.5	59.4	57.6	51.6	60.2	60.8
Medium Trucks:	54.5	53.8	47.4	45.9	54.3	54.6
Heavy Trucks:	55.8	55.2	46.1	47.4	55.7	55.9
Vehicle Noise:	62.5	61.6	58.3	53.8	62.3	62.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	41	89	192
CNEL:	21	44	95	205

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: East Yale Loop  
 Road Segment: Barranca Parkway to Eastshore

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,558 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 541 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.30	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.2	59.1	57.3	51.3	59.9	60.5	
Medium Trucks:	54.1	53.5	47.1	45.6	54.0	54.2	
Heavy Trucks:	55.4	54.9	45.8	47.1	55.4	55.6	
Vehicle Noise:	62.2	61.3	58.0	53.4	62.0	62.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	85	182
CNEL:	20	42	91	195

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Eastwood  
 Road Segment: Bryan Avenue to Monticello

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,212 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 265 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-6.63	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-23.87	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-27.82	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.3	57.2	55.5	49.4	58.0	58.7
Medium Trucks:	52.5	51.9	45.5	44.0	52.4	52.7
Heavy Trucks:	54.4	53.8	44.8	46.0	54.4	54.5
Vehicle Noise:	60.5	59.7	56.2	51.8	60.4	60.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	18	40	85
CNEL:	9	20	42	91



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Eastwood  
 Road Segment: Columbus to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,017 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 166 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-8.65	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-25.89	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-29.84	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	56.3	55.2	53.5	47.4	56.0	56.6	
Medium Trucks:	50.5	49.8	43.5	41.9	50.4	50.6	
Heavy Trucks:	52.4	51.8	42.7	44.0	52.3	52.5	
Vehicle Noise:	58.5	57.6	54.2	49.8	58.3	58.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	13	29	63
CNEL:	7	14	31	67

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: El Camino Real  
 Road Segment: Jamboree Road to Alliance (SR-261 Bridge)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,372 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,598 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.64	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.60	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	63.8	62.0	56.0	64.6	65.2
Medium Trucks:	58.8	58.2	51.8	50.3	58.7	58.9
Heavy Trucks:	60.2	59.6	50.5	51.8	60.1	60.3
Vehicle Noise:	66.9	66.0	62.7	58.1	66.7	67.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	174	376
CNEL:	40	87	187	402

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: El Camino Real North  
 Road Segment: El Camino Real to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,466 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	533 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.41	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.36	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.1	59.0	57.3	51.2	59.8	60.4
Medium Trucks:	54.1	53.4	47.0	45.5	54.0	54.2
Heavy Trucks:	55.4	54.8	45.8	47.0	55.4	55.5
Vehicle Noise:	62.1	61.2	57.9	53.4	61.9	62.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	84	181
CNEL:	19	42	90	194

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Fairbanks  
 Road Segment: Alton Parkway to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,297 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,510 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 37.138				
Road Grade: 0.0%	Medium Trucks: 37.030				
Left View: -90.0 degrees	Heavy Trucks: 37.139				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.35	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-16.89	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-20.85	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.4	64.7	58.6	67.2	67.8
Medium Trucks:	61.5	60.8	54.4	52.9	61.4	61.6
Heavy Trucks:	62.8	62.2	53.2	54.4	62.8	62.9
Vehicle Noise:	69.5	68.6	65.3	60.8	69.3	69.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	73	157	338
CNEL:	36	78	168	362

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Fairbanks  
 Road Segment: Irvine Boulevard to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,527 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 786 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.49	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-19.72	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-23.68	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.7	63.6	61.8	55.8	64.4	65.0	
Medium Trucks:	58.6	58.0	51.6	50.1	58.5	58.8	
Heavy Trucks:	59.9	59.4	50.3	51.6	59.9	60.1	
Vehicle Noise:	66.7	65.8	62.5	57.9	66.5	66.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	101	219
CNEL:	23	50	109	234

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Fairchild Road  
 Road Segment: MacArthur Boulevard to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,094 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 585 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.47	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	60.9	59.1	53.1	61.7	62.3
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8
Heavy Trucks:	56.5	55.9	46.9	48.2	56.5	56.6
Vehicle Noise:	63.8	62.9	59.7	55.0	63.6	64.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	233
CNEL:	25	54	116	250

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Gateway Boulevard  
 Road Segment: Alton Parkway to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,953 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,316 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	1.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-16.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-20.19	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.5	59.4	57.7	51.6	60.2	60.9
Medium Trucks:	55.0	54.3	48.0	46.4	54.9	55.1
Heavy Trucks:	57.5	56.9	47.9	49.1	57.5	57.6
Vehicle Noise:	63.0	62.2	58.5	54.3	62.8	63.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	45	97	208
CNEL:	22	48	103	222

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred	Project Name: Irvine GP
Road Name: Gateway Boulevard	Job Number: 15937
Road Segment: Spectrum Center Drive (Fortune Drive) to Alton Parkway	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,135 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,001 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.42	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.38	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.3	58.3	56.5	50.4	59.1	59.7
Medium Trucks:	53.8	53.1	46.8	45.2	53.7	53.9
Heavy Trucks:	56.3	55.7	46.7	47.9	56.3	56.4
Vehicle Noise:	61.8	61.0	57.3	53.1	61.7	62.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	81	174
CNEL:	18	40	86	185



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Gateway Boulevard  
 Road Segment: Irvine Center Drive to Meridian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,204 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	512 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-3.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-20.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-24.29	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.4	55.3	53.6	47.5	56.1	56.8
Medium Trucks:	50.9	50.2	43.9	42.3	50.8	51.0
Heavy Trucks:	53.4	52.8	43.8	45.0	53.4	53.5
Vehicle Noise:	58.9	58.0	54.4	50.2	58.7	59.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	111
CNEL:	12	25	55	118

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Great Park Boulevard  
 Road Segment: Sand Canyon to Ridge Valley

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,530 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,674 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.24	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.00	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.95	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.5	71.4	69.7	63.6	72.2	72.8
Medium Trucks:	66.1	65.4	59.0	57.5	66.0	66.2
Heavy Trucks:	66.5	65.9	56.9	58.1	66.5	66.6
Vehicle Noise:	74.2	73.3	70.2	65.5	74.0	74.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	111	239	515	1,108
CNEL:	119	257	553	1,191

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Great Park Boulevard  
 Road Segment: Ridge Valley (O Street) to Bosque (LY Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,566 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,862 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.90	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.2	65.4	59.4	68.0	68.6
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	62.2	61.6	52.6	53.9	62.2	62.3
Vehicle Noise:	69.9	69.0	66.0	61.2	69.7	70.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	279	601
CNEL:	65	139	300	646

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Great Park Boulevard (EB)  
 Road Segment: Bosque to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,512 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 702 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.94	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-21.18	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-25.14	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.9	65.8	64.1	58.0	66.6	67.2
Medium Trucks:	60.5	59.8	53.4	51.9	60.4	60.6
Heavy Trucks:	60.9	60.3	51.3	52.5	60.9	61.0
Vehicle Noise:	68.6	67.7	64.6	59.8	68.4	68.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	136	293
CNEL:	31	68	146	315

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Great Park Boulevard (WB)  
 Road Segment: Bosque to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,517 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 620 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.48	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-21.72	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-25.68	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.4	65.3	63.5	57.5	66.1	66.7	
Medium Trucks:	59.9	59.3	52.9	51.4	59.8	60.0	
Heavy Trucks:	60.3	59.7	50.7	52.0	60.3	60.4	
Vehicle Noise:	68.1	67.1	64.1	59.3	67.9	68.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	125	270
CNEL:	29	62	135	290

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: University Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,043 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,901 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 37.138				
Road Grade: 0.0%	Medium Trucks: 37.030				
Left View: -90.0 degrees	Heavy Trucks: 37.139				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.84	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-16.40	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-20.36	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	68.9	67.1	61.0	69.7	70.3
Medium Trucks:	63.7	63.0	56.7	55.1	63.6	63.8
Heavy Trucks:	64.5	63.9	54.9	56.2	64.5	64.6
Vehicle Noise:	71.8	70.9	67.7	63.0	71.6	72.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	222	478
CNEL:	51	110	238	513

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Michelson Drive to Coronado

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,293 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,582 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.03	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	62.1	61.5	55.1	53.6	62.0	62.3
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	70.2	69.3	66.2	61.5	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	135	291	627
CNEL:	67	145	312	673

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: San Marino to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,486 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,433 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.91	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.33	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.28	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.1	67.1	65.3	59.2	67.9	68.5	
Medium Trucks:	61.9	61.2	54.8	53.3	61.8	62.0	
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8	
Vehicle Noise:	70.0	69.1	65.9	61.2	69.8	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	280	603
CNEL:	65	139	300	647



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Coronado to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,124 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,403 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.86	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.34	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.2	59.2	67.8	68.4
Medium Trucks:	61.8	61.2	54.8	53.3	61.7	61.9
Heavy Trucks:	62.7	62.1	53.0	54.3	62.7	62.8
Vehicle Noise:	69.9	69.0	65.8	61.2	69.7	70.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	278	598
CNEL:	64	138	298	642

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: San Carlo to San Marino

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,368 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.79	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.40	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.0	66.9	65.2	59.1	67.7	68.4	
Medium Trucks:	61.8	61.1	54.7	53.2	61.6	61.9	
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7	
Vehicle Noise:	69.8	68.9	65.8	61.1	69.6	70.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	128	275	592
CNEL:	64	137	295	635

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Main Street to San Carlo

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,170 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,324 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.71	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.53	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.48	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.9	65.1	59.0	67.7	68.3
Medium Trucks:	61.7	61.0	54.7	53.1	61.6	61.8
Heavy Trucks:	62.5	61.9	52.9	54.2	62.5	62.6
Vehicle Noise:	69.8	68.9	65.7	61.0	69.6	70.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	126	272	585
CNEL:	63	135	291	627

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Alton Parkway to San Leon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,344 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,678 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.30	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.94	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.90	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.4	63.7	57.6	66.3	66.9
Medium Trucks:	60.3	59.6	53.2	51.7	60.2	60.4
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2
Vehicle Noise:	68.3	67.4	64.3	59.6	68.2	68.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	101	219	471
CNEL:	51	109	234	505

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: San Juan to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,616 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,701 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.36	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.88	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.84	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.5	63.7	57.7	66.3	66.9
Medium Trucks:	60.3	59.7	53.3	51.7	60.2	60.4
Heavy Trucks:	61.2	60.6	51.5	52.8	61.2	61.3
Vehicle Noise:	68.4	67.5	64.3	59.7	68.2	68.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	102	220	475
CNEL:	51	110	237	510

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: San Leon to San Juan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,160 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,663 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.94	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.4	63.6	57.6	66.2	66.8
Medium Trucks:	60.2	59.6	53.2	51.7	60.1	60.3
Heavy Trucks:	61.1	60.5	51.4	52.7	61.1	61.2
Vehicle Noise:	68.3	67.4	64.3	59.6	68.1	68.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	101	217	468
CNEL:	50	108	233	502

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,471 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,276 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.89	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.09	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.3	64.3	62.5	56.4	65.1	65.7
Medium Trucks:	59.1	58.4	52.0	50.5	59.0	59.2
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0
Vehicle Noise:	67.2	66.3	63.1	58.4	67.0	67.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	85	182	392
CNEL:	42	91	195	421

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Deerfield Avenue to Poplar Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	15,226 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	1,256 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.96	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.20	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.15	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.3	64.2	62.4	56.4	65.0	65.6
Medium Trucks:	59.0	58.3	52.0	50.4	58.9	59.1
Heavy Trucks:	59.9	59.3	50.2	51.5	59.8	60.0
Vehicle Noise:	67.1	66.2	63.0	58.4	66.9	67.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	180	388
CNEL:	42	90	193	416



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,230 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,421 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.42	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.66	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.62	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.8	64.7	63.0	56.9	65.5	66.1
Medium Trucks:	59.5	58.9	52.5	51.0	59.4	59.7
Heavy Trucks:	60.4	59.8	50.8	52.0	60.4	60.5
Vehicle Noise:	67.6	66.7	63.6	58.9	67.4	67.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	91	196	421
CNEL:	45	97	210	452

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Bridge Road to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,811 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,387 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.72	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.6	62.9	56.8	65.4	66.0
Medium Trucks:	59.4	58.8	52.4	50.9	59.3	59.6
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	67.5	66.6	63.5	58.8	67.3	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	89	192	415
CNEL:	44	96	206	445

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Paseo Westpark to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,894 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,394 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.51	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.75	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.70	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.6	62.9	56.8	65.4	66.0
Medium Trucks:	59.5	58.8	52.4	50.9	59.3	59.6
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	67.5	66.6	63.5	58.8	67.3	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	90	193	416
CNEL:	45	96	207	446

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Poplar Street to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,424 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,107 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.51	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	79.45	-18.75	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	84.25	-22.70	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.7	65.6	63.8	57.8	66.4	67.0	
Medium Trucks:	60.4	59.8	53.4	51.8	60.3	60.5	
Heavy Trucks:	61.3	60.7	51.6	52.9	61.2	61.4	
Vehicle Noise:	68.5	67.6	64.4	59.8	68.3	68.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	83	179	385
CNEL:	41	89	192	413

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: California Avenue to Berkeley Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,793 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,220 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.09	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.32	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.28	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.1	62.3	56.2	64.9	65.5
Medium Trucks:	58.9	58.2	51.9	50.3	58.8	59.0
Heavy Trucks:	59.7	59.1	50.1	51.4	59.7	59.8
Vehicle Noise:	67.0	66.1	62.9	58.2	66.8	67.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	177	381
CNEL:	41	88	190	408

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Culver Drive to California Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,558 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,201 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.16	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.35	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.0	62.2	56.2	64.8	65.4
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9
Heavy Trucks:	59.7	59.1	50.0	51.3	59.6	59.8
Vehicle Noise:	66.9	66.0	62.8	58.2	66.7	67.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	175	377
CNEL:	40	87	188	404

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Berkeley to Bridge Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,466 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,193 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.42	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.38	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.0	64.0	62.2	56.1	64.8	65.4
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9
Heavy Trucks:	59.6	59.0	50.0	51.3	59.6	59.7
Vehicle Noise:	66.9	66.0	62.8	58.1	66.7	67.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	174	375
CNEL:	40	87	187	402

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Warner Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,352 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,102 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.73	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.7	63.6	61.9	55.8	64.4	65.0	
Medium Trucks:	58.4	57.8	51.4	49.9	58.3	58.6	
Heavy Trucks:	59.3	58.7	49.7	50.9	59.3	59.4	
Vehicle Noise:	66.5	65.6	62.5	57.8	66.3	66.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	165	356
CNEL:	38	82	177	381



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Hicks Canyon Drive  
 Road Segment: Delamesa to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,209 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 182 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-8.25	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	75.75	-25.49	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	81.57	-29.45	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	55.8	54.7	52.9	46.9	55.5	56.1	
Medium Trucks:	50.0	49.3	42.9	41.4	49.9	50.1	
Heavy Trucks:	51.8	51.2	42.2	43.5	51.8	51.9	
Vehicle Noise:	58.0	57.1	53.7	49.3	57.8	58.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	36	77
CNEL:	8	18	38	82

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Hornet (5th St)  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,393 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	280 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-4.93	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-22.17	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-26.12	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.4	53.4	51.6	45.6	54.2	54.8
Medium Trucks:	49.3	48.6	42.2	40.7	49.2	49.4
Heavy Trucks:	52.5	51.9	42.9	44.1	52.5	52.6
Vehicle Noise:	57.3	56.5	52.6	48.7	57.2	57.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	11	24	52
CNEL:	6	12	26	56

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Hubble  
 Road Segment: Irvine Center Drive to Bunsen

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,425 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 200 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-6.39	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-23.62	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-27.58	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	53.0	51.9	50.2	44.1	52.7	53.3	
Medium Trucks:	47.8	47.2	40.8	39.2	47.7	47.9	
Heavy Trucks:	51.0	50.4	41.4	42.7	51.0	51.1	
Vehicle Noise:	55.9	55.0	51.1	47.2	55.7	56.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	19	42
CNEL:	4	10	21	44

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred Project Name: Irvine GP  
 Road Name: Irvine Boulevard Job Number: 15937  
 Road Segment: SR-133 NB Off- Ramp to Ridge Valley (O Street)

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 42,105 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,474 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.59	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.65	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.61	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	69.4	67.6	61.6	70.2	70.8
Medium Trucks:	63.9	63.2	56.8	55.3	63.7	64.0
Heavy Trucks:	63.9	63.3	54.3	55.5	63.9	64.0
Vehicle Noise:	72.0	71.1	68.2	63.3	71.8	72.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	111	240	518	1,115
CNEL:	120	258	557	1,200

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: SR-133 SB Off-Ramp to SR-133 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,173 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,314 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.38	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.86	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.81	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.2	67.4	61.4	70.0	70.6
Medium Trucks:	63.7	63.0	56.6	55.1	63.5	63.8
Heavy Trucks:	63.7	63.1	54.1	55.3	63.7	63.8
Vehicle Noise:	71.8	70.9	68.0	63.1	71.6	72.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	108	233	502	1,081
CNEL:	116	250	540	1,163

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Sand Canyon to SR-133 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,675 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,768 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	69.914			
Road Grade: 0.0%	Medium Trucks:	69.857			
Left View: -90.0 degrees	Heavy Trucks:	69.914			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.94	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.30	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.26	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.2	70.2	68.4	62.3	71.0	71.6
Medium Trucks:	64.6	63.9	57.6	56.0	64.5	64.7
Heavy Trucks:	64.7	64.1	55.0	56.3	64.6	64.8
Vehicle Noise:	72.8	71.9	68.9	64.1	72.6	73.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	119	257	554	1,194
CNEL:	128	277	596	1,285

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Merit to Alton

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,805 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,954 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.88	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.36	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.31	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	66.9	60.9	69.5	70.1
Medium Trucks:	63.2	62.5	56.1	54.6	63.0	63.3
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3
Vehicle Noise:	71.3	70.4	67.5	62.6	71.1	71.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	465	1,001
CNEL:	108	232	500	1,077

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Journey to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 36,360 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,000 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.95	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.29	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.25	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.8	68.8	67.0	60.9	69.6	70.2	
Medium Trucks:	63.2	62.5	56.2	54.6	63.1	63.3	
Heavy Trucks:	63.3	62.7	53.6	54.9	63.2	63.4	
Vehicle Noise:	71.4	70.5	67.5	62.7	71.2	71.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	218	469	1,011
CNEL:	109	234	505	1,088



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Ridge Valley (O Street) to Bosque (LY Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,486 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,598 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.32	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.92	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.87	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.1	66.4	60.3	68.9	69.6
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	62.6	62.0	53.0	54.3	62.6	62.7
Vehicle Noise:	70.8	69.9	66.9	62.0	70.6	71.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	426	919
CNEL:	99	213	459	988

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Pusan Way to Chinon (B Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,080 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,564 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.27	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.97	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.93	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.1	66.3	60.3	68.9	69.5
Medium Trucks:	62.5	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	62.6	62.0	52.9	54.2	62.6	62.7
Vehicle Noise:	70.7	69.8	66.8	62.0	70.5	71.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	196	423	911
CNEL:	98	211	455	980

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Palo Lado to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,379 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,671 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.44	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.79	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.75	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.3	66.5	60.4	69.1	69.7
Medium Trucks:	62.7	62.0	55.7	54.1	62.6	62.8
Heavy Trucks:	62.7	62.2	53.1	54.4	62.7	62.9
Vehicle Noise:	70.9	70.0	67.0	62.2	70.7	71.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	94	202	434	936
CNEL:	101	217	467	1,007

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Culver Drive to Palo Lado

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,081 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,647 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.40	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.83	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.79	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.2	66.5	60.4	69.0	69.6
Medium Trucks:	62.7	62.0	55.6	54.1	62.6	62.8
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.9	69.9	67.0	62.1	70.7	71.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	200	432	930
CNEL:	100	216	464	1,001

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: SR-261 SB Off-Ramp to SR-261 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,115 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,567 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.27	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.97	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.92	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.1	66.3	60.3	68.9	69.5
Medium Trucks:	62.5	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	70.7	69.8	66.9	62.0	70.5	71.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	196	423	911
CNEL:	98	211	455	980

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Old Myford Road to Market Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,303 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,583 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.30	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.94	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.90	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.2	68.1	66.4	60.3	68.9	69.5	
Medium Trucks:	62.6	61.9	55.5	54.0	62.5	62.7	
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7	
Vehicle Noise:	70.8	69.8	66.9	62.0	70.6	71.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	197	425	915
CNEL:	98	212	457	984

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Bosque (LY Street) to Modjeska

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,785 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,540 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.23	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.01	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.97	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.3	60.2	68.8	69.5
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6
Heavy Trucks:	62.5	61.9	52.9	54.2	62.5	62.6
Vehicle Noise:	70.7	69.8	66.8	61.9	70.5	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	195	420	905
CNEL:	97	210	452	974

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Jamboree Road to Old Myford Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 30,658 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,529 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.03	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.99	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.3	60.2	68.8	69.4
Medium Trucks:	62.5	61.8	55.4	53.9	62.4	62.6
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	70.7	69.7	66.8	61.9	70.5	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	194	419	902
CNEL:	97	209	451	971



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Market Place to SR-261 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,542 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,520 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.19	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.05	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.00	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.2	60.2	68.8	69.4
Medium Trucks:	62.5	61.8	55.4	53.9	62.3	62.6
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	70.7	69.7	66.8	61.9	70.5	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	194	418	900
CNEL:	97	209	449	968

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Jeffrey Road to Groveland

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,798 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,541 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.23	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.01	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.97	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.3	60.2	68.8	69.5
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6
Heavy Trucks:	62.5	61.9	52.9	54.2	62.5	62.6
Vehicle Noise:	70.7	69.8	66.8	61.9	70.5	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	195	420	905
CNEL:	97	210	452	974

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Bake Parkway to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,721 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,370 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.92	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.31	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.27	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.8	67.7	66.0	59.9	68.5	69.2	
Medium Trucks:	62.2	61.5	55.2	53.6	62.1	62.3	
Heavy Trucks:	62.2	61.6	52.6	53.9	62.2	62.3	
Vehicle Noise:	70.4	69.5	66.5	61.6	70.2	70.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	186	401	864
CNEL:	93	200	431	930

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred Project Name: Irvine GP  
 Road Name: Irvine Boulevard Job Number: 15937  
 Road Segment: Independence Way (The Groves)/The Groves to Jeffrey Road

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,654 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,364 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.91	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.32	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.28	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	66.0	59.9	68.5	69.1
Medium Trucks:	62.2	61.5	55.2	53.6	62.1	62.3
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	70.4	69.4	66.5	61.6	70.2	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	186	400	863
CNEL:	93	200	431	928

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Chinon (B Street) to Merit

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,405 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,261 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.72	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.52	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.47	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	68.9
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.0	61.4	52.4	53.7	62.0	62.1
Vehicle Noise:	70.2	69.3	66.3	61.4	70.0	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	180	389	837
CNEL:	90	194	418	901

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: SR-261 NB Off-Ramp to Central Park

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,914 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,303 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.80	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.44	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.39	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.9	59.8	68.4	69.0
Medium Trucks:	62.1	61.4	55.0	53.5	62.0	62.2
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	70.3	69.3	66.4	61.5	70.1	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	183	393	848
CNEL:	91	196	423	912

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred Project Name: Irvine GP  
 Road Name: Irvine Boulevard Job Number: 15937  
 Road Segment: Pueblo Norte to Independence Way (The Groves)/ Parkwood

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b> Average Daily Traffic (Adt): 27,208 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,245 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	<b>Site Conditions (Hard = 10, Soft = 15)</b> Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b> Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<b>Vehicle Mix</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table> <b>Noise Source Elevations (in feet)</b> Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Lane Equivalent Distance (in feet)</b> Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.69	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.55	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.51	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.7	59.7	68.3	68.9
Medium Trucks:	62.0	61.3	54.9	53.4	61.8	62.1
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	70.2	69.2	66.3	61.4	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	180	387	833
CNEL:	90	193	416	897

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Yale Avenue to Pueblo Norte

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,027 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,230 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.66	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.58	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.53	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.5	65.7	59.7	68.3	68.9	
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.0	
Heavy Trucks:	62.0	61.4	52.3	53.6	61.9	62.1	
Vehicle Noise:	70.1	69.2	66.2	61.4	69.9	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	179	385	830
CNEL:	89	192	414	893



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Modjeska to Pusan Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,040 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,148 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.50	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.74	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.70	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	61.8	61.1	54.7	53.2	61.7	61.9
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	70.0	69.0	66.1	61.2	69.8	70.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	376	809
CNEL:	87	188	404	871

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Central Park Avenue to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,271 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,002 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.19	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.05	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.00	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.2	59.2	67.8	68.4
Medium Trucks:	61.5	60.8	54.4	52.9	61.3	61.6
Heavy Trucks:	61.5	60.9	51.9	53.1	61.5	61.6
Vehicle Noise:	69.7	68.7	65.8	60.9	69.5	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	358	772
CNEL:	83	179	386	831

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Parker to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,781 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,879 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.08	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.32	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.28	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	66.7	65.0	58.9	67.5	68.1	
Medium Trucks:	61.2	60.5	54.2	52.6	61.1	61.3	
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3	
Vehicle Noise:	69.4	68.5	65.5	60.6	69.2	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	344	740
CNEL:	80	172	370	796

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Alton Parkway to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,955 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,481 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-18.35	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-22.31	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.2	59.5	53.1	51.6	60.0	60.3
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3
Vehicle Noise:	68.3	67.4	64.5	59.6	68.1	68.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	293	632
CNEL:	68	146	315	680

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred Project Name: Irvine GP  
 Road Name: Irvine Center Drive Job Number: 15937  
 Road Segment: Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 52,865 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,361 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.99	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.25	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.21	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.6	67.9	61.8	70.4	71.0
Medium Trucks:	64.3	63.6	57.2	55.7	64.1	64.4
Heavy Trucks:	64.7	64.1	55.1	56.3	64.7	64.8
Vehicle Noise:	72.4	71.5	68.4	63.7	72.2	72.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	112	242	521	1,122
CNEL:	121	260	559	1,205

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Orange Tree to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 48,280 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,983 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.59	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.64	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.60	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	68.8	67.1	61.0	69.6	70.2
Medium Trucks:	63.5	62.8	56.4	54.9	63.3	63.6
Heavy Trucks:	63.9	63.3	54.3	55.5	63.9	64.0
Vehicle Noise:	71.6	70.7	67.6	62.8	71.4	71.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	104	224	483	1,041
CNEL:	112	241	519	1,118

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: I-405 SB Off-Ramp to Research

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 48,133 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,971 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.58	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.66	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.61	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.2	67.5	61.4	70.0	70.6
Medium Trucks:	63.9	63.2	56.8	55.3	63.7	64.0
Heavy Trucks:	64.3	63.7	54.7	55.9	64.3	64.4
Vehicle Noise:	72.0	71.1	68.0	63.2	71.8	72.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	105	227	489	1,054
CNEL:	113	244	525	1,132

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Irvine Valley College to Orange Tree

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,178 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,892 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.49	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.74	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.70	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	67.0	60.9	69.5	70.1
Medium Trucks:	63.4	62.7	56.3	54.8	63.2	63.5
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9
Vehicle Noise:	71.5	70.6	67.5	62.7	71.3	71.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	102	221	476	1,025
CNEL:	110	237	511	1,101



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Fontaine Avenue to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,870 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,702 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.28	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.96	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.92	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.8	60.7	69.3	69.9
Medium Trucks:	63.1	62.5	56.1	54.6	63.0	63.3
Heavy Trucks:	63.6	63.0	53.9	55.2	63.5	63.7
Vehicle Noise:	71.3	70.4	67.3	62.5	71.1	71.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	99	214	460	991
CNEL:	107	229	494	1,065

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Culver Drive to Deerwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,248 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,650 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.02	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.98	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.5	68.5	66.7	60.6	69.3	69.9	
Medium Trucks:	63.1	62.4	56.1	54.5	63.0	63.2	
Heavy Trucks:	63.5	62.9	53.9	55.1	63.5	63.6	
Vehicle Noise:	71.2	70.3	67.3	62.5	71.0	71.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	212	456	982
CNEL:	106	227	490	1,055

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Deerwood to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 43,804 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,614 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.17	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.07	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.02	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.5	68.4	66.6	60.6	69.2	69.8
Medium Trucks:	63.0	62.4	56.0	54.5	62.9	63.2
Heavy Trucks:	63.5	62.9	53.8	55.1	63.4	63.6
Vehicle Noise:	71.2	70.3	67.2	62.4	71.0	71.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	210	453	976
CNEL:	105	226	486	1,048

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Yale Avenue to Fontaine Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,189 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,646 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.03	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.99	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.5	68.5	66.7	60.6	69.3	69.9	
Medium Trucks:	63.1	62.4	56.0	54.5	63.0	63.2	
Heavy Trucks:	63.5	62.9	53.9	55.1	63.5	63.6	
Vehicle Noise:	71.2	70.3	67.2	62.5	71.0	71.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	211	455	981
CNEL:	105	227	489	1,054

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Jeffrey Road to Irvine Valley College

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 43,078 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,554 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.10	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.14	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.10	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.4	68.3	66.6	60.5	69.1	69.7
Medium Trucks:	63.0	62.3	55.9	54.4	62.9	63.1
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	71.1	70.2	67.1	62.4	70.9	71.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	96	208	448	965
CNEL:	104	223	481	1,036

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Alton Parkway to Spectrum

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 40,201 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,317 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.80	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.44	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.40	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.3	60.2	68.8	69.4
Medium Trucks:	62.7	62.0	55.6	54.1	62.5	62.8
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	70.8	69.9	66.8	62.1	70.6	71.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	428	921
CNEL:	99	213	459	990

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Spectrum to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,643 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,271 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.74	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.50	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.46	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	68.0	66.2	60.2	68.8	69.4
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	63.0	62.4	53.4	54.7	63.0	63.1
Vehicle Noise:	70.7	69.8	66.8	62.0	70.5	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	197	424	913
CNEL:	98	211	455	981

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Hearthstone to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 38,654 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,189 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.63	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.61	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.57	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.9	66.1	60.1	68.7	69.3
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0
Vehicle Noise:	70.6	69.7	66.7	61.9	70.4	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	193	417	897
CNEL:	96	208	448	964



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Charter to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 36,795 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,036 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.41	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.82	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.78	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.7	65.9	59.8	68.5	69.1
Medium Trucks:	62.3	61.6	55.2	53.7	62.2	62.4
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.4	69.5	66.5	61.7	70.2	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	187	403	868
CNEL:	93	201	433	933

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Jamboree Road to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 35,164 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,901 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.22	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.02	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.98	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.5	65.7	59.6	68.3	68.9	
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2	
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6	
Vehicle Noise:	70.2	69.3	66.3	61.5	70.0	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	182	391	843
CNEL:	91	195	420	905

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Pacifica to Entertainment (Enterprise/Fortune)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 35,691 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,944 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.28	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.96	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.91	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	68.9
Medium Trucks:	62.2	61.5	55.1	53.6	62.0	62.3
Heavy Trucks:	62.6	62.0	52.9	54.2	62.6	62.7
Vehicle Noise:	70.3	69.4	66.3	61.5	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	183	395	851
CNEL:	91	197	424	914

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 35,398 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,920 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.25	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.99	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.95	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.7	59.7	68.3	68.9
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2
Heavy Trucks:	62.5	61.9	52.9	54.2	62.5	62.6
Vehicle Noise:	70.2	69.3	66.3	61.5	70.0	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	182	393	846
CNEL:	91	196	422	909

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Harvard Avenue to Hearthstone

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,081 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,729 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.95	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.29	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.24	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.2	65.4	59.4	68.0	68.6
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	62.2	61.7	52.6	53.9	62.2	62.3
Vehicle Noise:	70.0	69.0	66.0	61.2	69.8	70.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	376	809
CNEL:	87	187	403	869

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Research to Hubble

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,315 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,584 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.52	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.48	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	67.0	65.2	59.1	67.8	68.4
Medium Trucks:	61.6	60.9	54.5	53.0	61.5	61.7
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	69.7	68.8	65.8	61.0	69.5	70.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	168	362	780
CNEL:	84	181	389	838

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Barranca Parkway to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,428 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,510 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.59	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.65	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.61	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.9	66.8	65.1	59.0	67.6	68.2	
Medium Trucks:	61.5	60.8	54.4	52.9	61.3	61.6	
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0	
Vehicle Noise:	69.6	68.7	65.6	60.8	69.4	69.9	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	355	765
CNEL:	82	177	382	822

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Bake Parkway to Muller

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 30,410 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,509 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.59	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.65	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.61	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.9	66.8	65.1	59.0	67.6	68.2	
Medium Trucks:	61.5	60.8	54.4	52.9	61.3	61.6	
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0	
Vehicle Noise:	69.6	68.7	65.6	60.8	69.4	69.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	165	355	765
CNEL:	82	177	381	822



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Discovery to Charter

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,581 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,523 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.61	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.63	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.58	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.9	65.1	59.0	67.7	68.3
Medium Trucks:	61.5	60.8	54.4	52.9	61.4	61.6
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	69.6	68.7	65.7	60.9	69.4	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	356	768
CNEL:	82	178	383	825

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Hubble to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,602 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,360 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.32	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.92	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.87	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.6	64.8	58.7	67.4	68.0
Medium Trucks:	61.2	60.5	54.2	52.6	61.1	61.3
Heavy Trucks:	61.6	61.0	52.0	53.2	61.6	61.7
Vehicle Noise:	69.3	68.4	65.4	60.6	69.1	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	158	341	734
CNEL:	79	170	366	789

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Muller to Tesla

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,299 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,252 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.12	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.08	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.4	64.6	58.5	67.2	67.8
Medium Trucks:	61.0	60.3	54.0	52.4	60.9	61.1
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5
Vehicle Noise:	69.1	68.2	65.2	60.4	68.9	69.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	153	330	712
CNEL:	76	165	355	765

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Sand Canyon Avenue to Odyssey

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,025 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,147 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.91	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.33	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.28	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.2	66.2	64.4	58.3	67.0	67.6	
Medium Trucks:	60.8	60.1	53.7	52.2	60.7	60.9	
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3	
Vehicle Noise:	68.9	68.0	65.0	60.2	68.7	69.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	149	320	689
CNEL:	74	160	344	741

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Tesla to Scientific Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,537 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,107 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.83	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.41	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.37	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.1	64.3	58.2	66.9	67.5
Medium Trucks:	60.7	60.0	53.7	52.1	60.6	60.8
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2
Vehicle Noise:	68.8	67.9	64.9	60.1	68.6	69.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	147	316	681
CNEL:	73	158	339	731

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Scientific Way to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,377 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,011 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.63	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.61	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.57	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.9	65.9	64.1	58.0	66.7	67.3
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	60.9	60.3	51.3	52.5	60.9	61.0
Vehicle Noise:	68.6	67.7	64.7	59.9	68.4	68.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	142	306	660
CNEL:	71	153	329	709

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Gateway Boulevard to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,257 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,919 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.42	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.82	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.77	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.8	66.5	67.1
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4
Heavy Trucks:	60.7	60.1	51.1	52.3	60.7	60.8
Vehicle Noise:	68.4	67.5	64.5	59.7	68.2	68.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	138	297	640
CNEL:	69	148	319	687

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Laguna Canyon Road to Discovery

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,090 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,905 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.39	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.85	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.80	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.7	65.6	63.9	57.8	66.4	67.0	
Medium Trucks:	60.3	59.6	53.2	51.7	60.1	60.4	
Heavy Trucks:	60.7	60.1	51.1	52.3	60.7	60.8	
Vehicle Noise:	68.4	67.5	64.4	59.6	68.2	68.7	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	137	295	637
CNEL:	68	147	317	684



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Odyssey to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,690 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,872 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.31	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.92	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.88	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.6	63.8	57.7	66.4	67.0
Medium Trucks:	60.2	59.5	53.1	51.6	60.1	60.3
Heavy Trucks:	60.6	60.0	51.0	52.2	60.6	60.7
Vehicle Noise:	68.3	67.4	64.4	59.6	68.1	68.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	292	629
CNEL:	68	146	314	676

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive (Edinger)  
 Road Segment: Redhill Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,103 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,226 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.68	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.56	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.52	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	67.9	66.2	60.1	68.7	69.3
Medium Trucks:	62.5	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	63.0	62.4	53.3	54.6	62.9	63.1
Vehicle Noise:	70.7	69.8	66.7	61.9	70.5	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	195	420	904
CNEL:	97	209	451	972

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: I-5 SB Off-Ramp to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 69,825 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,761 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.78	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-12.46	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-16.41	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.7	71.6	69.8	63.8	72.4	73.0
Medium Trucks:	66.1	65.4	59.0	57.5	65.9	66.2
Heavy Trucks:	66.1	65.5	56.5	57.7	66.1	66.2
Vehicle Noise:	74.2	73.3	70.4	65.5	74.0	74.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	156	337	725	1,562
CNEL:	168	362	780	1,681

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 81,685 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 6,739 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.46	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-11.77	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-15.73	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.8	72.7	70.9	64.9	73.5	74.1
Medium Trucks:	67.1	66.5	60.1	58.6	67.0	67.3
Heavy Trucks:	67.2	66.6	57.6	58.8	67.2	67.3
Vehicle Noise:	75.3	74.4	71.5	66.6	75.1	75.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	176	379	817	1,759
CNEL:	189	408	878	1,893

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Walnut Avenue to Michelle Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 60,362 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,980 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.04	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.0	71.0	69.2	63.1	71.8	72.4	
Medium Trucks:	65.4	64.7	58.4	56.8	65.3	65.5	
Heavy Trucks:	65.5	64.9	55.8	57.1	65.4	65.6	
Vehicle Noise:	73.6	72.7	69.7	64.9	73.4	73.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	142	305	658	1,418
CNEL:	153	329	708	1,525

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: I-405 NB Off-Ramp to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 81,725 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 6,742 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.47	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-11.77	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-15.73	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	75.1	74.1	72.3	66.3	74.9	75.5
Medium Trucks:	68.5	67.9	61.5	60.0	68.4	68.6
Heavy Trucks:	68.6	68.0	58.9	60.2	68.5	68.7
Vehicle Noise:	76.7	75.8	72.8	68.0	76.5	77.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	272	585	1,261	2,718
CNEL:	292	630	1,357	2,924

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Michelle Drive to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 57,750 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,764 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.96	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.28	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.24	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.8	70.8	69.0	63.0	71.6	72.2
Medium Trucks:	65.2	64.6	58.2	56.7	65.1	65.3
Heavy Trucks:	65.3	64.7	55.6	56.9	65.2	65.4
Vehicle Noise:	73.4	72.5	69.5	64.7	73.2	73.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	138	297	639	1,376
CNEL:	148	319	687	1,481

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Main Street to Kelvin Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 70,902 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,849 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.85	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.39	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.35	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.5	73.5	71.7	65.6	74.3	74.9
Medium Trucks:	67.9	67.2	60.9	59.3	67.8	68.0
Heavy Trucks:	67.9	67.4	58.3	59.6	67.9	68.0
Vehicle Noise:	76.1	75.2	72.2	67.3	75.9	76.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	247	533	1,147	2,472
CNEL:	266	573	1,234	2,659



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 87,488 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 7,218 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 130 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 88.792 Medium Trucks: 88.747 Heavy Trucks: 88.792																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.76	-3.84	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-11.48	-3.84	-1.20	-4.96	0.000	0.000
Heavy Trucks:	86.40	-15.43	-3.84	-1.20	-5.14	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.5	71.4	69.7	63.6	72.2	72.8
Medium Trucks:	65.9	65.2	58.9	57.3	65.8	66.0
Heavy Trucks:	65.9	65.3	56.3	57.5	65.9	66.0
Vehicle Noise:	74.1	73.1	70.2	65.3	73.9	74.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	199	430	925	1,994
CNEL:	214	462	996	2,145

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Kelvin Avenue to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 65,797 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,428 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.52	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.71	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.67	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	74.2	73.1	71.4	65.3	73.9	74.5	
Medium Trucks:	67.6	66.9	60.6	59.0	67.5	67.7	
Heavy Trucks:	67.6	67.0	58.0	59.2	67.6	67.7	
Vehicle Noise:	75.8	74.8	71.9	67.0	75.6	76.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	235	507	1,092	2,352
CNEL:	253	545	1,174	2,530

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 65,261 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,384 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.49	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.75	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.71	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.2	73.1	71.3	65.3	73.9	74.5
Medium Trucks:	67.6	66.9	60.5	59.0	67.4	67.7
Heavy Trucks:	67.6	67.0	58.0	59.2	67.6	67.7
Vehicle Noise:	75.7	74.8	71.9	67.0	75.5	76.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	234	504	1,086	2,339
CNEL:	252	542	1,168	2,516

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Birch Street to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 48,881 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,033 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.23	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.00	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.96	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	70.1	68.3	62.2	70.9	71.5
Medium Trucks:	64.5	63.8	57.5	55.9	64.4	64.6
Heavy Trucks:	64.5	64.0	54.9	56.2	64.5	64.6
Vehicle Noise:	72.7	71.8	68.8	63.9	72.5	73.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	265	572	1,232
CNEL:	132	285	615	1,325

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Dupont Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 54,705 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,513 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.72	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.52	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.47	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.0	71.0	69.2	63.1	71.8	72.4
Medium Trucks:	65.4	64.7	58.4	56.8	65.3	65.5
Heavy Trucks:	65.4	64.9	55.8	57.1	65.4	65.5
Vehicle Noise:	73.6	72.7	69.7	64.8	73.4	73.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	135	290	625	1,347
CNEL:	145	312	672	1,449

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Alton Parkway to Beckman

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 59,551 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,913 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.09	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.15	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.10	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.8	72.7	70.9	64.9	73.5	74.1
Medium Trucks:	67.2	66.5	60.1	58.6	67.0	67.3
Heavy Trucks:	67.2	66.6	57.6	58.8	67.2	67.3
Vehicle Noise:	75.3	74.4	71.5	66.6	75.1	75.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	220	474	1,021	2,201
CNEL:	237	510	1,099	2,367

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Fairchild Road to Birch Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 50,091 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,133 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.34	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.90	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.85	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.6	70.6	68.8	62.7	71.4	72.0
Medium Trucks:	65.0	64.4	58.0	56.4	64.9	65.1
Heavy Trucks:	65.1	64.5	55.4	56.7	65.0	65.2
Vehicle Noise:	73.2	72.3	69.3	64.5	73.0	73.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	127	274	589	1,270
CNEL:	137	294	634	1,366

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Beckman to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 55,555 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,583 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.79	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.45	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.40	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.5	72.4	70.6	64.6	73.2	73.8
Medium Trucks:	66.9	66.2	59.8	58.3	66.7	67.0
Heavy Trucks:	66.9	66.3	57.3	58.5	66.9	67.0
Vehicle Noise:	75.0	74.1	71.2	66.3	74.8	75.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	210	453	975	2,101
CNEL:	226	487	1,049	2,260



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: I-5 NB Off-Ramp to El Camino Real

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 52,710 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,349 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.56	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.68	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.63	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.2	72.2	70.4	64.3	73.0	73.6	
Medium Trucks:	66.6	66.0	59.6	58.0	66.5	66.7	
Heavy Trucks:	66.7	66.1	57.0	58.3	66.6	66.8	
Vehicle Noise:	74.8	73.9	70.9	66.1	74.6	75.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	203	437	942	2,029
CNEL:	218	470	1,013	2,182

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Campus Drive to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,225 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,814 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	69.914			
Road Grade: 0.0%	Medium Trucks:	69.857			
Left View: -90.0 degrees	Heavy Trucks:	69.914			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.99	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.25	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.20	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.3	70.2	68.5	62.4	71.0	71.6
Medium Trucks:	64.7	64.0	57.6	56.1	64.6	64.8
Heavy Trucks:	64.7	64.1	55.1	56.3	64.7	64.8
Vehicle Noise:	72.9	71.9	69.0	64.1	72.7	73.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	120	259	559	1,204
CNEL:	129	279	601	1,295

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: El Camino Real to West Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 51,075 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,214 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.42	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.81	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.77	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.1	72.0	70.3	64.2	72.8	73.4
Medium Trucks:	66.5	65.8	59.5	57.9	66.4	66.6
Heavy Trucks:	66.5	65.9	56.9	58.1	66.5	66.6
Vehicle Noise:	74.7	73.7	70.8	65.9	74.5	74.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	199	428	922	1,987
CNEL:	214	460	992	2,137

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: West Drive to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 51,212 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,225 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.44	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.80	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.76	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.1	72.0	70.3	64.2	72.8	73.5
Medium Trucks:	66.5	65.8	59.5	57.9	66.4	66.6
Heavy Trucks:	66.5	65.9	56.9	58.2	66.5	66.6
Vehicle Noise:	74.7	73.8	70.8	65.9	74.5	75.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	199	429	924	1,990
CNEL:	214	461	994	2,141

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Bryan Avenue to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,448 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,914 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 56.593				
Road Grade: 0.0%	Medium Trucks: 56.522				
Left View: -90.0 degrees	Heavy Trucks: 56.593				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.10	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-14.13	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-18.09	-0.91	-1.20	-5.16	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.8	71.7	69.9	63.9	72.5	73.1	
Medium Trucks:	66.2	65.5	59.1	57.6	66.0	66.3	
Heavy Trucks:	66.2	65.6	56.6	57.8	66.2	66.3	
Vehicle Noise:	74.4	73.4	70.5	65.6	74.2	74.6	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	189	407	878	1,891
CNEL:	203	438	944	2,035

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Koll Center to Fairchild Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 42,241 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,485 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.60	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.64	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.59	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.9	69.8	68.1	62.0	70.6	71.2
Medium Trucks:	64.3	63.6	57.2	55.7	64.2	64.4
Heavy Trucks:	64.3	63.7	54.7	55.9	64.3	64.4
Vehicle Noise:	72.5	71.5	68.6	63.7	72.3	72.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	244	526	1,133
CNEL:	122	263	566	1,219

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: MacArthur Boulevard to Koll Center

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 41,473 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,422 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.52	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.72	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.67	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.8	69.8	68.0	61.9	70.6	71.2	
Medium Trucks:	64.2	63.5	57.2	55.6	64.1	64.3	
Heavy Trucks:	64.2	63.6	54.6	55.9	64.2	64.3	
Vehicle Noise:	72.4	71.5	68.5	63.6	72.2	72.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	112	241	520	1,120
CNEL:	120	259	559	1,204

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Irvine Boulevard to Portola Pakway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,128 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,403 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.99	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.25	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.21	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	62.3	61.6	55.2	53.7	62.1	62.4
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.4	69.5	66.6	61.7	70.2	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	188	405	872
CNEL:	94	202	436	938



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Warner Avenue to Edinger Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 87,248 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 7,198 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 96 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.438 Medium Trucks: 42.344 Heavy Trucks: 42.439																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.75	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-11.49	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-15.44	0.96	-1.20	-5.31	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	77.3	76.2	74.5	68.4	77.0	77.6
Medium Trucks:	70.7	70.0	63.7	62.1	70.6	70.8
Heavy Trucks:	70.7	70.1	61.1	62.3	70.7	70.8
Vehicle Noise:	78.9	77.9	75.0	70.1	78.7	79.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	242	522	1,125	2,423
CNEL:	261	562	1,210	2,607

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 72,206 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,957 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 96 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.438 Medium Trucks: 42.344 Heavy Trucks: 42.439																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.93	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-12.31	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-16.27	0.96	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	76.5	75.4	73.6	67.6	76.2	76.8	
Medium Trucks:	69.9	69.2	62.8	61.3	69.8	70.0	
Heavy Trucks:	69.9	69.3	60.3	61.5	69.9	70.0	
Vehicle Noise:	78.1	77.1	74.2	69.3	77.9	78.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	214	460	991	2,136
CNEL:	230	495	1,067	2,298

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Edinger Avenue to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 66,688 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,502 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 96 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 64.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 64.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 42.438				
Road Grade: 0.0%	Medium Trucks: 42.344				
Left View: -90.0 degrees	Heavy Trucks: 42.439				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.58	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-12.66	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-16.61	0.96	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	76.1	75.1	73.3	67.2	75.9	76.5	
Medium Trucks:	69.5	68.9	62.5	60.9	69.4	69.6	
Heavy Trucks:	69.5	69.0	59.9	61.2	69.5	69.7	
Vehicle Noise:	77.7	76.8	73.8	69.0	77.5	78.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	203	436	940	2,026
CNEL:	218	469	1,012	2,179

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Walnut Avenue to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 56,176 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,635 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.49	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.3	68.2	66.4	60.4	69.0	69.6	
Medium Trucks:	63.0	62.4	56.0	54.4	62.9	63.1	
Heavy Trucks:	63.9	63.3	54.2	55.5	63.9	64.0	
Vehicle Noise:	71.1	70.2	67.1	62.4	70.9	71.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	208	449	967
CNEL:	104	223	481	1,037

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Jeffrey Road  
 Road Segment: I-5 NB Off-Ramp to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 63,037 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,201 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	5.21	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.03	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-15.98	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	69.1	67.4	61.3	69.9	70.5
Medium Trucks:	63.9	63.3	56.9	55.4	63.8	64.1
Heavy Trucks:	64.8	64.2	55.2	56.4	64.8	64.9
Vehicle Noise:	72.0	71.1	68.0	63.3	71.8	72.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	228	491	1,059
CNEL:	114	245	527	1,136

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Poplar (Meadows) to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 50,683 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,181 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.26	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.98	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.93	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.8	66.0	59.9	68.6	69.2
Medium Trucks:	62.6	61.9	55.5	54.0	62.5	62.7
Heavy Trucks:	63.4	62.8	53.8	55.1	63.4	63.5
Vehicle Noise:	70.7	69.8	66.6	61.9	70.5	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	194	419	903
CNEL:	97	209	449	968

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 49,443 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,079 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.08	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.04	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.7	65.9	59.8	68.5	69.1	
Medium Trucks:	62.5	61.8	55.4	53.9	62.4	62.6	
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4	
Vehicle Noise:	70.6	69.6	66.5	61.8	70.4	70.8	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	191	412	888
CNEL:	95	205	442	952

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Center Drive to Poplar (Meadows)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 48,484 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,000 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.07	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.17	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.12	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.6	65.8	59.7	68.4	69.0
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5
Heavy Trucks:	63.2	62.6	53.6	54.9	63.2	63.3
Vehicle Noise:	70.5	69.6	66.4	61.7	70.3	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	189	407	876
CNEL:	94	203	436	940



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Jeffrey Road  
 Road Segment: I-405 NB Off-Ramp to Quail Creek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 49,021 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,044 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.12	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.08	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.9	59.8	68.4	69.0
Medium Trucks:	62.4	61.8	55.4	53.9	62.3	62.6
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4
Vehicle Noise:	70.5	69.6	66.5	61.8	70.3	70.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	190	410	883
CNEL:	95	204	439	947

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Barranca Parkway to Irvine Valley College

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,228 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,896 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.96	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.28	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.24	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.5	65.7	59.6	68.3	68.9
Medium Trucks:	62.3	61.6	55.2	53.7	62.2	62.4
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	70.4	69.4	66.3	61.6	70.2	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	400	861
CNEL:	92	199	429	924

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Quail Creek to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,578 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,925 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.99	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.25	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.21	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.7	59.7	68.3	68.9
Medium Trucks:	62.3	61.6	55.3	53.7	62.2	62.4
Heavy Trucks:	63.1	62.6	53.5	54.8	63.1	63.3
Vehicle Noise:	70.4	69.5	66.3	61.7	70.2	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	186	402	865
CNEL:	93	200	431	928

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Valley College to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,665 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,685 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.48	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.2	65.4	59.4	68.0	68.6	
Medium Trucks:	62.0	61.4	55.0	53.5	61.9	62.1	
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0	
Vehicle Noise:	70.1	69.2	66.1	61.4	69.9	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	179	385	830
CNEL:	89	192	413	890

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Trabuco Road to Hideaway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 38,113 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,144 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.02	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.21	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.17	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.5	64.8	58.7	67.3	67.9
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	69.4	68.5	65.4	60.7	69.2	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	346	746
CNEL:	80	172	372	801

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Hideaway to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 38,065 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,140 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.02	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.22	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.18	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.5	64.8	58.7	67.3	67.9
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	69.4	68.5	65.4	60.7	69.2	69.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	346	746
CNEL:	80	172	371	800

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Roosevelt to Grove

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 40,531 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,344 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.29	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.95	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.90	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.2	65.4	59.4	68.0	68.6	
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1	
Heavy Trucks:	62.9	62.3	53.2	54.5	62.8	63.0	
Vehicle Noise:	70.1	69.2	66.0	61.4	69.9	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	170	366	789
CNEL:	85	182	393	846

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Grove to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,167 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,231 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.14	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.10	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.05	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.1	65.3	59.2	67.9	68.5
Medium Trucks:	61.9	61.2	54.8	53.3	61.8	62.0
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.0	69.0	65.9	61.2	69.8	70.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	358	771
CNEL:	83	178	384	827



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Bryan Avenue to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,277 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,415 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.88	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.36	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.32	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.4	63.6	57.6	66.2	66.8
Medium Trucks:	60.2	59.5	53.2	51.6	60.1	60.3
Heavy Trucks:	61.0	60.5	51.4	52.7	61.0	61.1
Vehicle Noise:	68.3	67.4	64.2	59.5	68.1	68.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	135	291	626
CNEL:	67	145	312	672

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Encore to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,766 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,218 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.09	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-18.33	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-22.29	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.5	62.4	60.6	54.6	63.2	63.8
Medium Trucks:	57.2	56.6	50.2	48.6	57.1	57.3
Heavy Trucks:	58.1	57.5	48.4	49.7	58.0	58.2
Vehicle Noise:	65.3	64.4	61.2	56.6	65.1	65.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	85	184	397
CNEL:	43	92	197	425

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Boulevard to Encore

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,204 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,172 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.26	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-18.50	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-22.46	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.3	62.2	60.5	54.4	63.0	63.6
Medium Trucks:	57.1	56.4	50.0	48.5	56.9	57.2
Heavy Trucks:	57.9	57.3	48.3	49.5	57.9	58.0
Vehicle Noise:	65.1	64.2	61.1	56.4	64.9	65.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	83	179	386
CNEL:	41	89	192	415

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Jeronimo Road  
 Road Segment: Goodyear to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,959 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	657 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.78	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.02	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.97	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.4	61.4	59.6	53.6	62.2	62.8
Medium Trucks:	56.2	55.5	49.2	47.6	56.1	56.3
Heavy Trucks:	57.0	56.4	47.4	48.7	57.0	57.1
Vehicle Noise:	64.3	63.4	60.2	55.5	64.1	64.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	117	252
CNEL:	27	58	125	270

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jeronimo Road  
 Road Segment: Alton Parkway to Goodyear

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,468 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 616 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.05	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.29	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.25	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.2	61.1	59.3	53.3	61.9	62.5
Medium Trucks:	55.9	55.2	48.9	47.3	55.8	56.0
Heavy Trucks:	56.8	56.2	47.1	48.4	56.7	56.9
Vehicle Noise:	64.0	63.1	59.9	55.3	63.8	64.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	112	241
CNEL:	26	56	120	259

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Old Laguna Canyon Road to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 53,875 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,445 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.66	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.58	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.54	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.5	68.7	62.7	71.3	71.9
Medium Trucks:	64.9	64.3	57.9	56.3	64.8	65.0
Heavy Trucks:	65.0	64.4	55.3	56.6	64.9	65.1
Vehicle Noise:	73.1	72.2	69.2	64.4	72.9	73.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	131	283	610	1,314
CNEL:	141	305	656	1,414

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Laguna Canyon Freeway to Quail Hill Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,794 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,386 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.41	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.64	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.60	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.1	65.3	59.2	67.9	68.5
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6
Heavy Trucks:	61.5	61.0	51.9	53.2	61.5	61.7
Vehicle Noise:	69.7	68.8	65.8	61.0	69.5	70.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	269	579
CNEL:	62	134	289	623

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Discovery to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,867 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,144 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.43	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.2	64.5	58.4	67.0	67.6
Medium Trucks:	60.7	60.0	53.7	52.1	60.6	60.8
Heavy Trucks:	60.7	60.1	51.1	52.3	60.7	60.8
Vehicle Noise:	68.9	67.9	65.0	60.1	68.7	69.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	110	237	510
CNEL:	55	118	255	548



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: I-405 Overcrossing to Pasteur

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,576 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 707 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.91	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-21.15	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.11	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.2	57.1	65.7	66.3
Medium Trucks:	59.6	58.9	52.5	51.0	59.5	59.7
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1
Vehicle Noise:	67.7	66.8	63.7	59.0	67.5	68.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	73	158	341
CNEL:	37	79	170	366

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Irvine Center Drive to Discovery

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,516 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 785 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-3.87	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-21.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-25.07	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.7	64.6	62.8	56.8	65.4	66.0	
Medium Trucks:	59.1	58.4	52.0	50.5	58.9	59.2	
Heavy Trucks:	59.1	58.5	49.5	50.7	59.1	59.2	
Vehicle Noise:	67.2	66.3	63.4	58.5	67.0	67.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	85	184	397
CNEL:	43	92	198	427

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Quail Hill Parkway to I-405 Overcrossing

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,576 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	707 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	50.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 42.814				
Road Grade:	0.0%	Medium Trucks: 42.720				
Left View:	-90.0 degrees	Heavy Trucks: 42.814				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.91	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-21.15	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.11	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.2	57.1	65.7	66.3
Medium Trucks:	59.6	58.9	52.5	51.0	59.5	59.7
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1
Vehicle Noise:	67.7	66.8	63.7	59.0	67.5	68.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	73	158	341
CNEL:	37	79	170	366

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Pasteur to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,455 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 698 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-4.39	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-21.63	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-25.58	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.1	62.3	56.3	64.9	65.5
Medium Trucks:	58.5	57.9	51.5	50.0	58.4	58.7
Heavy Trucks:	58.6	58.0	48.9	50.2	58.6	58.7
Vehicle Noise:	66.7	65.8	62.8	58.0	66.5	67.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	170	367
CNEL:	39	85	183	394

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Waterworks to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,346 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	606 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-5.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-22.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-26.19	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.5	63.5	61.7	55.7	64.3	64.9
Medium Trucks:	57.9	57.3	50.9	49.4	57.8	58.0
Heavy Trucks:	58.0	57.4	48.3	49.6	57.9	58.1
Vehicle Noise:	66.1	65.2	62.2	57.4	65.9	66.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	72	155	334
CNEL:	36	77	167	359

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,917 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	571 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-5.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-22.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-26.45	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.2	61.4	55.4	64.0	64.6
Medium Trucks:	57.7	57.0	50.6	49.1	57.6	57.8
Heavy Trucks:	57.7	57.1	48.1	49.3	57.7	57.8
Vehicle Noise:	65.9	64.9	62.0	57.1	65.7	66.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	149	321
CNEL:	34	74	160	345

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Barranca Parkway to Waterworks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,120 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	505 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-5.79	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-23.03	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-26.98	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.7	62.7	60.9	54.9	63.5	64.1
Medium Trucks:	57.1	56.5	50.1	48.6	57.0	57.3
Heavy Trucks:	57.2	56.6	47.5	48.8	57.1	57.3
Vehicle Noise:	65.3	64.4	61.4	56.6	65.1	65.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	137	296
CNEL:	32	68	148	318

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Lake Forest Drive  
 Road Segment: Hidden Canyon to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,173 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,582 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.42	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.66	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.61	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.5	64.7	58.7	67.3	67.9
Medium Trucks:	61.1	60.4	54.1	52.5	61.0	61.2
Heavy Trucks:	61.5	60.9	51.9	53.1	61.5	61.6
Vehicle Noise:	69.2	68.3	65.3	60.5	69.0	69.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	250	539
CNEL:	58	125	269	579



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Lake Forest Drive  
 Road Segment: Bake Parkway to Hidden Canyon (Romano)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,999 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,567 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.46	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.70	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.65	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.4	64.7	58.6	67.2	67.8
Medium Trucks:	61.1	60.4	54.0	52.5	60.9	61.2
Heavy Trucks:	61.5	60.9	51.9	53.1	61.5	61.6
Vehicle Noise:	69.2	68.3	65.2	60.4	69.0	69.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	115	249	536
CNEL:	58	124	267	576

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Lake Forest Drive  
 Road Segment: Tesla to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,318 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,181 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.69	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-18.92	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-22.88	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.6	61.8	55.7	64.4	65.0
Medium Trucks:	58.2	57.5	51.2	49.6	58.1	58.3
Heavy Trucks:	58.6	58.0	49.0	50.2	58.6	58.7
Vehicle Noise:	66.3	65.4	62.4	57.6	66.1	66.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	100	215	463
CNEL:	50	107	231	497

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Lake Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,144 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 507 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-2.35	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	70.80	-19.59	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	77.97	-23.54	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	56.1	55.0	53.3	47.2	55.8	56.4	
Medium Trucks:	50.9	50.3	43.9	42.4	50.8	51.0	
Heavy Trucks:	54.1	53.6	44.5	45.8	54.1	54.2	
Vehicle Noise:	59.0	58.1	54.2	50.3	58.8	59.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	42	90
CNEL:	10	21	44	95

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Lynx  
 Road Segment: Irvine Boulevard to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,246 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 103 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-9.28	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-26.52	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-30.47	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	50.1	49.0	47.3	41.2	49.8	50.4	
Medium Trucks:	44.9	44.3	37.9	36.4	44.8	45.0	
Heavy Trucks:	48.1	47.5	38.5	39.8	48.1	48.2	
Vehicle Noise:	53.0	52.1	48.2	44.3	52.8	53.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	3	6	12	27
CNEL:	3	6	13	28

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: I-405 SB Off-Ramp to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 61,683 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,089 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 60 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.87	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-13.37	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-17.33	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	75.0	73.9	72.1	66.1	74.7	75.3
Medium Trucks:	68.2	67.5	61.2	59.6	68.1	68.3
Heavy Trucks:	67.9	67.3	58.3	59.5	67.9	68.0
Vehicle Noise:	76.5	75.5	72.6	67.7	76.3	76.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	261	562	1,212	2,610
CNEL:	281	606	1,305	2,812

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Main Street to I-405 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 60,713 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,009 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 60 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.80	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-13.44	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-17.40	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.9	73.8	72.1	66.0	74.6	75.3
Medium Trucks:	68.1	67.5	61.1	59.6	68.0	68.3
Heavy Trucks:	67.8	67.2	58.2	59.4	67.8	67.9
Vehicle Noise:	76.4	75.5	72.6	67.6	76.2	76.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	258	556	1,199	2,583
CNEL:	278	599	1,291	2,782

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: I-405 NB Off-Ramp and I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 59,791 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,933 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 60 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 56.593				
Road Grade: 0.0%	Medium Trucks: 56.522				
Left View: -90.0 degrees	Heavy Trucks: 56.593				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.73	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-13.51	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-17.46	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.8	73.8	72.0	66.0	74.6	75.2
Medium Trucks:	68.1	67.4	61.0	59.5	68.0	68.2
Heavy Trucks:	67.8	67.2	58.1	59.4	67.7	67.9
Vehicle Noise:	76.3	75.4	72.5	67.6	76.1	76.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	256	551	1,187	2,557
CNEL:	275	593	1,278	2,754

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Jamboree Road to Fairchild Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,795 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,283 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.03	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.98	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	66.7	64.9	58.9	67.5	68.1	
Medium Trucks:	61.5	60.9	54.5	53.0	61.4	61.6	
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5	
Vehicle Noise:	69.6	68.7	65.6	60.9	69.4	69.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	357	768
CNEL:	82	178	382	824



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Fairchild Road to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,408 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,251 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.17	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.07	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.02	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.7	64.9	58.8	67.5	68.1
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6
Heavy Trucks:	62.3	61.7	52.7	54.0	62.3	62.4
Vehicle Noise:	69.6	68.7	65.5	60.8	69.4	69.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	164	354	763
CNEL:	82	176	380	819

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Fitch to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 41,553 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,428 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.40	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.84	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.79	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	62.1	61.5	55.1	53.5	62.0	62.2
Heavy Trucks:	63.0	62.4	53.3	54.6	63.0	63.1
Vehicle Noise:	70.2	69.3	66.2	61.5	70.0	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	173	372	802
CNEL:	86	185	399	860

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Michelson Drive to Douglas

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,212 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,730 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.77	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-13.47	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-17.43	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.1	67.3	61.2	69.9	70.5
Medium Trucks:	63.9	63.2	56.8	55.3	63.8	64.0
Heavy Trucks:	64.7	64.1	55.1	56.3	64.7	64.8
Vehicle Noise:	72.0	71.0	67.9	63.2	71.8	72.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	131	282	608	1,310
CNEL:	141	303	652	1,405

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Douglas to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,713 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.75	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-13.49	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-17.45	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.0	67.3	61.2	69.8	70.4
Medium Trucks:	63.9	63.2	56.8	55.3	63.7	64.0
Heavy Trucks:	64.7	64.1	55.1	56.3	64.7	64.8
Vehicle Noise:	71.9	71.0	67.9	63.2	71.7	72.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	131	281	606	1,306
CNEL:	140	302	650	1,401

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Skypark to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 33,180 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,737 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.42	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.82	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.77	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.3	64.6	58.5	67.1	67.7
Medium Trucks:	61.2	60.5	54.1	52.6	61.0	61.3
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	69.2	68.3	65.2	60.5	69.0	69.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	149	320	690
CNEL:	74	160	344	740

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Redhill Avenue to Skypark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,075 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,316 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.70	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.54	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.50	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.2	63.4	57.4	66.0	66.6
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1
Heavy Trucks:	60.9	60.3	51.2	52.5	60.8	61.0
Vehicle Noise:	68.1	67.2	64.0	59.4	67.9	68.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	283	609
CNEL:	65	141	303	653

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Birch Street to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,177 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,747 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.47	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.77	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.72	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.0	64.0	62.2	56.2	64.8	65.4
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9
Heavy Trucks:	59.6	59.0	50.0	51.3	59.6	59.7
Vehicle Noise:	66.9	66.0	62.8	58.1	66.7	67.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	109	234	504
CNEL:	54	117	251	541

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Campus Drive to Birch Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,909 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,972 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.00	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-16.24	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-20.20	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.3	64.5	58.5	67.1	67.7
Medium Trucks:	61.1	60.4	54.1	52.5	61.0	61.2
Heavy Trucks:	61.9	61.4	52.3	53.6	61.9	62.1
Vehicle Noise:	69.2	68.3	65.1	60.4	69.0	69.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	398	857
CNEL:	92	198	427	919



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Main Street  
 Road Segment: Gillette Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,818 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,697 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.73	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.51	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.47	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.9	59.8	68.4	69.0
Medium Trucks:	62.5	61.8	55.4	53.9	62.3	62.6
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4
Vehicle Noise:	70.5	69.6	66.5	61.8	70.3	70.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	182	391	843
CNEL:	90	195	420	905

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Main Street  
 Road Segment: MacArthur Boulevard to Mercantile

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,493 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,258 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.18	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.06	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.02	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	67.1	65.3	59.3	67.9	68.5	
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0	
Heavy Trucks:	62.7	62.2	53.1	54.4	62.7	62.9	
Vehicle Noise:	70.0	69.1	65.9	61.3	69.8	70.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	167	360	775
CNEL:	83	179	386	832

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Main Street  
 Road Segment: Executive Park to MacArthur Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,337 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,338 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.74	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.50	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.46	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.2	63.5	57.4	66.0	66.6
Medium Trucks:	60.1	59.4	53.0	51.5	59.9	60.2
Heavy Trucks:	60.9	60.3	51.3	52.5	60.9	61.0
Vehicle Noise:	68.1	67.2	64.1	59.4	67.9	68.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	284	613
CNEL:	66	142	305	657

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Main Street  
 Road Segment: Von Karman Avenue to Cartwright

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,170 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,324 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.48	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.3	65.2	63.4	57.4	66.0	66.6	
Medium Trucks:	60.0	59.4	53.0	51.5	59.9	60.1	
Heavy Trucks:	60.9	60.3	51.3	52.5	60.9	61.0	
Vehicle Noise:	68.1	67.2	64.1	59.4	67.9	68.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	283	610
CNEL:	65	141	304	654

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Main Street  
 Road Segment: McDermott to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,342 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,173 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.42	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.82	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.77	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.2	57.1	65.7	66.3
Medium Trucks:	59.7	59.1	52.7	51.2	59.6	59.9
Heavy Trucks:	60.6	60.0	51.0	52.2	60.6	60.7
Vehicle Noise:	67.8	66.9	63.8	59.1	67.6	68.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	126	271	583
CNEL:	63	135	290	626

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Main Street  
 Road Segment: Red Hill Avenue to Executive Circle

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,776 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,127 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.33	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.91	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.87	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.9	64.8	63.1	57.0	65.6	66.2	
Medium Trucks:	59.6	59.0	52.6	51.1	59.5	59.8	
Heavy Trucks:	60.5	59.9	50.9	52.1	60.5	60.6	
Vehicle Noise:	67.7	66.8	63.7	59.0	67.5	68.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	124	267	575
CNEL:	62	133	286	617

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Main Street  
 Road Segment: Jamboree Road to Union

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,761 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,043 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.04	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.7	64.7	62.9	56.8	65.5	66.1	
Medium Trucks:	59.5	58.8	52.4	50.9	59.4	59.6	
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4	
Vehicle Noise:	67.5	66.6	63.5	58.8	67.4	67.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	121	260	560
CNEL:	60	129	279	601

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Main Street  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,599 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,204 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.34	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.0	62.2	56.2	64.8	65.4
Medium Trucks:	58.8	58.2	51.8	50.3	58.7	58.9
Heavy Trucks:	59.7	59.1	50.0	51.3	59.7	59.8
Vehicle Noise:	66.9	66.0	62.9	58.2	66.7	67.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	175	377
CNEL:	40	87	188	405



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Main Street  
 Road Segment: Siglo to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,041 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,983 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.02	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.22	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.17	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.6	64.5	62.8	56.7	65.3	65.9	
Medium Trucks:	59.3	58.7	52.3	50.8	59.2	59.5	
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3	
Vehicle Noise:	67.4	66.5	63.4	58.7	67.2	67.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	255	549
CNEL:	59	127	273	589

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Main Street  
 Road Segment: Veneto to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,207 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,915 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.87	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.37	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.32	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.4	64.4	62.6	56.5	65.2	65.8
Medium Trucks:	59.2	58.5	52.2	50.6	59.1	59.3
Heavy Trucks:	60.0	59.4	50.4	51.7	60.0	60.1
Vehicle Noise:	67.3	66.4	63.2	58.5	67.1	67.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	249	536
CNEL:	58	124	267	575

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Main Street  
 Road Segment: Paseo Westpark to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,068 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 996 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.97	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.21	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.16	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.2	63.2	61.4	55.4	64.0	64.6	
Medium Trucks:	58.0	57.3	51.0	49.4	57.9	58.1	
Heavy Trucks:	58.8	58.3	49.2	50.5	58.8	59.0	
Vehicle Noise:	66.1	65.2	62.0	57.3	65.9	66.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	72	154	332
CNEL:	36	77	166	357

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Main Street  
 Road Segment: Harvard Avenue to San Mateo

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,928 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 984 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.22	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.2	63.1	61.4	55.3	63.9	64.5	
Medium Trucks:	58.0	57.3	50.9	49.4	57.8	58.1	
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9	
Vehicle Noise:	66.0	65.1	62.0	57.3	65.8	66.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	330
CNEL:	35	76	164	354

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Marine Way  
 Road Segment: Sand Canyon Avenue to Ridge Valley (O Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,541 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,345 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 42.814				
Road Grade: 0.0%	Medium Trucks: 42.720				
Left View: -90.0 degrees	Heavy Trucks: 42.814				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.80	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	77.72	-13.43	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	82.99	-17.39	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	69.0	67.2	61.1	69.8	70.4
Medium Trucks:	64.0	63.3	57.0	55.4	63.9	64.1
Heavy Trucks:	65.3	64.7	55.7	56.9	65.3	65.4
Vehicle Noise:	72.0	71.1	67.9	63.3	71.8	72.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	143	308	664
CNEL:	71	153	330	711

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Marine Way  
 Road Segment: Alton Parkway to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,983 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,639 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.77	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-14.46	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-18.42	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.0	66.0	64.2	58.2	66.8	67.4	
Medium Trucks:	61.0	60.3	54.0	52.4	60.9	61.1	
Heavy Trucks:	62.3	61.7	52.7	54.0	62.3	62.4	
Vehicle Noise:	69.0	68.2	64.9	60.3	68.9	69.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	113	244	525
CNEL:	56	121	261	562

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Marine Way  
 Road Segment: Lynx to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,277 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,663 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-14.42	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-18.38	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.0	64.2	58.2	66.8	67.4
Medium Trucks:	61.1	60.4	54.0	52.5	60.9	61.2
Heavy Trucks:	62.4	61.8	52.7	54.0	62.4	62.5
Vehicle Noise:	69.1	68.2	64.9	60.4	68.9	69.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	245	528
CNEL:	57	122	262	565

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Marine Way  
 Road Segment: County Access to Treble

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,072 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,151 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.89	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.31	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.2	65.1	63.3	57.3	65.9	66.5	
Medium Trucks:	60.1	59.5	53.1	51.5	60.0	60.2	
Heavy Trucks:	61.4	60.9	51.8	53.1	61.4	61.5	
Vehicle Noise:	68.2	67.3	64.0	59.4	68.0	68.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	99	213	458
CNEL:	49	106	228	490



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Marine Way  
 Road Segment: Ridge Valley (O Street) to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,784 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,045 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.67	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.57	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.53	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.9	63.1	57.0	65.7	66.3
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	67.9	67.0	63.8	59.2	67.8	68.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	95	205	443
CNEL:	47	102	220	474

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Marine Way  
 Road Segment: Skyhawk to County Access

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,473 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,607 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.62	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.62	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.57	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	63.8	62.1	56.0	64.6	65.2
Medium Trucks:	58.9	58.2	51.8	50.3	58.7	59.0
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3
Vehicle Noise:	66.9	66.0	62.7	58.2	66.7	67.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	175	377
CNEL:	40	87	187	404

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Marine Way  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,909 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,478 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.94	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.5	63.5	61.7	55.6	64.3	64.9	
Medium Trucks:	58.5	57.8	51.5	49.9	58.4	58.6	
Heavy Trucks:	59.8	59.2	50.2	51.4	59.8	59.9	
Vehicle Noise:	66.5	65.6	62.4	57.8	66.3	66.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	165	356
CNEL:	38	82	177	382

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Marine Way  
 Road Segment: Treble to Lynx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,505 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,362 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.29	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.1	61.3	55.3	63.9	64.5
Medium Trucks:	58.1	57.5	51.1	49.6	58.0	58.3
Heavy Trucks:	59.5	58.9	49.8	51.1	59.4	59.6
Vehicle Noise:	66.2	65.3	62.0	57.5	66.0	66.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	73	157	338
CNEL:	36	78	168	361

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: McGaw Avenue  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,966 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,152 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-0.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-17.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-21.44	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.8	60.7	59.0	52.9	61.5	62.2	
Medium Trucks:	56.0	55.4	49.0	47.4	55.9	56.1	
Heavy Trucks:	57.9	57.3	48.3	49.5	57.9	58.0	
Vehicle Noise:	64.0	63.2	59.7	55.3	63.9	64.3	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	113	243
CNEL:	26	56	121	260

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: McGaw Avenue  
 Road Segment: Red Hill Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,754 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,135 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 35 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-0.31	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-17.55	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-21.50	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.7	60.7	58.9	52.9	61.5	62.1
Medium Trucks:	56.0	55.3	48.9	47.4	55.8	56.1
Heavy Trucks:	57.8	57.2	48.2	49.4	57.8	57.9
Vehicle Noise:	64.0	63.1	59.7	55.3	63.8	64.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	112	241
CNEL:	26	55	119	257

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: McGaw Avenue  
 Road Segment: Daimler to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,179 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	757 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-2.07	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-19.31	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-23.26	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.0	58.9	57.2	51.1	59.7	60.3
Medium Trucks:	54.2	53.5	47.2	45.6	54.1	54.3
Heavy Trucks:	56.1	55.5	46.4	47.7	56.0	56.2
Vehicle Noise:	62.2	61.3	57.9	53.5	62.0	62.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	40	85	184
CNEL:	20	42	91	197

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: McGaw Avenue  
 Road Segment: Jamboree Road to Murphy Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,528 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	374 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-22.37	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-26.33	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.9	55.9	54.1	48.0	56.7	57.3
Medium Trucks:	51.1	50.5	44.1	42.6	51.0	51.3
Heavy Trucks:	53.0	52.4	43.4	44.6	53.0	53.1
Vehicle Noise:	59.1	58.3	54.8	50.4	59.0	59.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	25	53	115
CNEL:	12	26	57	123



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Meadowood  
 Road Segment: Culver Drive to Canyonwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,920 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 901 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 25 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	0.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-17.09	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-21.05	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.6	55.6	53.8	47.8	56.4	57.0
Medium Trucks:	51.5	50.8	44.4	42.9	51.3	51.6
Heavy Trucks:	54.7	54.1	45.1	46.3	54.7	54.8
Vehicle Noise:	59.5	58.7	54.8	50.9	59.4	59.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	26	57	122
CNEL:	13	28	60	130

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Meridian  
 Road Segment: Spectrum to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,685 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	222 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-6.74	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-23.97	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-27.93	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.8	51.7	49.9	43.9	52.5	53.1
Medium Trucks:	47.3	46.6	40.2	38.7	47.1	47.4
Heavy Trucks:	49.7	49.2	40.1	41.4	49.7	49.9
Vehicle Noise:	55.3	54.4	50.8	46.6	55.1	55.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	14	29	64
CNEL:	7	15	31	68

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Meridian  
 Road Segment: Alton Parkway to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,205 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 182 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-7.59	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-24.83	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-28.79	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	51.9	50.9	49.1	43.0	51.7	52.3	
Medium Trucks:	46.4	45.7	39.4	37.8	46.3	46.5	
Heavy Trucks:	48.9	48.3	39.3	40.5	48.9	49.0	
Vehicle Noise:	54.4	53.6	49.9	45.7	54.2	54.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	12	26	56
CNEL:	6	13	28	59

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Merit  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,731 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 308 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-4.52	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-21.75	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-25.71	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	54.9	53.8	52.0	46.0	54.6	55.2	
Medium Trucks:	49.7	49.0	42.7	41.1	49.6	49.8	
Heavy Trucks:	52.9	52.3	43.3	44.5	52.9	53.0	
Vehicle Noise:	57.7	56.9	53.0	49.1	57.6	58.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	12	26	56
CNEL:	6	13	27	59

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Michelson Drive  
 Road Segment: Riparian to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,198 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,079 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.74	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.46	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.2	57.1	65.7	66.3
Medium Trucks:	60.0	59.3	52.9	51.4	59.9	60.1
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4
Vehicle Noise:	68.0	67.1	63.8	59.3	67.8	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	96	208	448
CNEL:	48	103	222	479

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Michelson Drive  
 Road Segment: Almond Tree Lane to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,921 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	818 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.31	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-19.55	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-23.50	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.8	63.8	62.0	56.0	64.6	65.2
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9
Heavy Trucks:	60.1	59.5	50.5	51.8	60.1	60.2
Vehicle Noise:	66.8	66.0	62.7	58.1	66.7	67.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	48	104	225
CNEL:	24	52	112	240

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Michelson Drive  
 Road Segment: Von Karman Avenue to Obsidian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,736 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,958 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.48	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.76	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.71	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.7	62.9	56.9	65.5	66.1
Medium Trucks:	59.7	59.0	52.7	51.1	59.6	59.8
Heavy Trucks:	61.0	60.4	51.4	52.7	61.0	61.1
Vehicle Noise:	67.8	66.9	63.6	59.0	67.6	68.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	93	200	430
CNEL:	46	99	214	461

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Michelson Drive  
 Road Segment: Parkside to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,429 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,850 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.01	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.96	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.5	64.4	62.7	56.6	65.2	65.8
Medium Trucks:	59.5	58.8	52.4	50.9	59.4	59.6
Heavy Trucks:	60.8	60.2	51.2	52.4	60.8	60.9
Vehicle Noise:	67.5	66.6	63.3	58.8	67.3	67.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	89	192	414
CNEL:	44	96	206	443



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Michelson Drive  
 Road Segment: Gillman to Seton/Sandburg Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,208 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	760 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.63	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-19.87	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-23.83	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.5	63.4	61.7	55.6	64.3	64.9
Medium Trucks:	58.5	57.8	51.5	49.9	58.4	58.6
Heavy Trucks:	59.8	59.2	50.2	51.4	59.8	59.9
Vehicle Noise:	66.5	65.6	62.3	57.8	66.3	66.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	46	99	214
CNEL:	23	49	106	229

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Michelson Drive  
 Road Segment: Carlson to Prince

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,093 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,235 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 75.0 feet Centerline Dist. to Observer: 75.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 70.413 Medium Trucks: 70.356 Heavy Trucks: 70.413																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.05	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	77.72	-15.18	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	82.99	-19.14	-2.33	-1.20	-5.25	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.0	64.0	62.2	56.1	64.8	65.4
Medium Trucks:	59.0	58.3	52.0	50.4	58.9	59.1
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	67.0	66.1	62.9	58.3	66.9	67.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	100	215	463
CNEL:	50	107	230	495

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Michelson Drive  
 Road Segment: MacArthur Boulevard to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,337 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,678 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.39	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.1	64.0	62.2	56.2	64.8	65.4	
Medium Trucks:	59.0	58.4	52.0	50.5	58.9	59.2	
Heavy Trucks:	60.4	59.8	50.7	52.0	60.3	60.5	
Vehicle Noise:	67.1	66.2	62.9	58.4	66.9	67.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	180	388
CNEL:	42	90	193	415

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Michelson Drive  
 Road Segment: Harvard Avenue to Parkside

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 18,003 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,485 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.96	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.92	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.5	63.5	61.7	55.7	64.3	64.9
Medium Trucks:	58.5	57.8	51.5	49.9	58.4	58.6
Heavy Trucks:	59.8	59.2	50.2	51.5	59.8	59.9
Vehicle Noise:	66.6	65.7	62.4	57.8	66.4	66.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	166	358
CNEL:	38	83	178	383

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Michelson Drive  
 Road Segment: Bixby to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,647 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,456 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.00	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.5	63.4	61.6	55.6	64.2	64.8
Medium Trucks:	58.4	57.8	51.4	49.9	58.3	58.5
Heavy Trucks:	59.7	59.2	50.1	51.4	59.7	59.9
Vehicle Noise:	66.5	65.6	62.3	57.7	66.3	66.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	164	353
CNEL:	38	81	175	378

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Michelson Drive  
 Road Segment: Jamboree Road to Carlson

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,364 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,093 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.77	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.47	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.43	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.3	66.3	64.5	58.4	67.1	67.7	
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4	
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7	
Vehicle Noise:	69.3	68.4	65.2	60.6	69.2	69.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	245	527
CNEL:	56	122	262	564

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Michelson Drive  
 Road Segment: Teller to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,600 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,112 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.81	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.43	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.39	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.3	64.5	58.5	67.1	67.7
Medium Trucks:	61.4	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	62.7	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	69.4	68.5	65.2	60.7	69.2	69.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	246	530
CNEL:	57	122	264	568

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Michelson Drive  
 Road Segment: Jordan East to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,782 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 560 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 29.547 Medium Trucks: 29.411 Heavy Trucks: 29.547																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.96	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	77.72	-21.20	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	82.99	-25.16	3.32	-1.20	-5.77	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.7	63.6	61.8	55.8	64.4	65.0	
Medium Trucks:	58.7	58.0	51.6	50.1	58.6	58.8	
Heavy Trucks:	60.0	59.4	50.3	51.6	59.9	60.1	
Vehicle Noise:	66.7	65.8	62.5	58.0	66.5	66.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	38	81	175
CNEL:	19	40	87	188



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Michelson Drive  
 Road Segment: Culver Drive to Angell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,789 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 725 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 16 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 39.306 Medium Trucks: 39.205 Heavy Trucks: 39.307																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.84	1.46	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-20.07	1.48	-1.20	-5.08	0.000	0.000
Heavy Trucks:	82.99	-24.03	1.46	-1.20	-5.56	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.9	62.9	61.1	55.1	63.7	64.3
Medium Trucks:	57.9	57.2	50.9	49.3	57.8	58.0
Heavy Trucks:	59.2	58.6	49.6	50.9	59.2	59.3
Vehicle Noise:	65.9	65.1	61.8	57.2	65.8	66.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	45	97	209
CNEL:	22	48	104	223

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Modjeska (A Street)  
 Road Segment: Portola Springs to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,817 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,140 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 24 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 30.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 30.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 27.659				
Road Grade: 0.0%	Medium Trucks: 27.514				
Left View: -90.0 degrees	Heavy Trucks: 27.659				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.38	3.75	-1.20	-4.81	0.000	0.000
Medium Trucks:	79.45	-18.62	3.79	-1.20	-5.14	0.000	0.000
Heavy Trucks:	84.25	-22.58	3.75	-1.20	-5.77	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.6	66.8	60.7	69.4	70.0
Medium Trucks:	63.4	62.7	56.4	54.8	63.3	63.5
Heavy Trucks:	64.2	63.6	54.6	55.9	64.2	64.3
Vehicle Noise:	71.5	70.6	67.4	62.7	71.3	71.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	169	365
CNEL:	39	84	182	392

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Modjeska (A Street)  
 Road Segment: South of Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,834 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 151 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-10.15	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-27.39	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-31.35	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	58.9	57.9	56.1	50.1	58.7	59.3	
Medium Trucks:	52.7	52.0	45.7	44.1	52.6	52.8	
Heavy Trucks:	53.5	53.0	43.9	45.2	53.5	53.6	
Vehicle Noise:	60.8	59.9	56.7	52.0	60.6	61.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	41	88
CNEL:	9	20	44	95

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Muirlands Boulevard  
 Road Segment: Bake Parkway to City Limits

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,807 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,222 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.08	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.32	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.28	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.1	62.3	56.2	64.9	65.5
Medium Trucks:	58.9	58.2	51.9	50.3	58.8	59.0
Heavy Trucks:	59.7	59.1	50.1	51.4	59.7	59.8
Vehicle Noise:	67.0	66.1	62.9	58.2	66.8	67.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	177	381
CNEL:	41	88	190	409

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Muirlands Boulevard  
 Road Segment: Alton Parkway to Sterling

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,970 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 988 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.20	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.1	61.4	55.3	63.9	64.6
Medium Trucks:	58.0	57.3	50.9	49.4	57.8	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.0	65.1	62.0	57.3	65.9	66.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	331
CNEL:	35	76	165	355

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Muirlands Boulevard  
 Road Segment: Wrigley to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,970 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 988 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.20	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.2	63.1	61.4	55.3	63.9	64.6	
Medium Trucks:	58.0	57.3	50.9	49.4	57.8	58.1	
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9	
Vehicle Noise:	66.0	65.1	62.0	57.3	65.9	66.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	331
CNEL:	35	76	165	355

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Newport Coast Drive  
 Road Segment: SR-73 NB Off-Ramp to Turtle Ridge

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,310 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,428 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.09	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.4	63.3	61.5	55.5	64.1	64.7	
Medium Trucks:	58.3	57.7	51.3	49.8	58.2	58.5	
Heavy Trucks:	59.7	59.1	50.0	51.3	59.6	59.8	
Vehicle Noise:	66.4	65.5	62.2	57.7	66.2	66.6	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	75	162	348
CNEL:	37	80	173	373

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Newport Coast Drive  
 Road Segment: Turtle Crest to Bonita Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,122 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,000 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.44	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.68	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.63	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.8	61.8	60.0	53.9	62.6	63.2
Medium Trucks:	56.8	56.1	49.8	48.2	56.7	56.9
Heavy Trucks:	58.1	57.5	48.5	49.7	58.1	58.2
Vehicle Noise:	64.8	63.9	60.7	56.1	64.6	65.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	59	128	275
CNEL:	29	63	137	294



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Nightmist  
 Road Segment: Sand Canyon Avenue to Tulip (Road C)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	11,501 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	949 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.42	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.66	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.61	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.1	58.0	56.3	50.2	58.8	59.4
Medium Trucks:	53.6	52.9	46.6	45.0	53.5	53.7
Heavy Trucks:	56.1	55.5	46.4	47.7	56.0	56.2
Vehicle Noise:	61.6	60.7	57.1	52.9	61.4	61.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	36	78	167
CNEL:	18	38	83	178

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Northwood  
 Road Segment: Yale Avenue to Savannah

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,741 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 391 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-4.94	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-22.17	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-26.13	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.0	58.9	57.2	51.1	59.7	60.3	
Medium Trucks:	54.2	53.6	47.2	45.6	54.1	54.3	
Heavy Trucks:	56.1	55.5	46.4	47.7	56.1	56.2	
Vehicle Noise:	62.2	61.3	57.9	53.5	62.0	62.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	51	111
CNEL:	12	25	55	118

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Northwood  
 Road Segment: Goldrush to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,801 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	314 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.90	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-23.13	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-27.09	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.0	58.0	56.2	50.2	58.8	59.4
Medium Trucks:	53.3	52.6	46.2	44.7	53.2	53.4
Heavy Trucks:	55.1	54.5	45.5	46.7	55.1	55.2
Vehicle Noise:	61.3	60.4	56.9	52.6	61.1	61.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	10	21	44	95
CNEL:	10	22	47	102

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Oak Canyon Drive  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,109 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 999 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.96	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-19.19	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-23.15	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.1	66.1	64.3	58.3	66.9	67.5	
Medium Trucks:	60.9	60.2	53.9	52.3	60.8	61.0	
Heavy Trucks:	61.7	61.2	52.1	53.4	61.7	61.8	
Vehicle Noise:	69.0	68.1	64.9	60.2	68.8	69.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	144	311
CNEL:	33	72	155	334

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Pacifica  
 Road Segment: Gateway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,565 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,037 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.48	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.0	61.9	60.2	54.1	62.7	63.3
Medium Trucks:	57.0	56.3	49.9	48.4	56.8	57.1
Heavy Trucks:	58.3	57.7	48.6	49.9	58.3	58.4
Vehicle Noise:	65.0	64.1	60.8	56.3	64.8	65.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	131	281
CNEL:	30	65	140	301

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Pacifica  
 Road Segment: Alton Parkway to Gateway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,495 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 783 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.50	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.74	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.69	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.8	60.7	58.9	52.9	61.5	62.1
Medium Trucks:	55.7	55.1	48.7	47.2	55.6	55.9
Heavy Trucks:	57.1	56.5	47.4	48.7	57.0	57.2
Vehicle Noise:	63.8	62.9	59.6	55.1	63.6	64.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	234
CNEL:	25	54	116	250

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred Project Name: Irvine GP  
 Road Name: Pacifica Job Number: 15937  
 Road Segment: Irvine Center Drive to Fortune Drive (Spectrum Center Drive)

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,083 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 584 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.77	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.01	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.97	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.5	59.4	57.7	51.6	60.2	60.8	
Medium Trucks:	54.5	53.8	47.4	45.9	54.3	54.6	
Heavy Trucks:	55.8	55.2	46.2	47.4	55.8	55.9	
Vehicle Noise:	62.5	61.6	58.3	53.8	62.3	62.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	41	89	192
CNEL:	21	44	95	206

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Pacifica  
 Road Segment: Meridian to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,479 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 370 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
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FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.76	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-23.00	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-26.96	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	58.5	57.4	55.7	49.6	58.2	58.8	
Medium Trucks:	52.5	51.8	45.4	43.9	52.4	52.6	
Heavy Trucks:	53.8	53.2	44.2	45.4	53.8	53.9	
Vehicle Noise:	60.5	59.6	56.3	51.8	60.3	60.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	30	66	142
CNEL:	15	33	70	152



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Park Place  
 Road Segment: Christamon South to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,750 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	309 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-5.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-22.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-26.48	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.2	53.2	51.4	45.3	54.0	54.6
Medium Trucks:	48.7	48.0	41.7	40.1	48.6	48.8
Heavy Trucks:	51.2	50.6	41.6	42.8	51.2	51.3
Vehicle Noise:	56.7	55.9	52.2	48.0	56.6	57.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	79
CNEL:	8	18	39	85

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred	Project Name: Irvine GP
Road Name: Portola Parkway	Job Number: 15937
Road Segment: Bee Canyon Access Road to Sand Canyon Avenue	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,775 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 2,044 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 55 mph																					
Near/Far Lane Distance: 48 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 62.5 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 62.5 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 57.786																				
Left View: -90.0 degrees	Medium Trucks: 57.717																				
Right View: 90.0 degrees	Heavy Trucks: 57.787																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.96	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.91	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.8	67.0	60.9	69.6	70.2
Medium Trucks:	63.2	62.5	56.2	54.6	63.1	63.3
Heavy Trucks:	63.2	62.7	53.6	54.9	63.2	63.3
Vehicle Noise:	71.4	70.5	67.5	62.6	71.2	71.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	348	751
CNEL:	81	174	375	808

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Portola Parkway  
 Road Segment: Jeffrey Road to Bee Canyon Access Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,694 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,037 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.97	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.93	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	67.0	60.9	69.5	70.1
Medium Trucks:	63.2	62.5	56.2	54.6	63.1	63.3
Heavy Trucks:	63.2	62.6	53.6	54.9	63.2	63.3
Vehicle Noise:	71.4	70.5	67.5	62.6	71.2	71.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	348	749
CNEL:	81	174	374	806

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Portola Parkway  
 Road Segment: Arrowhead to Ridge Valley Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,621 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,949 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.07	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.16	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.12	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.8	60.7	69.3	70.0
Medium Trucks:	63.0	62.3	56.0	54.4	62.9	63.1
Heavy Trucks:	63.0	62.4	53.4	54.7	63.0	63.1
Vehicle Noise:	71.2	70.3	67.3	62.4	71.0	71.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	338	727
CNEL:	78	169	363	782

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Portola Parkway  
 Road Segment: Sand Canyon Avenue to Arrowhead

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,666 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,787 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.30	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.54	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.49	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.2	66.4	60.4	69.0	69.6
Medium Trucks:	62.6	62.0	55.6	54.0	62.5	62.7
Heavy Trucks:	62.7	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	70.8	69.9	66.9	62.1	70.6	71.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	148	319	686
CNEL:	74	159	343	739

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Portola Parkway  
 Road Segment: Portola Springs to SR-241 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,347 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,431 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.46	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.2	65.4	59.4	68.0	68.6	
Medium Trucks:	61.7	61.0	54.6	53.1	61.5	61.8	
Heavy Trucks:	61.7	61.1	52.1	53.3	61.7	61.8	
Vehicle Noise:	69.8	68.9	66.0	61.1	69.6	70.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	128	275	592
CNEL:	64	137	296	637

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Portola Parkway  
 Road Segment: Gatepark to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,181 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,407 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.99	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.25	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.20	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	62.3	61.6	55.2	53.7	62.1	62.4
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.5	69.5	66.6	61.7	70.3	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	188	405	873
CNEL:	94	202	436	939

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Portola Parkway  
 Road Segment: ETC-6 (SR-261) NB Off-Ramp to Gatepark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,743 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,371 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.93	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.31	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.27	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.8	67.7	66.0	59.9	68.5	69.2	
Medium Trucks:	62.2	61.5	55.2	53.6	62.1	62.3	
Heavy Trucks:	62.2	61.6	52.6	53.9	62.2	62.3	
Vehicle Noise:	70.4	69.5	66.5	61.6	70.2	70.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	186	401	864
CNEL:	93	200	432	930



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Portola Parkway  
 Road Segment: SR-261 SB Off-Ramp to SR-261 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,901 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,302 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.80	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.44	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.40	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.9	59.8	68.4	69.0	
Medium Trucks:	62.1	61.4	55.0	53.5	62.0	62.2	
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2	
Vehicle Noise:	70.3	69.3	66.4	61.5	70.1	70.5	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	183	393	847
CNEL:	91	196	423	912

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Portola Parkway  
 Road Segment: Jamboree Road to Bellevue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,621 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,279 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.75	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.48	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.44	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.6	67.6	65.8	59.8	68.4	69.0	
Medium Trucks:	62.0	61.4	55.0	53.4	61.9	62.1	
Heavy Trucks:	62.1	61.5	52.4	53.7	62.0	62.2	
Vehicle Noise:	70.2	69.3	66.3	61.5	70.0	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	391	842
CNEL:	91	195	420	906

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Portola Parkway  
 Road Segment: Bellevue to ETC-6 (SR-261) SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,354 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,257 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.48	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	68.9
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	70.2	69.2	66.3	61.4	70.0	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	180	388	836
CNEL:	90	194	418	900

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Portola Parkway  
 Road Segment: Yale Avenue to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,999 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,145 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.49	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.75	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.70	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.3	65.5	59.5	68.1	68.7	
Medium Trucks:	61.8	61.1	54.7	53.2	61.6	61.9	
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9	
Vehicle Noise:	70.0	69.0	66.1	61.2	69.8	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	375	809
CNEL:	87	187	404	870

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Portola Parkway  
 Road Segment: Culver Drive to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,874 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,887 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.06	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.30	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.26	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.8	65.0	58.9	67.6	68.2
Medium Trucks:	61.2	60.5	54.2	52.6	61.1	61.3
Heavy Trucks:	61.2	60.7	51.6	52.9	61.2	61.3
Vehicle Noise:	69.4	68.5	65.5	60.6	69.2	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	345	742
CNEL:	80	172	371	799

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Portola Parkway  
 Road Segment: Silverado to Portola Springs

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,310 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,016 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.76	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.99	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.95	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.8	65.7	63.9	57.9	66.5	67.1	
Medium Trucks:	60.2	59.5	53.1	51.6	60.1	60.3	
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3	
Vehicle Noise:	68.4	67.4	64.5	59.6	68.2	68.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	101	219	471
CNEL:	51	109	235	507

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Pusan  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,449 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	202 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-6.34	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-23.58	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-27.54	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.0	52.0	50.2	44.1	52.8	53.4
Medium Trucks:	47.9	47.2	40.8	39.3	47.7	48.0
Heavy Trucks:	51.1	50.5	41.4	42.7	51.1	51.2
Vehicle Noise:	55.9	55.1	51.2	47.2	55.7	56.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	20	42
CNEL:	4	10	21	45

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Quail Hill Parkway  
 Road Segment: Shady Canyon Drive to Passage

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,541 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,282 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.87	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.07	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.3	64.3	62.5	56.5	65.1	65.7	
Medium Trucks:	59.1	58.4	52.1	50.5	59.0	59.2	
Heavy Trucks:	59.9	59.4	50.3	51.6	59.9	60.0	
Vehicle Noise:	67.2	66.3	63.1	58.4	67.0	67.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	85	183	393
CNEL:	42	91	196	422



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Quail Hill Parkway  
 Road Segment: East Knollcrest to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,900 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	817 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.83	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.02	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.4	62.3	60.6	54.5	63.1	63.7
Medium Trucks:	57.1	56.5	50.1	48.6	57.0	57.3
Heavy Trucks:	58.0	57.4	48.4	49.6	58.0	58.1
Vehicle Noise:	65.2	64.3	61.2	56.5	65.0	65.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	135	291
CNEL:	31	67	145	312

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred Project Name: Irvine GP  
 Road Name: Quassar Drive (Spectrum) Job Number: 15937  
 Road Segment: Irvine Center Drive to Spectrum Center Drive (Fortune)

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,994 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 164 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 16 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 39.306 Medium Trucks: 39.205 Heavy Trucks: 39.307																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-7.24	1.46	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-24.48	1.48	-1.20	-5.08	0.000	0.000
Heavy Trucks:	77.97	-28.43	1.46	-1.20	-5.56	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	51.8	50.7	48.9	42.9	51.5	52.1
Medium Trucks:	46.6	45.9	39.6	38.0	46.5	46.7
Heavy Trucks:	49.8	49.2	40.2	41.4	49.8	49.9
Vehicle Noise:	54.6	53.8	49.9	46.0	54.5	54.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	8	17	37
CNEL:	4	8	18	39

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Red Hill Avenue  
 Road Segment: MacArthur Boulevard to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,131 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,723 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.30	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.94	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.89	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.6	68.5	66.8	60.7	69.3	70.0	
Medium Trucks:	63.2	62.5	56.1	54.6	63.1	63.3	
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7	
Vehicle Noise:	71.3	70.4	67.3	62.6	71.1	71.6	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	214	462	995
CNEL:	107	230	496	1,069

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Red Hill Avenue  
 Road Segment: I-405 Over Crossing to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,478 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,854 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.96	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.92	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	67.2	65.4	59.3	68.0	68.6	
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9	
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3	
Vehicle Noise:	69.9	69.0	66.0	61.2	69.7	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	278	600
CNEL:	64	139	299	644

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Red Hill Avenue  
 Road Segment: Alton Parkway to Deere Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,238 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,660 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.84	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.40	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.35	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.1	65.3	59.3	67.9	68.5
Medium Trucks:	61.7	61.0	54.7	53.1	61.6	61.8
Heavy Trucks:	62.1	61.5	52.5	53.8	62.1	62.2
Vehicle Noise:	69.8	68.9	65.9	61.1	69.6	70.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	171	369	795
CNEL:	85	184	397	854

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Red Hill Avenue  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,517 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,600 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.74	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.50	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.45	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	67.0	65.2	59.2	67.8	68.4
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7
Heavy Trucks:	62.0	61.4	52.4	53.7	62.0	62.1
Vehicle Noise:	69.7	68.8	65.8	61.0	69.5	70.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	169	364	783
CNEL:	84	181	391	842

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Red Hill Avenue  
 Road Segment: Deere Avenue to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,497 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,516 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.60	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.64	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.60	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.8	65.1	59.0	67.6	68.2
Medium Trucks:	61.5	60.8	54.4	52.9	61.4	61.6
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	69.6	68.7	65.6	60.9	69.4	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	356	766
CNEL:	82	177	382	823

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Red Hill Avenue  
 Road Segment: Skypark East to MacArthur Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,999 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,815 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 47.329				
Road Grade: 0.0%	Medium Trucks: 47.244				
Left View: -90.0 degrees	Heavy Trucks: 47.329				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.18	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.06	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.01	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.4	68.4	66.6	60.6	69.2	69.8
Medium Trucks:	63.0	62.3	56.0	54.4	62.9	63.1
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	71.1	70.2	67.2	62.4	70.9	71.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	149	322	693
CNEL:	74	160	345	744



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Red Hill Avenue  
 Road Segment: Main Street to Skypark East

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,933 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,562 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.47	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.71	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.67	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	66.0	59.9	68.5	69.1
Medium Trucks:	62.4	61.7	55.3	53.8	62.2	62.5
Heavy Trucks:	62.8	62.2	53.1	54.4	62.7	62.9
Vehicle Noise:	70.5	69.6	66.5	61.7	70.3	70.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	135	291	627
CNEL:	67	145	313	673

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Research Drive  
 Road Segment: Hubble to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,175 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,077 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.02	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.97	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.4	64.6	58.6	67.2	67.8
Medium Trucks:	61.2	60.5	54.2	52.6	61.1	61.3
Heavy Trucks:	62.0	61.4	52.4	53.7	62.0	62.1
Vehicle Noise:	69.3	68.4	65.2	60.5	69.1	69.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	117	252	543
CNEL:	58	125	270	582

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Research Drive  
 Road Segment: Scientific to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,919 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,396 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.50	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.74	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.70	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.6	62.9	56.8	65.4	66.1
Medium Trucks:	59.5	58.8	52.4	50.9	59.4	59.6
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	67.5	66.6	63.5	58.8	67.4	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	90	193	416
CNEL:	45	96	207	447

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Research Drive  
 Road Segment: Bake Parkway to Muller

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,241 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,092 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.81	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.76	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.6	63.6	61.8	55.8	64.4	65.0	
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5	
Heavy Trucks:	59.2	58.7	49.6	50.9	59.2	59.4	
Vehicle Noise:	66.5	65.6	62.4	57.7	66.3	66.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	164	354
CNEL:	38	82	176	379

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Research Drive  
 Road Segment: Irvine Center Drive to Bunsen

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,299 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 850 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.85	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.6	62.5	60.7	54.7	63.3	63.9	
Medium Trucks:	57.3	56.6	50.3	48.7	57.2	57.4	
Heavy Trucks:	58.2	57.6	48.5	49.8	58.1	58.3	
Vehicle Noise:	65.4	64.5	61.3	56.7	65.2	65.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	139	299
CNEL:	32	69	149	321

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred Project Name: Irvine GP  
 Road Name: Ridge Valley (O Street) Job Number: 15937  
 Road Segment: Irvine Boulevard to Trabuco Road (Great Park Boulevard)

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,983 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,236 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.03	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.27	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.22	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.1	62.4	56.3	64.9	65.5
Medium Trucks:	58.9	58.3	51.9	50.4	58.8	59.1
Heavy Trucks:	59.8	59.2	50.2	51.4	59.8	59.9
Vehicle Noise:	67.0	66.1	63.0	58.3	66.8	67.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	83	178	384
CNEL:	41	89	191	412

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Ridge Valley (O Street)  
 Road Segment: Portola Parkway to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,342 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,018 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.87	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.07	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.3	63.3	61.5	55.5	64.1	64.7	
Medium Trucks:	58.1	57.4	51.1	49.5	58.0	58.2	
Heavy Trucks:	58.9	58.4	49.3	50.6	58.9	59.0	
Vehicle Noise:	66.2	65.3	62.1	57.4	66.0	66.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	73	157	337
CNEL:	36	78	168	362

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred Project Name: Irvine GP  
 Road Name: Ridge Valley (O Street) Job Number: 15937  
 Road Segment: Trabuco Road (Great Park Boulevard) to Marine Way

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,130 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 918 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 45 mph																					
Near/Far Lane Distance: 48 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 62.5 feet	Heavy Trucks: 8.006 <span style="float:right">Grade Adjustment: 0.0</span>																				
Centerline Dist. to Observer: 62.5 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet																					
Road Grade: 0.0%																					
Left View: -90.0 degrees																					
Right View: 90.0 degrees																					
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786																				
	Medium Trucks: 57.717																				
	Heavy Trucks: 57.787																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.52	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.9	62.8	61.1	55.0	63.6	64.2
Medium Trucks:	57.7	57.0	50.6	49.1	57.5	57.8
Heavy Trucks:	58.5	57.9	48.9	50.1	58.5	58.6
Vehicle Noise:	65.7	64.8	61.7	57.0	65.5	66.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	68	146	315
CNEL:	34	73	157	338



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Ridge Valley (O Street)  
 Road Segment: Ranchland to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 935 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 77 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-13.08	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-30.32	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-34.27	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.0	55.0	53.2	47.1	55.8	56.4
Medium Trucks:	49.8	49.1	42.7	41.2	49.7	49.9
Heavy Trucks:	50.6	50.0	41.0	42.2	50.6	50.7
Vehicle Noise:	57.9	56.9	53.8	49.1	57.7	58.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	12	26	56
CNEL:	6	13	28	60

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Ridgeline Drive  
 Road Segment: Concordia East to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,070 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,326 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 40.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 40.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 32.140				
Road Grade: 0.0%	Medium Trucks: 32.016				
Left View: -90.0 degrees	Heavy Trucks: 32.141				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	0.37	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-16.87	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	81.57	-20.83	2.78	-1.20	-5.56	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.2	65.2	63.4	57.4	66.0	66.6	
Medium Trucks:	60.5	59.8	53.4	51.9	60.4	60.6	
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4	
Vehicle Noise:	68.5	67.6	64.2	59.8	68.3	68.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	66	143	308
CNEL:	33	71	153	329

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Ridgeline Drive  
 Road Segment: Turtle Rock Drive to San Simeon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,923 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,231 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 32.140 Medium Trucks: 32.016 Heavy Trucks: 32.141																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	0.04	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-17.19	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	81.57	-21.15	2.78	-1.20	-5.56	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.9	64.9	63.1	57.0	65.7	66.3	
Medium Trucks:	60.2	59.5	53.1	51.6	60.0	60.3	
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1	
Vehicle Noise:	68.1	67.3	63.8	59.4	68.0	68.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	136	293
CNEL:	31	67	145	313

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Rockfield Avenue  
 Road Segment: Whatney to McLaren

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,541 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,365 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.84	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.80	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.6	64.6	62.8	56.7	65.4	66.0	
Medium Trucks:	59.4	58.7	52.3	50.8	59.3	59.5	
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3	
Vehicle Noise:	67.4	66.5	63.4	58.7	67.3	67.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	88	190	410
CNEL:	44	95	204	440

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Rockfield Avenue  
 Road Segment: Bake Parkway to Whatney

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,372 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	608 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.30	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.1	61.0	59.3	53.2	61.8	62.4
Medium Trucks:	55.9	55.2	48.8	47.3	55.7	56.0
Heavy Trucks:	56.7	56.1	47.1	48.3	56.7	56.8
Vehicle Noise:	63.9	63.0	59.9	55.2	63.7	64.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	111	239
CNEL:	26	55	119	257

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Rockfield Avenue  
 Road Segment: Thomas to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	5,692 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	470 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-5.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-22.47	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-26.43	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.0	59.9	58.2	52.1	60.7	61.3
Medium Trucks:	54.7	54.1	47.7	46.2	54.6	54.9
Heavy Trucks:	55.6	55.0	46.0	47.2	55.6	55.7
Vehicle Noise:	62.8	61.9	58.8	54.1	62.6	63.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	43	93	201
CNEL:	22	47	100	216

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Roosevelt  
 Road Segment: Jeffrey Road to Vision

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,206 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,420 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.08	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.16	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.11	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.3	61.5	55.5	64.1	64.7
Medium Trucks:	58.3	57.6	51.3	49.7	58.2	58.4
Heavy Trucks:	59.6	59.0	50.0	51.3	59.6	59.7
Vehicle Noise:	66.4	65.5	62.2	57.6	66.2	66.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	75	161	347
CNEL:	37	80	173	372

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Roosevelt  
 Road Segment: Yale Avenue to Van Buren

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,058 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 747 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 29.547 Medium Trucks: 29.411 Heavy Trucks: 29.547																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.70	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	77.72	-19.94	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	82.99	-23.90	3.32	-1.20	-5.77	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.9	63.1	57.0	65.7	66.3
Medium Trucks:	59.9	59.3	52.9	51.3	59.8	60.0
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	67.9	67.0	63.8	59.2	67.8	68.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	46	99	213
CNEL:	23	49	106	228



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Roosevelt  
 Road Segment: Vision to Bay Tree

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,387 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,352 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos:	77.5%	12.9%	9.6%	97.42%
	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
	<b>Noise Source Elevations (in feet)</b>				
	Autos:	2.000			
	Medium Trucks:	4.000			
	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos:	57.786			
	Medium Trucks:	57.717			
	Heavy Trucks:	57.787			

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.13	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.37	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.32	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.1	63.1	61.3	55.3	63.9	64.5	
Medium Trucks:	58.1	57.4	51.1	49.5	58.0	58.2	
Heavy Trucks:	59.4	58.8	49.8	51.1	59.4	59.5	
Vehicle Noise:	66.1	65.2	62.0	57.4	66.0	66.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	72	156	336
CNEL:	36	78	167	360

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Roosevelt  
 Road Segment: Nimitz to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,608 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,205 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.63	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.82	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.6	62.6	60.8	54.8	63.4	64.0
Medium Trucks:	57.6	56.9	50.6	49.0	57.5	57.7
Heavy Trucks:	58.9	58.3	49.3	50.6	58.9	59.0
Vehicle Noise:	65.6	64.7	61.5	56.9	65.5	65.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	144	311
CNEL:	33	72	155	333

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Roosevelt  
 Road Segment: Tulip (Road C) to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,053 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,159 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.80	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.04	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.99	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.5	62.4	60.6	54.6	63.2	63.8	
Medium Trucks:	57.4	56.8	50.4	48.9	57.3	57.6	
Heavy Trucks:	58.8	58.2	49.1	50.4	58.7	58.9	
Vehicle Noise:	65.5	64.6	61.3	56.8	65.3	65.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	141	303
CNEL:	32	70	151	325

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Royal Oak  
 Road Segment: Alton Parkway to Eaglecreek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,830 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 398 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 29.547 Medium Trucks: 29.411 Heavy Trucks: 29.547																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-4.86	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	75.75	-22.09	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	81.57	-26.05	3.32	-1.20	-5.77	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.6	60.5	58.7	52.7	61.3	61.9
Medium Trucks:	55.8	55.1	48.8	47.2	55.7	55.9
Heavy Trucks:	57.6	57.1	48.0	49.3	57.6	57.8
Vehicle Noise:	63.8	62.9	59.5	55.1	63.6	64.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	113
CNEL:	12	26	56	120

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Oak Canyon Drive to Burt Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 51,113 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,217 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.84	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.40	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.35	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.1	67.3	61.3	69.9	70.5
Medium Trucks:	63.7	63.0	56.7	55.1	63.6	63.8
Heavy Trucks:	64.1	63.5	54.5	55.8	64.1	64.2
Vehicle Noise:	71.8	70.9	67.9	63.1	71.6	72.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	108	233	502	1,081
CNEL:	116	250	539	1,162

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Irvine Center Drive to Oak Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 50,013 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,126 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.75	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.49	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.45	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.0	67.2	61.2	69.8	70.4
Medium Trucks:	63.6	62.9	56.6	55.0	63.5	63.7
Heavy Trucks:	64.0	63.4	54.4	55.7	64.0	64.1
Vehicle Noise:	71.7	70.8	67.8	63.0	71.6	72.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	107	230	495	1,066
CNEL:	114	247	531	1,145

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-405 NB Off-Ramp to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,922 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,789 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.38	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-13.86	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.82	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.6	71.6	69.8	63.8	72.4	73.0
Medium Trucks:	66.2	65.5	59.2	57.6	66.1	66.3
Heavy Trucks:	66.6	66.0	57.0	58.2	66.6	66.7
Vehicle Noise:	74.3	73.4	70.4	65.6	74.1	74.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	244	525	1,131
CNEL:	122	262	564	1,216

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Burt Road to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 53,622 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,424 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.05	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.19	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.14	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.7	67.9	61.9	70.5	71.1
Medium Trucks:	64.3	63.7	57.3	55.8	64.2	64.4
Heavy Trucks:	64.7	64.2	55.1	56.4	64.7	64.9
Vehicle Noise:	72.5	71.5	68.5	63.7	72.3	72.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	244	526	1,132
CNEL:	122	262	565	1,217



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Marine to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 62,433 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,151 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.71	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-12.53	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-16.48	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.8	71.7	70.0	63.9	72.5	73.1	
Medium Trucks:	66.4	65.7	59.3	57.8	66.3	66.5	
Heavy Trucks:	66.8	66.2	57.2	58.4	66.8	66.9	
Vehicle Noise:	74.5	73.6	70.5	65.8	74.3	74.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	194	417	898	1,935
CNEL:	208	448	965	2,079

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Trabuco Road to Towngate

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 42,024 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,467 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.99	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.25	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.20	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.2	66.5	60.4	69.0	69.6
Medium Trucks:	62.9	62.2	55.8	54.3	62.7	63.0
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4
Vehicle Noise:	71.0	70.1	67.0	62.2	70.8	71.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	95	204	440	949
CNEL:	102	220	473	1,020

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Barranca Parkway to Waterworks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 38,582 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,183 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.62	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.62	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.57	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.9	66.1	60.0	68.7	69.3
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0
Vehicle Noise:	70.6	69.7	66.7	61.9	70.4	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	193	416	896
CNEL:	96	207	447	963

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-5 SB Off-Ramp to Marine

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 51,961 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,287 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.91	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-13.33	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-17.28	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.0	70.9	69.2	63.1	71.7	72.3	
Medium Trucks:	65.6	64.9	58.5	57.0	65.5	65.7	
Heavy Trucks:	66.0	65.4	56.4	57.6	66.0	66.1	
Vehicle Noise:	73.7	72.8	69.7	65.0	73.5	74.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	171	369	795	1,712
CNEL:	184	396	854	1,840

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Hospital to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,289 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,994 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.35	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.88	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.84	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.2	61.6	55.2	53.6	62.1	62.3
Heavy Trucks:	62.6	62.1	53.0	54.3	62.6	62.7
Vehicle Noise:	70.4	69.4	66.4	61.6	70.2	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	399	860
CNEL:	92	199	429	925

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Nightmist to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,581 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,843 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.44	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-13.80	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-17.76	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.5	68.7	62.6	71.3	71.9
Medium Trucks:	65.1	64.4	58.1	56.5	65.0	65.2
Heavy Trucks:	65.5	64.9	55.9	57.1	65.5	65.6
Vehicle Noise:	73.2	72.3	69.3	64.5	73.0	73.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	159	343	739	1,592
CNEL:	171	369	794	1,710

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 35,889 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,961 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.31	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.93	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.89	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.6	70.5	68.7	62.7	71.3	71.9
Medium Trucks:	65.1	64.5	58.1	56.6	65.0	65.2
Heavy Trucks:	65.5	65.0	55.9	57.2	65.5	65.7
Vehicle Noise:	73.3	72.3	69.3	64.5	73.1	73.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	96	207	446	960
CNEL:	103	222	479	1,031

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-5 NB Off-Ramp to Nightmist

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 49,225 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,061 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.68	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-13.56	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-17.52	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.8	70.7	68.9	62.9	71.5	72.1
Medium Trucks:	65.3	64.7	58.3	56.8	65.2	65.5
Heavy Trucks:	65.8	65.2	56.1	57.4	65.7	65.9
Vehicle Noise:	73.5	72.5	69.5	64.7	73.3	73.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	165	356	767	1,652
CNEL:	177	382	824	1,775



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Towngate to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 36,746 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,032 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.41	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.83	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.79	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.7	65.9	59.8	68.5	69.1	
Medium Trucks:	62.3	61.6	55.2	53.7	62.2	62.4	
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8	
Vehicle Noise:	70.4	69.5	66.4	61.7	70.2	70.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	187	403	868
CNEL:	93	201	433	932

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Waterworks to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,598 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,772 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.02	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.22	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.18	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.3	65.5	59.4	68.1	68.7	
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0	
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4	
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	176	379	817
CNEL:	88	189	408	878

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Irvine Boulevard to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,306 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,923 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.43	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.81	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.76	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	62.0	61.3	54.9	53.4	61.8	62.1
Heavy Trucks:	62.4	61.8	52.7	54.0	62.4	62.5
Vehicle Noise:	70.1	69.2	66.1	61.3	69.9	70.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	285	614
CNEL:	66	142	306	660

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Roosevelt to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,585 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,266 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 56.593				
Road Grade: 0.0%	Medium Trucks: 56.522				
Left View: -90.0 degrees	Heavy Trucks: 56.593				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.73	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-14.51	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-18.46	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.8	68.0	61.9	70.6	71.2
Medium Trucks:	64.4	63.7	57.4	55.8	64.3	64.5
Heavy Trucks:	64.8	64.2	55.2	56.4	64.8	64.9
Vehicle Noise:	72.5	71.6	68.6	63.8	72.3	72.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	308	663	1,428
CNEL:	153	331	712	1,535

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Alton Parkway to Hospital

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,129 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,733 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.96	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.28	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.24	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.2	61.6	55.2	53.7	62.1	62.4
Heavy Trucks:	62.7	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	70.4	69.5	66.4	61.6	70.2	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	381	821
CNEL:	88	190	410	882

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon/Shady Canyon  
 Road Segment: Quail Hill Parkway to I-405 SB Ramps

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,970 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,978 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.55	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.69	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.64	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.8	68.7	67.0	60.9	69.5	70.2	
Medium Trucks:	63.4	62.7	56.3	54.8	63.3	63.5	
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9	
Vehicle Noise:	71.5	70.6	67.5	62.8	71.3	71.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	158	340	734
CNEL:	79	170	366	788

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Scientific Way  
 Road Segment: Irvine Center Drive to Wald

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,626 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 134 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-9.58	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-26.82	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-30.78	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.5	51.4	49.6	43.6	52.2	52.8
Medium Trucks:	46.7	46.0	39.7	38.1	46.6	46.8
Heavy Trucks:	48.5	48.0	38.9	40.2	48.5	48.7
Vehicle Noise:	54.7	53.8	50.4	46.0	54.5	54.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	13	27	58
CNEL:	6	13	29	62

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Shady Canyon Drive  
 Road Segment: Culver Drive/Bonita Canyon Drive to Cloverfield

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,242 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	762 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.59	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-20.82	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-24.78	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.2	64.4	58.4	67.0	67.6
Medium Trucks:	60.8	60.2	53.8	52.2	60.7	60.9
Heavy Trucks:	61.2	60.6	51.6	52.9	61.2	61.3
Vehicle Noise:	68.9	68.0	65.0	60.2	68.8	69.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	144	310
CNEL:	33	72	154	333



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Shady Canyon Drive  
 Road Segment: Bommer Canyon Road to Sunnyhill

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,888 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	651 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	50.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 42.814				
Road Grade:	0.0%	Medium Trucks: 42.720				
Left View:	-90.0 degrees	Heavy Trucks: 42.814				
Right View:	90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.27	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-21.51	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.47	0.91	-1.20	-5.43	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.6	64.6	62.8	56.8	65.4	66.0	
Medium Trucks:	59.2	58.5	52.2	50.6	59.1	59.3	
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7	
Vehicle Noise:	67.3	66.4	63.4	58.6	67.1	67.6	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	150	322
CNEL:	35	75	161	346

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Skyhawk  
 Road Segment: Great Park Boulevard to Marine Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,600 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 874 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 25 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	0.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-17.22	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-21.17	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.5	55.4	53.7	47.6	56.2	56.9
Medium Trucks:	51.3	50.7	44.3	42.8	51.2	51.5
Heavy Trucks:	54.6	54.0	44.9	46.2	54.5	54.7
Vehicle Noise:	59.4	58.5	54.6	50.7	59.2	59.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	26	56	120
CNEL:	13	27	59	127

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Southwood  
 Road Segment: Yale Avenue to Colt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,052 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 252 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-6.85	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-24.09	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-28.04	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	58.1	57.0	55.3	49.2	57.8	58.4	
Medium Trucks:	52.3	51.6	45.3	43.7	52.2	52.4	
Heavy Trucks:	54.2	53.6	44.5	45.8	54.1	54.3	
Vehicle Noise:	60.3	59.4	56.0	51.6	60.1	60.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	18	38	82
CNEL:	9	19	41	88

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Southwood  
 Road Segment: Challenger to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,844 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	235 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		37.138		
Left View:	-90.0 degrees	Medium Trucks:		37.030		
Right View:	90.0 degrees	Heavy Trucks:		37.139		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-7.16	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-24.39	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-28.35	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.8	56.7	55.0	48.9	57.5	58.1
Medium Trucks:	52.0	51.3	45.0	43.4	51.9	52.1
Heavy Trucks:	53.9	53.3	44.2	45.5	53.8	54.0
Vehicle Noise:	60.0	59.1	55.7	51.3	59.8	60.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	79
CNEL:	8	18	39	84

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Spectrum Center Drive (Fortune)  
 Road Segment: Pacifica to Quassar Drive (Spectrum )

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,887 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 981 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.51	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.47	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.2	58.2	56.4	50.3	59.0	59.6
Medium Trucks:	53.7	53.1	46.7	45.1	53.6	53.8
Heavy Trucks:	56.2	55.6	46.6	47.8	56.2	56.3
Vehicle Noise:	61.7	60.9	57.2	53.0	61.6	62.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	79	171
CNEL:	18	39	85	182

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Spectrum Center Drive (Fortune)  
 Road Segment: Quassar Drive (Spectrum ) to Gatewayb

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,271 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,095 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	0.20	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.03	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-20.99	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.7	58.6	56.9	50.8	59.4	60.1
Medium Trucks:	54.2	53.5	47.2	45.6	54.1	54.3
Heavy Trucks:	56.7	56.1	47.1	48.3	56.7	56.8
Vehicle Noise:	62.2	61.4	57.7	53.5	62.0	62.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	40	86	184
CNEL:	20	42	91	196

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Sunnyhill  
 Road Segment: Shady Canyon Drive to Turtle Rock Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,698 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	553 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-1.97	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-19.21	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-23.17	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.5	53.5	51.7	45.6	54.3	54.9
Medium Trucks:	49.3	48.7	42.3	40.8	49.2	49.5
Heavy Trucks:	52.6	52.0	42.9	44.2	52.5	52.7
Vehicle Noise:	57.4	56.6	52.7	48.7	57.2	57.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	41	88
CNEL:	9	20	43	94

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Technology Drive  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,103 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,648 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.96	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.92	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.7	59.6	68.2	68.8
Medium Trucks:	62.3	61.6	55.2	53.7	62.1	62.4
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	70.3	69.4	66.3	61.6	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	137	296	638
CNEL:	68	147	318	685



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred Project Name: Irvine GP  
 Road Name: Technology Drive Job Number: 15937  
 Road Segment: Old Laguna Canyon Road to I-5/SR-133 Undercrossing

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,614 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,948 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.95	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.29	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.25	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.1	64.3	58.3	66.9	67.5
Medium Trucks:	60.9	60.2	53.9	52.3	60.8	61.0
Heavy Trucks:	61.8	61.2	52.1	53.4	61.7	61.9
Vehicle Noise:	69.0	68.1	64.9	60.3	68.8	69.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	112	241	520
CNEL:	56	120	259	558

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Technology Drive  
 Road Segment: I-5/SR-133 to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,678 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,871 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.77	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.47	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.42	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	65.9	64.2	58.1	66.7	67.3
Medium Trucks:	60.7	60.1	53.7	52.2	60.6	60.9
Heavy Trucks:	61.6	61.0	52.0	53.2	61.6	61.7
Vehicle Noise:	68.8	67.9	64.8	60.1	68.6	69.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	109	235	506
CNEL:	54	117	252	543

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Technology Drive  
 Road Segment: Ada to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	5,697 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	470 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-5.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-22.47	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-26.42	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.0	59.9	58.2	52.1	60.7	61.3
Medium Trucks:	54.7	54.1	47.7	46.2	54.6	54.9
Heavy Trucks:	55.6	55.0	46.0	47.2	55.6	55.7
Vehicle Noise:	62.8	61.9	58.8	54.1	62.6	63.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	43	94	202
CNEL:	22	47	100	216

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Toledo Way  
 Road Segment: Bake Parkway to City Limits

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,035 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	663 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-21.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-25.39	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.8	62.7	60.9	54.9	63.5	64.1	
Medium Trucks:	57.3	56.7	50.3	48.8	57.2	57.4	
Heavy Trucks:	57.7	57.2	48.1	49.4	57.7	57.9	
Vehicle Noise:	65.5	64.5	61.5	56.7	65.3	65.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	140	302
CNEL:	32	70	151	324

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Toledo Way  
 Road Segment: Goodyear to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,383 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 527 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.39	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.8	61.7	59.9	53.9	62.5	63.1	
Medium Trucks:	56.3	55.7	49.3	47.8	56.2	56.4	
Heavy Trucks:	56.7	56.2	47.1	48.4	56.7	56.9	
Vehicle Noise:	64.5	63.5	60.5	55.7	64.3	64.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	56	120	259
CNEL:	28	60	129	278

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Toledo Way  
 Road Segment: Alton Parkway to Parker

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,879 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 485 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.55	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.79	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.75	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.4	61.3	59.6	53.5	62.1	62.8	
Medium Trucks:	56.0	55.3	48.9	47.4	55.9	56.1	
Heavy Trucks:	56.4	55.8	46.8	48.0	56.4	56.5	
Vehicle Noise:	64.1	63.2	60.1	55.4	63.9	64.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	53	114	245
CNEL:	26	57	122	263

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Trabuco Road  
 Road Segment: Keystone to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,594 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,204 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.34	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.0	62.2	56.2	64.8	65.4
Medium Trucks:	58.8	58.2	51.8	50.2	58.7	58.9
Heavy Trucks:	59.7	59.1	50.0	51.3	59.6	59.8
Vehicle Noise:	66.9	66.0	62.8	58.2	66.7	67.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	175	377
CNEL:	40	87	188	405

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Trabuco Road  
 Road Segment: Jeffrey Road to Keystone

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,846 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,142 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.61	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.57	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.8	63.8	62.0	56.0	64.6	65.2
Medium Trucks:	58.6	57.9	51.6	50.0	58.5	58.7
Heavy Trucks:	59.4	58.9	49.8	51.1	59.4	59.5
Vehicle Noise:	66.7	65.8	62.6	57.9	66.5	66.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	169	364
CNEL:	39	84	181	391



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Trabuco Road  
 Road Segment: Culver Drive to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,275 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,095 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.79	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.75	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.7	63.6	61.8	55.8	64.4	65.0
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5
Heavy Trucks:	59.3	58.7	49.6	50.9	59.2	59.4
Vehicle Noise:	66.5	65.6	62.4	57.8	66.3	66.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	164	354
CNEL:	38	82	176	380

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Trabuco Road  
 Road Segment: Monroe to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,181 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,087 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.59	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.83	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.78	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.6	61.8	55.7	64.4	65.0
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5
Heavy Trucks:	59.2	58.6	49.6	50.9	59.2	59.3
Vehicle Noise:	66.5	65.6	62.4	57.7	66.3	66.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	164	353
CNEL:	38	81	176	378

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Trabuco Road  
 Road Segment: I-5 NB Off-Ramp to Monroe

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,860 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,061 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.69	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.93	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.89	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.5	63.5	61.7	55.6	64.3	64.9
Medium Trucks:	58.3	57.6	51.2	49.7	58.2	58.4
Heavy Trucks:	59.1	58.5	49.5	50.7	59.1	59.2
Vehicle Noise:	66.4	65.4	62.3	57.6	66.2	66.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	75	161	347
CNEL:	37	80	173	372

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Trabuco Road  
 Road Segment: Yale Avenue to Remington

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,949 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 986 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.25	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.21	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.2	63.1	61.4	55.3	63.9	64.5	
Medium Trucks:	58.0	57.3	50.9	49.4	57.8	58.1	
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9	
Vehicle Noise:	66.0	65.1	62.0	57.3	65.8	66.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	330
CNEL:	35	76	164	354

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Trabuco Road  
 Road Segment: Remington to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,295 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 932 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.45	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.0	62.9	61.1	55.1	63.7	64.3
Medium Trucks:	57.7	57.0	50.7	49.1	57.6	57.8
Heavy Trucks:	58.6	58.0	48.9	50.2	58.5	58.7
Vehicle Noise:	65.8	64.9	61.7	57.1	65.6	66.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	148	318
CNEL:	34	74	158	341

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Turtle Ridge Drive  
 Road Segment: Federation Way to Bonita Canyon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,977 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,731 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.43	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.81	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.76	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.6	65.6	63.8	57.8	66.4	67.0	
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5	
Heavy Trucks:	61.2	60.7	51.6	52.9	61.2	61.4	
Vehicle Noise:	68.5	67.6	64.4	59.7	68.3	68.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	104	223	481
CNEL:	52	111	239	516

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Turtle Rock Drive  
 Road Segment: Ridgeline to Willowleaf

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,738 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	721 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.37	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-20.61	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-24.57	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.7	62.9	56.8	65.5	66.1
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	67.6	66.7	63.5	58.8	67.4	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	116	250
CNEL:	27	58	125	269

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Turtle Rock Drive  
 Road Segment: Silkwood to Sunnyhill

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,638 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 713 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.42	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-20.66	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-24.62	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.7	64.6	62.8	56.8	65.4	66.0	
Medium Trucks:	59.4	58.8	52.4	50.9	59.3	59.6	
Heavy Trucks:	60.3	59.7	50.6	51.9	60.3	60.4	
Vehicle Noise:	67.5	66.6	63.5	58.8	67.3	67.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	115	248
CNEL:	27	57	124	266



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Turtle Rock Drive  
 Road Segment: Canyon Park to Ridgeline

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,159 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	591 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.24	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-21.48	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-25.43	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	63.8	62.0	56.0	64.6	65.2
Medium Trucks:	58.6	58.0	51.6	50.0	58.5	58.7
Heavy Trucks:	59.5	58.9	49.8	51.1	59.4	59.6
Vehicle Noise:	66.7	65.8	62.6	58.0	66.5	67.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	102	219
CNEL:	24	51	109	235

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Turtle Rock Drive  
 Road Segment: Sunnyhill to Southernwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,587 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 296 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-7.24	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-24.48	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-28.43	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.9	60.8	59.0	53.0	61.6	62.2	
Medium Trucks:	55.6	55.0	48.6	47.0	55.5	55.7	
Heavy Trucks:	56.5	55.9	46.8	48.1	56.4	56.6	
Vehicle Noise:	63.7	62.8	59.6	55.0	63.5	64.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	30	64	138
CNEL:	15	32	69	148

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Turtle Rock Drive  
 Road Segment: Campus Drive to Hillgate

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,106 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 586 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.51	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.46	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	60.9	59.1	53.1	61.7	62.3
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8
Heavy Trucks:	56.5	56.0	46.9	48.2	56.5	56.7
Vehicle Noise:	63.8	62.9	59.7	55.0	63.6	64.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	234
CNEL:	25	54	116	251

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Turtle Rock Drive  
 Road Segment: Paseo Segovia to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,064 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 335 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 32.140 Medium Trucks: 32.016 Heavy Trucks: 32.141																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-6.70	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-23.94	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	84.25	-27.89	2.78	-1.20	-5.56	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.3	62.3	60.5	54.5	63.1	63.7
Medium Trucks:	57.1	56.4	50.1	48.5	57.0	57.2
Heavy Trucks:	57.9	57.4	48.3	49.6	57.9	58.0
Vehicle Noise:	65.2	64.3	61.1	56.4	65.0	65.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	40	86	185
CNEL:	20	43	92	199

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: University Drive  
 Road Segment: Golden Glow to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 42,678 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,521 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.06	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.18	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.14	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.0	70.0	68.2	62.1	70.8	71.4
Medium Trucks:	64.6	63.9	57.5	56.0	64.5	64.7
Heavy Trucks:	65.0	64.4	55.4	56.6	65.0	65.1
Vehicle Noise:	72.7	71.8	68.7	64.0	72.5	73.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	427	919
CNEL:	99	213	458	988

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: University Drive  
 Road Segment: Ridgeline to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 52,367 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,320 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 75.0 feet Centerline Dist. to Observer: 75.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 70.413 Medium Trucks: 70.356 Heavy Trucks: 70.413																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.95	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.29	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-17.25	-2.33	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.6	69.6	67.8	61.7	70.4	71.0	
Medium Trucks:	64.2	63.5	57.1	55.6	64.1	64.3	
Heavy Trucks:	64.6	64.0	55.0	56.2	64.6	64.7	
Vehicle Noise:	72.3	71.4	68.4	63.6	72.1	72.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	104	224	482	1,037
CNEL:	111	240	517	1,115

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: University Drive  
 Road Segment: Culver Drive to Golden Glow

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 41,441 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,419 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.93	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.31	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.26	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.9	69.8	68.1	62.0	70.6	71.2
Medium Trucks:	64.5	63.8	57.4	55.9	64.3	64.6
Heavy Trucks:	64.9	64.3	55.2	56.5	64.9	65.0
Vehicle Noise:	72.6	71.7	68.6	63.8	72.4	72.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	194	418	901
CNEL:	97	209	450	968

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: University Drive  
 Road Segment: Yale Avenue to Ridgeline

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 36,983 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,051 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.44	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.76	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.4	69.3	67.6	61.5	70.1	70.7	
Medium Trucks:	64.0	63.3	56.9	55.4	63.8	64.1	
Heavy Trucks:	64.4	63.8	54.8	56.0	64.4	64.5	
Vehicle Noise:	72.1	71.2	68.1	63.3	71.9	72.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	180	388	836
CNEL:	90	193	417	898



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: University Drive  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 58,667 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,840 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.44	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-12.80	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-16.75	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.7	67.9	61.9	70.5	71.1
Medium Trucks:	64.3	63.6	57.3	55.7	64.2	64.4
Heavy Trucks:	64.7	64.1	55.1	56.4	64.7	64.8
Vehicle Noise:	72.4	71.5	68.5	63.7	72.2	72.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	119	255	550	1,185
CNEL:	127	274	591	1,273

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: University Drive  
 Road Segment: Mesa to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,486 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,753 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.33	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-13.90	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.86	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.6	71.5	69.8	63.7	72.3	72.9
Medium Trucks:	66.2	65.5	59.1	57.6	66.0	66.3
Heavy Trucks:	66.6	66.0	57.0	58.2	66.6	66.7
Vehicle Noise:	74.3	73.4	70.3	65.5	74.1	74.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	112	242	522	1,124
CNEL:	121	260	561	1,208

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred Project Name: Irvine GP  
 Road Name: University Drive Job Number: 15937  
 Road Segment: MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 46,290 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,819 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.41	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-13.83	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.78	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.7	71.6	69.8	63.8	72.4	73.0
Medium Trucks:	66.2	65.6	59.2	57.7	66.1	66.4
Heavy Trucks:	66.6	66.1	57.0	58.3	66.6	66.8
Vehicle Noise:	74.4	73.4	70.4	65.6	74.2	74.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	245	528	1,138
CNEL:	122	263	567	1,222

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: University Drive  
 Road Segment: California Avenue to Mesa

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,330 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,657 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.22	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.02	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.97	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.5	71.4	69.7	63.6	72.2	72.8
Medium Trucks:	66.1	65.4	59.0	57.5	65.9	66.2
Heavy Trucks:	66.5	65.9	56.8	58.1	66.4	66.6
Vehicle Noise:	74.2	73.3	70.2	65.4	74.0	74.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	111	238	513	1,105
CNEL:	119	256	551	1,187

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: University Drive  
 Road Segment: Campus Drive to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,310 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,078 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.47	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.76	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.72	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.8	67.7	66.0	59.9	68.5	69.1	
Medium Trucks:	62.3	61.7	55.3	53.8	62.2	62.5	
Heavy Trucks:	62.8	62.2	53.1	54.4	62.7	62.9	
Vehicle Noise:	70.5	69.6	66.5	61.7	70.3	70.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	189	407	877
CNEL:	94	203	437	942

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred	Project Name: Irvine GP
Road Name: University Drive	Job Number: 15937
Road Segment: SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,200 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 1,667 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 50 mph																					
Near/Far Lane Distance: 52 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 50.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 50.0 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 42.814																				
Left View: -90.0 degrees	Medium Trucks: 42.720																				
Right View: 90.0 degrees	Heavy Trucks: 42.814																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.19	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-17.43	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-21.38	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.7	66.9	60.8	69.5	70.1
Medium Trucks:	63.3	62.6	56.3	54.7	63.2	63.4
Heavy Trucks:	63.7	63.1	54.1	55.3	63.7	63.8
Vehicle Noise:	71.4	70.5	67.5	62.7	71.2	71.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	280	603
CNEL:	65	140	301	648

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred Project Name: Irvine GP  
 Road Name: University Drive Job Number: 15937  
 Road Segment: SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 34,047 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 2,809 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 50 mph																					
Near/Far Lane Distance: 78 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 84.0 feet	Heavy Trucks: 8.006 <span style="float:right">Grade Adjustment: 0.0</span>																				
Centerline Dist. to Observer: 84.0 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet																					
Road Grade: 0.0%																					
Left View: -90.0 degrees																					
Right View: 90.0 degrees																					
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458																				
	Medium Trucks: 74.404																				
	Heavy Trucks: 74.458																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.08	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.16	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.12	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.1
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5
Vehicle Noise:	70.1	69.2	66.1	61.3	69.9	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	178	383	825
CNEL:	89	191	411	886

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: University Drive  
 Road Segment: San Joaquin to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,020 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,477 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.53	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.71	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.66	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.8	65.0	59.0	67.6	68.2
Medium Trucks:	61.4	60.7	54.4	52.8	61.3	61.5
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	69.5	68.6	65.6	60.8	69.3	69.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	163	352	758
CNEL:	81	176	378	815



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: University Drive  
 Road Segment: Harvard Avenue to San Joaquin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,892 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,466 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.51	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.73	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.68	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.8	65.0	58.9	67.6	68.2
Medium Trucks:	61.4	60.7	54.3	52.8	61.3	61.5
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	69.5	68.6	65.6	60.8	69.3	69.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	163	351	756
CNEL:	81	175	377	812

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Valley Oak Drive  
 Road Segment: Hawkcreek to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,433 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,108 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.96	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.20	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.16	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.0	64.9	63.2	57.1	65.7	66.3	
Medium Trucks:	59.6	58.9	52.5	51.0	59.4	59.7	
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1	
Vehicle Noise:	67.7	66.8	63.7	58.9	67.5	68.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	92	197	425
CNEL:	46	98	212	457

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Valley Oak Drive  
 Road Segment: Irvine Center Drive to Oak Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,018 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 909 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 42.814				
Road Grade: 0.0%	Medium Trucks: 42.720				
Left View: -90.0 degrees	Heavy Trucks: 42.814				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.82	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-20.06	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-24.02	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.0	64.3	58.2	66.8	67.4
Medium Trucks:	60.7	60.0	53.6	52.1	60.5	60.8
Heavy Trucks:	61.1	60.5	51.4	52.7	61.1	61.2
Vehicle Noise:	68.8	67.9	64.8	60.0	68.6	69.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	87	187	402
CNEL:	43	93	201	432

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Valley Oak Drive  
 Road Segment: Barranca Parkway to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,317 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 851 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-20.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-24.30	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.8	63.8	62.0	56.0	64.6	65.2	
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5	
Heavy Trucks:	58.8	58.2	49.2	50.5	58.8	58.9	
Vehicle Noise:	66.5	65.6	62.6	57.8	66.3	66.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	166	357
CNEL:	38	83	178	383

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Valley Oak Drive  
 Road Segment: Alton Parkway to Hawkcreek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,501 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	536 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.31	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.8	61.8	60.0	54.0	62.6	63.2
Medium Trucks:	56.4	55.7	49.4	47.8	56.3	56.5
Heavy Trucks:	56.8	56.2	47.2	48.5	56.8	56.9
Vehicle Noise:	64.5	63.6	60.6	55.8	64.3	64.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	56	122	262
CNEL:	28	61	131	282

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Marriott to Morse Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,606 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,855 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.63	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.59	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.8	66.0	59.9	68.6	69.2
Medium Trucks:	62.6	61.9	55.5	54.0	62.5	62.7
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	70.7	69.7	66.6	61.9	70.5	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	145	311	671
CNEL:	72	155	334	720

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Michelson Drive to Quartz

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 33,326 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,749 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.44	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.75	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5
Heavy Trucks:	63.3	62.7	53.6	54.9	63.2	63.4
Vehicle Noise:	70.5	69.6	66.4	61.8	70.3	70.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	141	304	654
CNEL:	70	151	326	702

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,069 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,728 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.41	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.83	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.79	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.6	65.8	59.7	68.4	69.0
Medium Trucks:	62.4	61.7	55.3	53.8	62.3	62.5
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3
Vehicle Noise:	70.5	69.6	66.4	61.7	70.3	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	140	302	651
CNEL:	70	150	324	698



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 41,216 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,400 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 70.413				
Road Grade: 0.0%	Medium Trucks: 70.356				
Left View: -90.0 degrees	Heavy Trucks: 70.413				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.36	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.87	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	84.25	-17.83	-2.33	-1.20	-5.25	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.2	65.5	59.4	68.0	68.6
Medium Trucks:	62.0	61.4	55.0	53.5	61.9	62.2
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0
Vehicle Noise:	70.1	69.2	66.1	61.4	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	345	742
CNEL:	80	172	370	796

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Main Street to Anchor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,464 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,678 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.33	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.91	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.87	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.5	65.7	59.7	68.3	68.9
Medium Trucks:	62.3	61.6	55.3	53.7	62.2	62.4
Heavy Trucks:	63.1	62.6	53.5	54.8	63.1	63.2
Vehicle Noise:	70.4	69.5	66.3	61.6	70.2	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	139	298	643
CNEL:	69	149	320	690

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Anchor to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,313 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,583 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.02	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	62.1	61.5	55.1	53.6	62.0	62.3
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	70.2	69.3	66.2	61.5	70.0	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	135	291	628
CNEL:	67	145	313	673

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Morse to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,530 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,436 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.92	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.32	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.28	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.1	67.1	65.3	59.2	67.9	68.5	
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0	
Heavy Trucks:	62.7	62.1	53.1	54.4	62.7	62.8	
Vehicle Noise:	70.0	69.1	65.9	61.2	69.8	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	280	604
CNEL:	65	140	301	648

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Martin to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,404 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,096 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.93	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.5	66.4	64.6	58.6	67.2	67.8	
Medium Trucks:	61.2	60.6	54.2	52.7	61.1	61.3	
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2	
Vehicle Noise:	69.3	68.4	65.3	60.6	69.1	69.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	253	546
CNEL:	59	126	272	586

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Campus Drive to Martin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,957 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,059 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.01	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.3	64.6	58.5	67.1	67.7
Medium Trucks:	61.2	60.5	54.1	52.6	61.0	61.3
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	69.2	68.3	65.2	60.5	69.0	69.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	250	540
CNEL:	58	125	269	579

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Dupont Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,911 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,055 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.02	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.3	64.6	58.5	67.1	67.7
Medium Trucks:	61.2	60.5	54.1	52.6	61.0	61.3
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	69.2	68.3	65.2	60.5	69.0	69.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	250	539
CNEL:	58	125	268	578

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Jeffrey Road to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,208 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,822 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.55	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.68	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.64	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.5	61.9	55.5	53.9	62.4	62.6
Heavy Trucks:	63.4	62.8	53.7	55.0	63.3	63.5
Vehicle Noise:	70.6	69.7	66.5	61.9	70.4	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	143	309	666
CNEL:	71	154	332	714



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Myford Road to Jamboree Road SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,735 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,876 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.78	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.46	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.41	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	65.9	64.2	58.1	66.7	67.3
Medium Trucks:	60.8	60.1	53.7	52.2	60.6	60.9
Heavy Trucks:	61.6	61.0	52.0	53.2	61.6	61.7
Vehicle Noise:	68.8	67.9	64.8	60.1	68.6	69.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	109	235	507
CNEL:	54	117	252	544

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Walnut Avenue  
 Road Segment: The Mall Street to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,014 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,734 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.44	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.76	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.7	65.6	63.8	57.8	66.4	67.0	
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5	
Heavy Trucks:	61.3	60.7	51.6	52.9	61.2	61.4	
Vehicle Noise:	68.5	67.6	64.4	59.8	68.3	68.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	104	223	481
CNEL:	52	111	240	516

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Harvard Avenue to The Mall Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,921 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,726 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.42	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.82	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.77	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.6	65.6	63.8	57.7	66.4	67.0	
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5	
Heavy Trucks:	61.2	60.6	51.6	52.9	61.2	61.3	
Vehicle Noise:	68.5	67.6	64.4	59.7	68.3	68.7	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	223	480
CNEL:	51	111	239	515

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Franciscan Street to Ravenwood Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,748 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,629 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.03	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.3	63.6	57.5	66.1	66.7
Medium Trucks:	60.1	59.5	53.1	51.6	60.0	60.3
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1
Vehicle Noise:	68.2	67.3	64.2	59.5	68.0	68.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	99	214	462
CNEL:	50	107	230	495

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Ravenwood Street to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,073 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,574 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.22	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.18	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.2	65.2	63.4	57.3	66.0	66.6	
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1	
Heavy Trucks:	60.8	60.2	51.2	52.5	60.8	60.9	
Vehicle Noise:	68.1	67.2	64.0	59.3	67.9	68.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	97	209	451
CNEL:	48	104	225	484

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Culver Drive to Franciscan Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,198 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,584 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.05	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.19	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.15	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.2	63.4	57.4	66.0	66.6
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1
Heavy Trucks:	60.9	60.3	51.2	52.5	60.8	61.0
Vehicle Noise:	68.1	67.2	64.0	59.4	67.9	68.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	98	210	453
CNEL:	49	105	226	486

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Peters Canyon Road to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,674 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,118 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.31	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.93	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.89	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.8	63.0	57.0	65.6	66.2
Medium Trucks:	59.6	59.0	52.6	51.0	59.5	59.7
Heavy Trucks:	60.5	59.9	50.8	52.1	60.5	60.6
Vehicle Noise:	67.7	66.8	63.7	59.0	67.5	68.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	124	266	573
CNEL:	62	133	286	615

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred	Project Name: Irvine GP
Road Name: Walnut Avenue	Job Number: 15937
Road Segment: Jamboree Road NB Off-Ramp to Peters Canyon Road	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,721 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 2,039 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 45 mph																					
Near/Far Lane Distance: 78 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 84.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 84.0 feet																					
Barrier Distance to Observer: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Observer Height (Above Pad): 5.0 feet	Autos: 74.458																				
Pad Elevation: 0.0 feet	Medium Trucks: 74.404																				
Road Elevation: 0.0 feet	Heavy Trucks: 74.458																				
Road Grade: 0.0%																					
Left View: -90.0 degrees																					
Right View: 90.0 degrees																					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.14	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.05	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.6	62.9	56.8	65.4	66.1
Medium Trucks:	59.5	58.8	52.4	50.9	59.3	59.6
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	67.5	66.6	63.5	58.8	67.3	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	120	260	559
CNEL:	60	129	278	600



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Yale Avenue to Kazan Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,757 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,217 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.33	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.29	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.1	62.3	56.2	64.9	65.5
Medium Trucks:	58.9	58.2	51.8	50.3	58.8	59.0
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8
Vehicle Noise:	67.0	66.0	62.9	58.2	66.8	67.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	176	380
CNEL:	41	88	189	408

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Wisteria to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,563 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,201 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.35	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.1	64.0	62.2	56.2	64.8	65.4	
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9	
Heavy Trucks:	59.7	59.1	50.0	51.3	59.6	59.8	
Vehicle Noise:	66.9	66.0	62.8	58.2	66.7	67.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	175	377
CNEL:	40	87	188	404

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred Project Name: Irvine GP  
 Road Name: Warner Avenue Job Number: 15937  
 Road Segment: Jamboree Road SB Off-ramp to Construction North

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,741 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,371 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.80	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.44	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.40	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	66.9	65.2	59.1	67.8	68.4
Medium Trucks:	61.8	61.1	54.7	53.2	61.7	61.9
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	69.8	68.9	65.8	61.1	69.7	70.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	128	275	593
CNEL:	64	137	295	636

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Warner Avenue  
 Road Segment: Construction North to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,878 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,640 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.20	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.04	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.00	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.4	65.3	63.6	57.5	66.1	66.8	
Medium Trucks:	60.2	59.5	53.1	51.6	60.1	60.3	
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1	
Vehicle Noise:	68.2	67.3	64.2	59.5	68.1	68.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	100	215	464
CNEL:	50	107	231	497

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Warner Avenue  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,949 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,151 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.58	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.54	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	63.8	62.0	56.0	64.6	65.2
Medium Trucks:	58.6	58.0	51.6	50.1	58.5	58.7
Heavy Trucks:	59.5	58.9	49.8	51.1	59.5	59.6
Vehicle Noise:	66.7	65.8	62.7	58.0	66.5	67.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	170	366
CNEL:	39	85	182	393

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Warner Avenue  
 Road Segment: Santa Ynez to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,142 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 919 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.55	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.51	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.9	62.8	61.1	55.0	63.6	64.2
Medium Trucks:	57.7	57.0	50.6	49.1	57.5	57.8
Heavy Trucks:	58.5	57.9	48.9	50.1	58.5	58.6
Vehicle Noise:	65.7	64.8	61.7	57.0	65.5	66.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	68	146	315
CNEL:	34	73	157	338

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Warner Avenue  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,428 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 860 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.84	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.80	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.6	62.5	60.8	54.7	63.3	64.0	
Medium Trucks:	57.4	56.7	50.3	48.8	57.3	57.5	
Heavy Trucks:	58.2	57.6	48.6	49.8	58.2	58.3	
Vehicle Noise:	65.4	64.5	61.4	56.7	65.3	65.7	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	140	302
CNEL:	32	70	150	324

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: West Yale Loop  
 Road Segment: Alton Parkway to Blue Lake North

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,462 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 781 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.52	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.75	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.71	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.8	60.7	58.9	52.9	61.5	62.1	
Medium Trucks:	55.7	55.1	48.7	47.1	55.6	55.8	
Heavy Trucks:	57.0	56.5	47.4	48.7	57.0	57.1	
Vehicle Noise:	63.8	62.9	59.6	55.0	63.6	64.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	233
CNEL:	25	54	116	249



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: West Yale Loop  
 Road Segment: Eagle Run to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,126 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 753 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.67	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.91	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.87	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.6	60.5	58.8	52.7	61.3	61.9	
Medium Trucks:	55.6	54.9	48.5	47.0	55.4	55.7	
Heavy Trucks:	56.9	56.3	47.3	48.5	56.9	57.0	
Vehicle Noise:	63.6	62.7	59.4	54.9	63.4	63.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	49	106	227
CNEL:	24	52	113	244

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: West Yale Loop  
 Road Segment: Thunder Run to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,279 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 766 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.84	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.79	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.7	60.6	58.8	52.8	61.4	62.0	
Medium Trucks:	55.6	55.0	48.6	47.1	55.5	55.8	
Heavy Trucks:	57.0	56.4	47.3	48.6	56.9	57.1	
Vehicle Noise:	63.7	62.8	59.5	55.0	63.5	63.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	107	230
CNEL:	25	53	114	246

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: West Yale Loop  
 Road Segment: Main Street to Timber Run

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,177 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	592 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.72	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.91	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.6	59.5	57.7	51.7	60.3	60.9
Medium Trucks:	54.5	53.9	47.5	45.9	54.4	54.6
Heavy Trucks:	55.8	55.3	46.2	47.5	55.8	55.9
Vehicle Noise:	62.6	61.7	58.4	53.8	62.4	62.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	42	90	194
CNEL:	21	45	96	207

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: West Yale Loop  
 Road Segment: Yale Avenue to Shorebird

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,554 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 623 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.73	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.69	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.8	59.7	57.9	51.9	60.5	61.1
Medium Trucks:	54.7	54.1	47.7	46.2	54.6	54.9
Heavy Trucks:	56.1	55.5	46.4	47.7	56.0	56.2
Vehicle Noise:	62.8	61.9	58.6	54.1	62.6	63.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	43	93	201
CNEL:	21	46	100	215

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: West Yale Loop  
 Road Segment: Warner Avenue to Stonecreek South

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,766 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 558 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.97	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.21	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.17	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.3	59.2	57.5	51.4	60.0	60.6	
Medium Trucks:	54.3	53.6	47.2	45.7	54.1	54.4	
Heavy Trucks:	55.6	55.0	46.0	47.2	55.6	55.7	
Vehicle Noise:	62.3	61.4	58.1	53.6	62.1	62.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	40	86	186
CNEL:	20	43	93	199

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: West Yale Loop  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,550 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	540 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.31	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.2	59.1	57.3	51.3	59.9	60.5
Medium Trucks:	54.1	53.5	47.1	45.5	54.0	54.2
Heavy Trucks:	55.4	54.9	45.8	47.1	55.4	55.6
Vehicle Noise:	62.2	61.3	58.0	53.4	62.0	62.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	85	182
CNEL:	20	42	91	195

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: West Yale Loop  
 Road Segment: Stonecreek North to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,628 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 547 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.06	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.30	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.26	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.2	59.1	57.4	51.3	59.9	60.5	
Medium Trucks:	54.2	53.5	47.1	45.6	54.1	54.3	
Heavy Trucks:	55.5	54.9	45.9	47.1	55.5	55.6	
Vehicle Noise:	62.2	61.3	58.0	53.5	62.0	62.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	40	85	184
CNEL:	20	42	91	197

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: West Yale Loop  
 Road Segment: Birdsong to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,435 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 531 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.38	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.1	59.0	57.2	51.2	59.8	60.4	
Medium Trucks:	54.0	53.4	47.0	45.5	53.9	54.2	
Heavy Trucks:	55.4	54.8	45.7	47.0	55.3	55.5	
Vehicle Noise:	62.1	61.2	57.9	53.4	61.9	62.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	84	180
CNEL:	19	42	90	193



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Westwood  
 Road Segment: Yorktown to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,049 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 499 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-3.88	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-21.12	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-25.07	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.1	60.0	58.2	52.2	60.8	61.4
Medium Trucks:	55.3	54.6	48.3	46.7	55.2	55.4
Heavy Trucks:	57.1	56.5	47.5	48.8	57.1	57.2
Vehicle Noise:	63.3	62.4	59.0	54.6	63.1	63.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	13	28	60	130
CNEL:	14	30	65	139

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Westwood  
 Road Segment: Bryan Avenue to Leaf

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,817 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 315 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.88	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-23.12	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-27.07	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	59.1	58.0	56.2	50.2	58.8	59.4	
Medium Trucks:	53.3	52.6	46.3	44.7	53.2	53.4	
Heavy Trucks:	55.1	54.5	45.5	46.8	55.1	55.2	
Vehicle Noise:	61.3	60.4	57.0	52.6	61.1	61.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	10	21	44	96
CNEL:	10	22	47	102

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Yale Avenue  
 Road Segment: Deerfield Avenue to Winvale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,532 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 869 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.56	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-19.80	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-23.76	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.5	63.7	57.6	66.3	66.9
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4
Heavy Trucks:	61.1	60.5	51.5	52.8	61.1	61.2
Vehicle Noise:	68.4	67.5	64.3	59.6	68.2	68.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	132	283
CNEL:	30	66	141	304

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Yale Avenue  
 Road Segment: Hicks Canyon Drive to Meadowood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,828 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	646 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.85	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-21.09	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-25.04	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.2	62.4	56.4	65.0	65.6
Medium Trucks:	59.0	58.3	52.0	50.4	58.9	59.1
Heavy Trucks:	59.8	59.3	50.2	51.5	59.8	60.0
Vehicle Noise:	67.1	66.2	63.0	58.3	66.9	67.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	233
CNEL:	25	54	116	250

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Yale Avenue  
 Road Segment: Walnut Avenue to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,775 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,219 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">VehicleType</th> <th style="text-align: center;">Day</th> <th style="text-align: center;">Evening</th> <th style="text-align: center;">Night</th> <th style="text-align: center;">Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td style="text-align: center;">77.5%</td> <td style="text-align: center;">12.9%</td> <td style="text-align: center;">9.6%</td> <td style="text-align: center;">97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td style="text-align: center;">84.8%</td> <td style="text-align: center;">4.9%</td> <td style="text-align: center;">10.3%</td> <td style="text-align: center;">1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td style="text-align: center;">86.5%</td> <td style="text-align: center;">2.7%</td> <td style="text-align: center;">10.8%</td> <td style="text-align: center;">0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 32.140 Medium Trucks: 32.016 Heavy Trucks: 32.141																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.09	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-18.33	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	84.25	-22.29	2.78	-1.20	-5.56	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.9	66.1	60.1	68.7	69.3
Medium Trucks:	62.7	62.0	55.7	54.1	62.6	62.8
Heavy Trucks:	63.5	63.0	53.9	55.2	63.5	63.7
Vehicle Noise:	70.8	69.9	66.7	62.0	70.6	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	94	203	438
CNEL:	47	101	218	470

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Yale Avenue  
 Road Segment: Roosevelt to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,287 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,179 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.43	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.0	63.9	62.1	56.1	64.7	65.3	
Medium Trucks:	58.7	58.1	51.7	50.2	58.6	58.9	
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7	
Vehicle Noise:	66.8	65.9	62.8	58.1	66.6	67.1	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	80	173	372
CNEL:	40	86	185	399

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Yale Avenue  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,713 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,131 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.42	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.61	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.8	63.7	62.0	55.9	64.5	65.1
Medium Trucks:	58.6	57.9	51.5	50.0	58.4	58.7
Heavy Trucks:	59.4	58.8	49.8	51.0	59.4	59.5
Vehicle Noise:	66.6	65.7	62.6	57.9	66.4	66.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	168	362
CNEL:	39	84	180	388

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Yale Avenue  
 Road Segment: West Yale Loop to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,162 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,003 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.94	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.17	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.13	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.2	61.4	55.4	64.0	64.6
Medium Trucks:	58.0	57.4	51.0	49.5	57.9	58.2
Heavy Trucks:	58.9	58.3	49.3	50.5	58.9	59.0
Vehicle Noise:	66.1	65.2	62.1	57.4	65.9	66.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	72	155	334
CNEL:	36	77	166	358



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Yale Avenue  
 Road Segment: Winvale Avenue to Karen Ann Lane

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,472 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 864 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.59	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.82	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.78	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.6	62.6	60.8	54.7	63.4	64.0	
Medium Trucks:	57.4	56.7	50.4	48.8	57.3	57.5	
Heavy Trucks:	58.2	57.6	48.6	49.9	58.2	58.3	
Vehicle Noise:	65.5	64.6	61.4	56.7	65.3	65.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	140	302
CNEL:	32	70	151	324

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Yale Avenue  
 Road Segment: Karen Ann Lane to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	10,472 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	864 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		57.786		
Left View:	-90.0 degrees	Medium Trucks:		57.717		
Right View:	90.0 degrees	Heavy Trucks:		57.787		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.59	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.82	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.78	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.6	62.6	60.8	54.7	63.4	64.0
Medium Trucks:	57.4	56.7	50.4	48.8	57.3	57.5
Heavy Trucks:	58.2	57.6	48.6	49.9	58.2	58.3
Vehicle Noise:	65.5	64.6	61.4	56.7	65.3	65.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	140	302
CNEL:	32	70	151	324

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Yale Avenue  
 Road Segment: Trabuco Road to Southwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,318 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 851 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.65	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.89	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.84	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.6	62.5	60.7	54.7	63.3	63.9	
Medium Trucks:	57.3	56.6	50.3	48.7	57.2	57.4	
Heavy Trucks:	58.2	57.6	48.5	49.8	58.1	58.3	
Vehicle Noise:	65.4	64.5	61.3	56.7	65.2	65.7	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	139	299
CNEL:	32	69	149	321

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Yale Avenue  
 Road Segment: Southwood to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,907 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 817 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.83	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.02	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.4	62.3	60.6	54.5	63.1	63.7	
Medium Trucks:	57.1	56.5	50.1	48.6	57.0	57.3	
Heavy Trucks:	58.0	57.4	48.4	49.6	58.0	58.1	
Vehicle Noise:	65.2	64.3	61.2	56.5	65.0	65.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	135	291
CNEL:	31	67	145	313

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Yale Avenue  
 Road Segment: Northwood to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,164 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 756 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.40	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.36	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.0	62.0	60.2	54.2	62.8	63.4	
Medium Trucks:	56.8	56.1	49.8	48.2	56.7	56.9	
Heavy Trucks:	57.6	57.1	48.0	49.3	57.6	57.8	
Vehicle Noise:	64.9	64.0	60.8	56.1	64.7	65.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	60	128	277
CNEL:	30	64	138	297

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Yale Avenue  
 Road Segment: Bryan Avenue to Monticello

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,902 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	734 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.53	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.49	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.9	61.9	60.1	54.0	62.7	63.3
Medium Trucks:	56.7	56.0	49.6	48.1	56.6	56.8
Heavy Trucks:	57.5	56.9	47.9	49.1	57.5	57.6
Vehicle Noise:	64.8	63.9	60.7	56.0	64.6	65.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	126	271
CNEL:	29	63	135	291

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Yale Avenue  
 Road Segment: Irvine Boulevard to Park Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,457 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 615 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.06	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.30	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.26	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.2	61.1	59.3	53.3	61.9	62.5	
Medium Trucks:	55.9	55.2	48.9	47.3	55.8	56.0	
Heavy Trucks:	56.8	56.2	47.1	48.4	56.7	56.9	
Vehicle Noise:	64.0	63.1	59.9	55.3	63.8	64.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	112	241
CNEL:	26	56	120	259

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Yale Avenue  
 Road Segment: University Drive to Royce

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,979 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	328 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	50.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 42.814				
Road Grade:	0.0%	Medium Trucks: 42.720				
Left View:	-90.0 degrees	Heavy Trucks: 42.814				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-6.79	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	79.45	-24.03	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	84.25	-27.98	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.4	60.3	58.5	52.5	61.1	61.7
Medium Trucks:	55.1	54.5	48.1	46.6	55.0	55.3
Heavy Trucks:	56.0	55.4	46.4	47.6	56.0	56.1
Vehicle Noise:	63.2	62.3	59.2	54.5	63.0	63.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	80	171
CNEL:	18	40	85	184



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Yale Court  
 Road Segment: Arborwood to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,441 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 531 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-2.14	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-19.38	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-23.34	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.2	56.2	54.4	48.3	57.0	57.6
Medium Trucks:	52.1	51.4	45.0	43.5	51.9	52.2
Heavy Trucks:	55.3	54.7	45.6	46.9	55.3	55.4
Vehicle Noise:	60.1	59.3	55.4	51.4	59.9	60.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	80
CNEL:	9	18	40	85

## APPENDIX G

### Irvine General Plan Update Traffic Noise Assessment

**DATE:** March 11, 2024  
**TO:** Nick Larkin, RECON Environmental, Inc.  
**FROM:** William Maddux  
**JOB NO:** Noise Assessment

## IRVINE GENERAL PLAN UPDATE TRAFFIC NOISE ASSESSMENT

Nick Larkin,

Urban Crossroads, Inc. is pleased to provide the following Traffic Noise Assessment for the Irvine General Plan Update (Project). The City of Irvine is adjacent to the County of Orange, as well as the Cities of Newport Beach, Costa Mesa, Orange, Lake Forest, Tustin, Santa Ana, Laguna Hills, Laguna Woods, and Laguna Beach. With the adoption of the certified 2021-2029 Housing Element in May 2022, the City is required to update the appropriate elements of the General Plan to accommodate the residential site inventory from the 2021-2029 Housing Element. This includes updates to the land use element and the circulation element. Additionally, the City would update the open space element, safety element, and noise element to address statutory requirements. The City would introduce an environmental protection and climate action element and would also incorporate health and wellness throughout the updated General Plan. The Draft Program EIR will address the short- and long-term effects of the project on the environment.

## PROJECT SCENARIOS

The Project Scenarios evaluated in the Noise Assessment are as follows:

- **Current General Plan/ No Project Alternative** – This scenario represents the currently approved Buildout land uses as permitted under the City's existing adopted General Plan. Future development under this Alternative includes unbuilt dwelling units and non-residential uses identified in the existing General Plan. The Great Park Framework Plan Phase 1 land uses are also included in this scenario. The Current General Plan land uses modeled for this assessment were obtained from Table 3-2 from the *Irvine General Plan Update VMT Study* prepared by Iteris, Inc.
- **Conservative Project Scenario** – This alternative evaluates the Current General Plan plus 57,656 RHNA housing units within the adopted Housing Site Inventory sites in the City's approved Housing Element. The 57,656 new residential units consist of 55,395 new dwelling units and 2,261 unbuilt units already in the General Plan. For the purpose of evaluating potential

effects, 55,395 dwelling units are analyzed under this alternative. This alternative also includes an analysis of both Phase 1 and Buildout of the Great Park Framework Plan land uses and the extension of Ada roadway from the Irvine Metrolink/Amtrak Station to Marine Way o. The Conservative Project Scenario land uses modeled for this assessment were obtained from Tables 2-1 and 2-3 from the *Irvine General Plan Update VMT Study* prepared by Iteris, Inc.

- **Cumulative Plus Conservative Project Scenario** – This scenario evaluates the Conservative Project Scenario plus additional cumulative projects that are assumed to be built in the background conditions in both the City of Irvine and in surrounding jurisdictions. Cumulative projects include known future residential development in adjacent Cities. The Cumulative Plus Conservative Project Scenario land uses modeled in this assessment were obtained from Tables 2-1, 2-3, and 2-4 from the *Irvine General Plan Update VMT Study* prepared by Iteris, Inc.

#### 4 NOISE LEVEL INCREASES

Noise level increases resulting from the Project are evaluated based on the Appendix G CEQA Guidelines. Under CEQA, consideration must be given to the magnitude of the increase, the existing baseline ambient noise levels, and the location of noise-sensitive receivers to determine if a noise increase represents a significant adverse environmental impact. This approach *recognizes that there is no single noise increase that renders the noise impact significant*. (16) This is primarily because of the wide variation in individual thresholds of annoyance and differing individual experiences with noise. Thus, an important way of determining a person's subjective reaction to a new noise is the comparison of it to the existing environment to which one has adapted—the so-called *ambient* environment.

In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will typically be judged. The Federal Interagency Committee on Noise (FICON) (17) developed guidance to be used for the assessment of project-generated increases in noise levels that consider the ambient noise level. The FICON recommendations are based on studies that relate aircraft noise levels to the percentage of persons highly annoyed by aircraft noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, these recommendations are often used in environmental noise impact assessments involving the use of cumulative noise exposure metrics, such as the average-daily noise level (CNEL) and equivalent continuous noise level ( $L_{eq}$ ).

The FICON guidance provides an established source of criteria to assess the impacts of substantial temporary or permanent increase in baseline ambient noise levels. Based on the FICON criteria, the amount to which a given noise level increase is considered acceptable is reduced when the without Project (baseline) noise levels are already shown to exceed certain land-use specific exterior noise level criteria. The specific levels are based on typical responses to noise level increases of 5 dBA or *readily perceptible*, 3 dBA or *barely perceptible*, and 1.5 dBA depending on the underlying without Project noise levels for noise-sensitive uses. These levels

of increases and their perceived acceptance are consistent with guidance provided by both the Federal Highway Administration (18 p. 9) and Caltrans (7 p. 2\_48).

**SIGNIFICANCE CRITERIA SUMMARY**

Noise impacts shall be considered significant if any of the following occur as a direct result of the proposed development. The following significance criteria summary matrix includes the allowable criteria used to identify potentially significant incremental noise level increases.

Analysis	Receiving Land Use	Condition(s)	Significance Criteria
Off-Site	Noise-Sensitive <sup>1</sup>	if ambient is < 60 dBA CNEL	≥ 5 dBA CNEL Project increase
		if ambient is 60 - 65 dBA CNEL	≥ 3 dBA CNEL Project increase
		if ambient is > 65 dBA CNEL	≥ 1.5 dBA CNEL Project increase

<sup>1</sup> FICON, 1992.

**TRAFFIC NOISE METHODS AND PROCEDURES**

The following section outlines the methods and procedures used to estimate and analyze the future traffic noise environment. Consistent with the City of Irvine General Plan Policies, all transportation related noise levels are presented in terms of the 24-hour CNEL's.

**FHWA TRAFFIC NOISE PREDICTION MODEL**

The estimated roadway noise impacts from vehicular traffic were calculated using a computer program that replicates the Federal Highway Administration (FHWA) Traffic Noise Prediction Model- FHWA-RD-77-108. The FHWA Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). In California the national REMELs are substituted with the California Vehicle Noise (Calveno) Emission Levels. Adjustments are then made to the REMEL to account for: the roadway classification (e.g., collector, secondary, major or arterial), the roadway active width (i.e., the distance between the center of the outermost travel lanes on each side of the roadway), the total average daily traffic (ADT), the travel speed, the percentages of automobiles, medium trucks, and heavy trucks in the traffic volume, the roadway grade, the angle of view (e.g., whether the roadway view is blocked), the site conditions ("hard" or "soft" relates to the absorption of the ground, pavement, or landscaping), and the percentage of total ADT which flows each hour throughout a 24-hour period.

**OFF-SITE TRAFFIC NOISE PREDICTION MODEL INPUTS**

Table 1 (Appendix A) identifies the 540 off-site study area roadway segments, the distance from the centerline to adjacent land use based on the functional roadway classifications per the Project traffic report, and the posted vehicle speeds. Consistent with the *Traffic Analysis* prepared by Iteris, Inc. for the Project, the off-site traffic noise analysis includes the following traffic scenarios.

- Existing Conditions
- Current General Plan Buildout/No Project Alternative
- Conservative Alternative
- Cumulative Conservative Alternative
- Reduced Project Alternative

- **Cumulative Reduced Project Alternative**

The ADT volumes used for this study are presented on Table 2 (Appendix A). Table 3 and Table 4 (Appendix A) provide the time of day (daytime, evening, and nighttime) vehicle splits used for calculating CNEL values.

The traffic volumes shown on Table 2 reflect future long-range traffic conditions needed to assess the future on-site traffic noise environment and to identify potential mitigation measures (if any) that address the worst-case future conditions. For the purposes of this analysis, soft site conditions were used to analyze the on-site traffic noise impacts for the Project study area. Soft site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation. Research conducted by Caltrans has shown that the use of soft site conditions is appropriate for the application of the FHWA traffic noise prediction model used in this analysis. (23) Table 3 presents the time-of-day vehicle splits by vehicle type used to develop the 24-hour CNEL, and Table 4 presents the total traffic flow distributions (vehicle mixes) used for this analysis. The information in Tables 3 and 4 provides the hourly distribution percentages of automobile, medium trucks, and heavy trucks for input into the FHWA Model based on roadway types.

## **TRANSPORTATION NOISE IMPACTS**

Noise contours were used to assess the Project's incremental traffic-related noise impacts at land uses adjacent to roadways conveying Project traffic. The noise contours represent the distance to noise levels of a constant value and are measured from the center of the roadway for the 70, 65, and 60 dBA noise levels. The noise contours do not consider the effect of any existing noise barriers or topography that may attenuate ambient noise levels. In addition, because the noise contours reflect modeling of vehicular noise on area roadways, they appropriately do not reflect noise contributions from the surrounding stationary noise sources within the Project study area. Tables 5 to 10 present a summary of the exterior traffic noise levels for each traffic condition. Appendix B includes the traffic noise level contours worksheets for each traffic condition.

### **TRAFFIC NOISE CONTOURS**

Noise contours were used to assess the Project's incremental traffic-related noise impacts at land uses adjacent to roadways conveying Project traffic. The noise contours represent the distance to noise levels of a constant value and are measured from the center of the roadway for the 70, 65, and 60 dBA noise levels. The noise contours do not consider the effect of any existing noise barriers or topography that may attenuate ambient noise levels. In addition, because the noise contours reflect modeling of vehicular noise on area roadways, they appropriately do not reflect noise contributions from the surrounding stationary noise sources within the Project study area. Tables 5 through 10 present a summary of the exterior traffic noise levels, without barrier attenuation, for the 540 study area roadway segments. Appendix B includes a summary of the traffic noise level contours for each of the traffic scenarios.

### **EXISTING GENERAL PLAN/NO PROJECT TRAFFIC NOISE LEVEL INCREASES**

An analysis of existing traffic noise levels plus traffic noise generated by the Current General Plan has been included in this report to fully analyze all the traffic scenarios identified in the *Traffic*

*Impact Analysis.* This condition is provided solely for informational purposes and will not occur, since the Project will not be fully developed and occupied under Existing conditions. Table 5 (Appendix A) shows the Existing conditions CNEL noise levels. The Existing exterior noise levels are expected to range from up to 79.0 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 6 (Appendix A) shows the General Plan Buildout conditions will range from 53.5 to 79.1 CNEL, except along Ada Street since it would not exist under the current General Plan. Table 11 (Appendix A) shows that the General Plan Buildout conditions off-site traffic noise level impacts will exceed noise level increase thresholds along 86 segments. Based on the significance criteria for off-site traffic noise, land uses adjacent to these study area roadway segments would experience a significant noise level increases due to the Project-related traffic as compared to the existing traffic noise levels.

### **EXISTING TO CONSERVATIVE PROJECT TRAFFIC NOISE LEVEL INCREASES**

An analysis of existing traffic noise levels plus traffic noise generated by the Conservative Project has been included in this report to fully analyze all the traffic scenarios identified in the *Traffic Impact Analysis*. This condition is provided solely for informational purposes and will not occur, since the Project will not be fully developed and occupied under Existing conditions. Table 5 shows the Existing conditions CNEL noise levels. The Existing exterior noise levels are expected to range from up to 79 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7 shows the Conservative Project Buildout conditions will range from 53.2 to 79.2 dBA CNEL. Table 12 shows that the Conservative Project Buildout conditions off-site traffic noise level impacts will exceed noise level increase thresholds along 138 segments. Based on the significance criteria for off-site traffic noise, land uses adjacent to these study area roadway segments would experience a significant noise level increases due to the Project-related traffic as compared to the existing traffic noise levels.

### **EXISTING TO REDUCED PROJECT TRAFFIC NOISE LEVEL INCREASES**

An analysis of existing traffic noise levels plus traffic noise generated by the Reduced Project Alternative has been included in this report to fully analyze all the traffic scenarios identified in the *Traffic Impact Analysis*. This condition is provided solely for informational purposes and will not occur, since the Project will not be fully developed and occupied under Existing conditions. Table 5 shows the Existing conditions CNEL noise levels. The Existing exterior noise levels are expected to range from up to 79.0 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 9 shows the Reduced Project Alternative conditions will range from 53.2 to 79.1 dBA CNEL. Table 13 shows that the Reduced Project Alternative conditions off-site traffic noise level impacts will exceed noise level increase thresholds along 124 segments. Based on the significance criteria for off-site traffic noise, land uses adjacent to these study area roadway segments would experience a significant noise level increases due to the Project-related traffic as compared to the existing traffic noise levels.

### **CUMULATIVE CONSERVATIVE TRAFFIC NOISE LEVEL INCREASES**

An analysis of cumulative traffic noise levels generated by the Conservative Project has been included in this report to fully analyze all the traffic scenarios identified in the *Traffic Impact Analysis*. Table 5 shows the Existing without Project conditions CNEL noise levels. The Existing

without Project exterior noise levels are expected to range from up to 79.0 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 8 shows the Cumulative Conservative conditions will range from 53.2 to 79.2 dBA CNEL. Table 14 shows that under the Cumulative Conservative conditions off-site traffic noise level impacts will exceed noise level increase thresholds along 147 segments. Based on the significance criteria for off-site traffic noise, land uses adjacent to these study area roadway segments would experience a significant cumulative noise level increases due to the Project-related traffic as compared to the existing traffic noise levels.

### **CUMULATIVE REDUCED PROJECT TRAFFIC NOISE LEVEL INCREASES**

An analysis of cumulative traffic noise levels generated by the Reduced Project Alternative has been included in this report to fully analyze all the traffic scenarios identified in the *Traffic Impact Analysis*. This condition is provided solely for informational purposes and will not occur, since the Project will not be fully developed and occupied under Existing conditions. Table 5 shows the Existing conditions CNEL noise levels. The Existing exterior noise levels are expected to range from up to 74.3 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 9 shows the Cumulative Conservative conditions will range from 53.2 to 79.1 dBA CNEL. Table 15 shows that under the Cumulative Conservative plus Reduced Project Alternative conditions off-site traffic noise level impacts will exceed noise level increase thresholds along 129 segments. Based on the significance criteria for off-site traffic noise, land uses adjacent to these study area roadway segments would experience a significant noise level increases due to the Project-related traffic as compared to the existing traffic noise levels.

### **CUMULATIVE REDUCED PROJECT TRAFFIC NOISE LEVEL INCREASES OVER CURRENT GENERAL PLAN**

An analysis of cumulative traffic noise levels generated by the Conservative Plan versus the Current General Plan has been included in this report to fully analyze all the traffic scenarios identified in the *Traffic Impact Analysis*. Table 6 shows the Current General Plan conditions CNEL noise levels. The Current General Plan exterior noise levels are expected to range from 53.5 to 79.1 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Except along Ada Street which would not exist. Table 8 shows the Cumulative Conservative conditions will range from 53.2 to 79.2 dBA CNEL. Table 16 shows that under the Cumulative Conservative conditions off-site traffic noise level impacts will exceed noise level increase thresholds along 16 segments not accounted for in the previous General Plan. Based on the significance criteria for off-site traffic noise, land uses adjacent to these study area roadway segments would experience a significant noise level increases due to the Project-related traffic as compared to the existing traffic noise levels.

### **CUMULATIVE REDUCED PROJECT TRAFFIC NOISE LEVEL INCREASES OVER CURRENT GENERAL PLAN**

An analysis of cumulative traffic noise levels generated by the Reduced Project Alternative versus the Current General Plan has been included in this report to fully analyze all the traffic scenarios identified in the *Traffic Impact Analysis*. Table 6 shows the Current General Plan conditions CNEL noise levels. The Current General Plan exterior noise levels are expected to range from 53.5 to



79.1 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Except along Ada Street which would not exist. Table 10 shows the Reduced Project Alternative conditions will range from 53.2 to 79.1 dBA CNEL. Table 17 shows that under the Reduced Project Alternative conditions off-site traffic noise level impacts will exceed noise level increase thresholds along 9 segments not accounted for in the previous General Plan. Based on the significance criteria for off-site traffic noise, land uses adjacent to these study area roadway segments would experience a significant noise level increases due to the Project-related traffic as compared to the existing traffic noise levels.

**ATTACHMENT A**  
**NOISE TABLES**

Table 1

Table 1: Off-Site Roadway Parameters

ID	Roadway	Segment	Classification <sup>1</sup>	Centerline Distance to Receiving Land Use (Feet) <sup>2</sup>	Vehicle Speed (mph)
1	Ada	Barranca Parway to Marine Way	Commuter	38'	40
2	Ada	Alton Parkway to Barranca Parkway	Primary	63'	40
3	Alton Parkway	Enterprise to I-5 NB Off-Ramp	Major	84'	50
4	Alton Parkway	I-5 NB Off-Ramp to Technology Drive West	Major	80'	50
5	Alton Parkway	East Yale Loop to Jeffrey Road	Primary	63'	50
6	Alton Parkway	Gateway Boulevard to Enterprise	Major	84'	50
7	Alton Parkway	Jeffrey Road to Royal Oak	Primary	63'	50
8	Alton Parkway	Daimler Street to Red Hill Avenue	Primary	63'	50
9	Alton Parkway	Culver Drive to West Yale Loop	Primary	63'	50
10	Alton Parkway	West Yale Loop to Lake Road	Primary	63'	50
11	Alton Parkway	Technology Drive West to Ada	Major	80'	50
12	Alton Parkway	Creek Road to East Yale Loop	Primary	63'	50
13	Alton Parkway	Red Hill Avenue to Von Karman Avenue	Primary	63'	50
14	Alton Parkway	Lake Road to Creek Road	Primary	63'	50
15	Alton Parkway	Telemetry to Banting	Primary	63'	50
16	Alton Parkway	Irvine Boulevard to Commercentre	Major	84'	50
17	Alton Parkway	Jenner to Telemetry	Primary	63'	50
18	Alton Parkway	Irvine Center Drive to Gateway Boulevard	Major	84'	50
19	Alton Parkway	Sand Canyon Avenue to Hospital	Primary	60'	50
20	Alton Parkway	Laguna Canyon Road to Jenner	Primary	63'	50
21	Alton Parkway	Technology Drive East to Barranca Pkwy/Muirlands Blvd	Major	84'	50
22	Alton Parkway	Royal Oak to Valley Oak Drive	Primary	63'	50
23	Alton Parkway	Banting to Pacifica	Primary	63'	50
24	Alton Parkway	Barranca Pkwy/Muirlands Blvd to Jeronimo Road	Major	84'	50
25	Alton Parkway	Ada to Technology Drive East	Major	84'	50

Table 1

26	Alton Parkway	Von Karman Avenue to Jamboree Road	Primary	63'	50
27	Alton Parkway	Jeronimo Road to Hughes	Major	84'	50
28	Alton Parkway	Hughes to Morgan	Major	84'	50
29	Alton Parkway	Morgan to Toledo Way	Major	84'	50
30	Alton Parkway	San Marino to Culver Drive	Major	84'	50
31	Alton Parkway	Jamboree Road to Murphy Avenue	Major	84'	50
32	Alton Parkway	Hospital to Laguna Canyon Road	Primary	60'	50
33	Alton Parkway	Valley Oak Drive to Sand Canyon Avenue	Primary	60'	50
34	Alton Parkway	Murphy Avenue to Harvard Avenue	Major	84'	50
35	Alton Parkway	Foster to Irvine Boulevard	Major	84'	50
36	Alton Parkway	Fairbanks to Foster	Major	84'	50
37	Alton Parkway	Toledo Way to Berteza	Major	84'	50
38	Alton Parkway	Pacifica to Meridian	Primary	60'	50
39	Alton Parkway	Berteza to Fairbanks	Major	84'	50
40	Alton Parkway	Meridian to Irvine Center Drive	Major	84'	50
41	Alton Parkway	Paseo Westpark to San Marino	Major	84'	50
42	Alton Parkway	Harvard Avenue to Paseo Westpark	Major	84'	50
43	Astor	Lynx to Fairbanks	Commuter	38'	30
44	Astor	Cadence to Lynx	Commuter	38'	30
45	Bake Parkway	I-5 NB Off-Ramp to Rockfield Boulevard	Major	100'	50
46	Bake Parkway	Muirlands Boulevard to Jeronimo Road	Major	84'	50
47	Bake Parkway	Rockfield Boulevard to Muirlands Boulevard	Major	100'	50
48	Bake Parkway	Jeronimo Road to Toledo Way	Major	84'	50
49	Bake Parkway	Toledo Way to Cromwell	Major	84'	50
50	Bake Parkway	Cromwell to Irvine Boulevard	Major	84'	50
51	Bake Parkway	Research Drive to I-5 SB Off-Ramp	Major	84'	50
52	Bake Parkway	Irvine Center Drive to Research Drive	Major	84'	50
53	Bake Parkway	Lake Forest Drive to Irvine Center Drive	Major	84'	50
54	Banting	Alton Parkway to Barranca Parkway	Primary	63'	35
55	Barranca Parkway	Pacifica to Irvine Center Drive	Primary	63'	55
56	Barranca Parkway	Banting to Pacifica	Primary	63'	55

Table 1

57	Barranca Parkway	I-5 HOV Ramp to Technology Drive West	Primary	63'	55
58	Barranca Parkway	Technology Drive West to Ada	Primary	63'	55
59	Barranca Parkway	Irvine Center Drive to I-5 HOV Ramp	Primary	63'	55
60	Barranca Parkway	Culver Drive to West Yale Loop	Primary	63'	55
61	Barranca Parkway	East Yale Loop to Jeffrey Road	Primary	63'	55
62	Barranca Parkway	West Yale Loop to Lake Road	Primary	63'	55
63	Barranca Parkway	Ada to Alton Parkway	Primary	63'	55
64	Barranca Parkway	Lake Road to Creek Road	Primary	63'	55
65	Barranca Parkway	Red Hill Avenue to Armstrong Avenue	Major	100'	55
66	Barranca Parkway	Discovery/Herchel to Banting	Primary	63'	55
67	Barranca Parkway	Lyon to East Yale Loop	Primary	63'	55
68	Barranca Parkway	Creek Road to Lyon	Primary	63'	55
69	Barranca Parkway	Von Karman Avenue to Jamboree Road	Major	80'	55
70	Barranca Parkway	Sand Canyon Avenue to Laguna Canyon Road	Primary	63'	55
71	Barranca Parkway	Armstrong Avenue to Von Karman Avenue	Major	80'	55
72	Barranca Parkway	Valley Oak Drive to Sand Canyon Avenue	Primary	63'	55
73	Barranca Parkway	Jamboree Road to Construction Circle	Major	84'	55
74	Barranca Parkway	Santa Rosa to Culver Drive	Major	84'	55
75	Barranca Parkway	FedEx to Discovery/Herchel	Primary	63'	55
76	Barranca Parkway	Jeffrey Road to Valley Oak Drive	Primary	63'	55
77	Barranca Parkway	Laguna Canyon Road to FedEx	Primary	63'	55
78	Barranca Parkway	Pullman Street to Red Hill Avenue	Major	100'	55
79	Barranca Parkway	Construction Circle to Fire Station	Major	84'	55
80	Barranca Parkway	Fire Station to Harvard Avenue	Major	84'	55
81	Barranca Parkway	Paseo Westpark to Santa Rosa	Major	84'	55
82	Barranca Parkway	Harvard Avenue to Paseo Westpark	Major	84'	55
83	Bay Tree	Trabuco Road to Roosevelt	Primary	63'	35
84	Beacon	Ridge Valley to Benchmark	Commuter	38'	30
85	Benchmark (LN Street)	Ridge Valley (O Street) to Bosque	Commuter	38'	30
86	Bison Avenue	SR-73 NB Off-Ramp to California Avenue	Primary	63'	45
87	Bonita Canyon Drive	MacArthur Boulevard to SR-73	Primary	75'	50

Table 1

88	Bonita Canyon Drive	Turtle Ridge to Shady Canyon Drive	Primary	75'	50
89	Bonita Canyon Drive	Newport Coast Drive to Turtle Ridge	Primary	75'	50
90	Bonita Canyon Drive	SR-73 NB Off-Ramp to Newport Coast Drive	Primary	75'	50
91	Bosque	Cadence to Great Park Boulevard	Commuter	38'	30
92	Bosque	Irvine Boulevard to Benchmark (LN Street)	Commuter	38'	30
93	Bosque	Benchmark to Cadence	Commuter	38'	30
94	Bosque	Great Park Boulevard to Beacon	Commuter	38'	30
95	Bosque	Beacon to S 5th Street	Commuter	38'	30
96	Bryan Avenue	Jamboree Road to Market Place	Primary	63'	45
97	Bryan Avenue	Market Place to El Camino Real	Primary	63'	45
98	Bryan Avenue	Rubicon to Culver Drive	Primary	63'	45
99	Bryan Avenue	El Camino Real to Rubicon	Primary	63'	45
100	Bryan Avenue	Eastwood to Jeffrey Road	Primary	63'	45
101	Bryan Avenue	Westwood to Yale Avenue	Primary	63'	45
102	Bryan Avenue	Culver Drive to Westwood	Primary	63'	45
103	Bryan Avenue	Yale Avenue to Eastwood	Primary	63'	45
104	Cadence	Pusan to Chinon	Commuter	38'	40
105	Cadence	Bosque to Pusan	Commuter	38'	40
106	Cadence	Ridge Valley (O Street) to Bosque	Commuter	38'	40
107	Cadence	Chinon to Merit	Commuter	38'	40
108	Cadence	Merit to Astor	Commuter	38'	40
109	California Avenue	University Drive to Academy Way	Primary	63'	40
110	California Avenue	Campus Drive to Harvard Avenue	Primary	63'	40
111	California Avenue	Theory to Bison Avenue	Primary	63'	40
112	Campus Drive	Carlson Avenue to University Drive	Commuter	50'	50
113	Campus Drive	University Drive to Bridge Road	Primary	63'	50
114	Campus Drive	Jamboree Road to Carlson Avenue	Primary	63'	50
115	Campus Drive	Stanford Court to Berkeley Avenue	Primary	63'	50
116	Campus Drive	California Avenue to Culver Drive	Primary	63'	50
117	Campus Drive	Berkeley Avenue to Cornell	Primary	63'	50
118	Campus Drive	Martin to Von Karman Avenue	Primary	63'	50

Table 1

119	Campus Drive	Culver Drive to Paseo Montoya (Turtle Rock Drive)	Primary	63'	50
120	Campus Drive	Von Karman Avenue to Teller Avenue	Primary	63'	50
121	Campus Drive	MacArthur Boulevard to Martin	Primary	63'	50
122	Campus Drive	Teller Avenue to Jamboree Road	Primary	63'	50
123	Carlson Avenue	Michelson Drive to Campus Drive	Primary	63'	50
124	Chinon	Irvine Boulevard to Cadence	Commuter	38'	25
125	Creek Road	Alton Parkway to Barranca Parkway	Primary	63'	25
126	Culver Drive	Michelson Drive to I-405 SB Off-Ramp	Major	84'	55
127	Culver Drive	I-405 SB Off-Ramp to I-405 NB Off Ramp	Major	84'	55
128	Culver Drive	I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)	Major	84'	55
129	Culver Drive	Scottsdale Drive to I-5 SB Off- Ramp	Major	84'	55
130	Culver Drive	I-405 NB Off-Ramp to San Leandro	Major	84'	55
131	Culver Drive	San Leandro to Main Street	Major	84'	55
132	Culver Drive	Harvard Avenue to University Drive	Major	84'	55
133	Culver Drive	Trabuco Road to Farwell Avenue	Major	80'	55
134	Culver Drive	Alton Parkway to Barranca Parkway	Major	84'	55
135	Culver Drive	Main Street to Alton Parkway	Major	84'	55
136	Culver Drive	Warner Avenue to Irvine Center Drive	Major	84'	55
137	Culver Drive	Walnut Avenue to Scottsdale Dive	Major	84'	55
138	Culver Drive	Barranca Parkway to Warner Avenue	Major	84'	55
139	Culver Drive	Shady Canyon Drive to Palo Verde	Primary	63'	55
140	Culver Drive	Deerfield Avenue to Walnut Avenue	Major	84'	55
141	Culver Drive	Sandburg Way to Michelson Drive	Major	84'	55
142	Culver Drive	Irvine Center Drive to Deerfield Avenue	Major	84'	55
143	Culver Drive	Palo Verde to Campus Drive	Primary	63'	55
144	Culver Drive	University Drive to Sandburg Way	Major	84'	55
145	Culver Drive	Farwell Avenue to Bryan Avenue	Major	80'	55
146	Culver Drive	Campus Drive to High School	Major	84'	55
147	Culver Drive	High School to Harvard Avenue	Major	84'	55
148	Culver Drive	Bryan Avenue to Florence	Major	84'	55
149	Culver Drive	Portola Parkway to Settlers	Primary	63'	55

Table 1

150	Culver Drive	Florence to Irvine Boulevard	Major	84'	55
151	Culver Drive	Irvine Boulevard to Viewpark	Major	84'	55
152	Culver Drive	Viewpark to Meadowood	Major	84'	55
153	Culver Drive	Settlers to Furrow	Primary	63'	55
154	Culver Drive	Meadowood to Portola Parkway	Major	84'	55
155	Discovery Drive	Irvine Center Drive to Laguna Canyon Road	Primary	63'	40
156	Discovery Drive	Waterworks Way to Irvine Center Drive	Primary	63'	40
157	East Yale Loop	Alton Parkway to Witherspoon	Primary	63'	40
158	East Yale Loop	Osborn Street to Barranca Parkway	Primary	63'	40
159	East Yale Loop	Yale Avenue to Springbrook South	Primary	63'	40
160	East Yale Loop	Springbrook North to Alton Parkway	Primary	63'	40
161	East Yale Loop	Woodspring to Yale Avenue	Primary	63'	40
162	East Yale Loop	Barranca Parkway to Eastshore	Primary	63'	40
163	Eastwood	Bryan Avenue to Monticello	Commuter	38'	35
164	Eastwood	Columbus to Bryan Avenue	Commuter	38'	35
165	El Camino Real	Jamboree Road to Alliance (SR-261 Bridge)	Primary	63'	40
166	El Camino Real North	El Camino Real to Bryan Avenue	Primary	63'	40
167	Fairbanks	Alton Parkway to Astor	Commuter	38'	40
168	Fairbanks	Irvine Boulevard to Alton Parkway	Commuter	38'	40
169	Fairchild Road	MacArthur Boulevard to Jamboree Road	Primary	63'	45
170	Gateway Boulevard	Alton Parkway to Irvine Center Drive	Primary	63'	30
171	Gateway Boulevard	Spectrum Center Drive (Fortune Drive) to Alton Parkway	Primary	63'	30
172	Gateway Boulevard	Irvine Center Drive to Meridian	Primary	63'	30
173	Great Park Boulevard	Sand Canyon to Ridge Valley	Primary	60'	50
174	Great Park Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	Primary	63'	50
175	Great Park Boulevard (EB)	Bosque to Skyhawk	Commuter	38'	50
176	Great Park Boulevard (WB)	Bosque to Skyhawk	Commuter	38'	50
177	Harvard Avenue	University Drive to Michelson Drive	Commuter	38'	45
178	Harvard Avenue	Michelson Drive to Coronado	Primary	63'	45
179	Harvard Avenue	San Marino to Alton Parkway	Primary	63'	45
180	Harvard Avenue	Coronado to Main Street	Primary	63'	45



Table 1

181	Harvard Avenue	San Carlo to San Marino	Primary	63'	45
182	Harvard Avenue	Main Street to San Carlo	Primary	63'	45
183	Harvard Avenue	Alton Parkway to San Leon	Primary	63'	45
184	Harvard Avenue	San Juan to Barranca Parkway	Primary	63'	45
185	Harvard Avenue	San Leon to San Juan	Primary	63'	45
186	Harvard Avenue	Irvine Center Drive to Deerfield Avenue	Primary	63'	45
187	Harvard Avenue	Deerfield Avenue to Poplar Street	Primary	63'	45
188	Harvard Avenue	Barranca Parkway to Warner Avenue	Primary	63'	45
189	Harvard Avenue	Bridge Road to University Drive	Primary	63'	45
190	Harvard Avenue	Paseo Westpark to Irvine Center Drive	Primary	63'	45
191	Harvard Avenue	Poplar Street to Walnut Avenue	Commuter	50'	45
192	Harvard Avenue	California Avenue to Berkeley Avenue	Primary	63'	45
193	Harvard Avenue	Culver Drive to California Avenue	Primary	63'	45
194	Harvard Avenue	Berkeley to Bridge Road	Primary	63'	45
195	Harvard Avenue	Warner Avenue to Paseo Westpark	Primary	63'	45
196	Hicks Canyon Drive	Delamesa to Yale Avenue	Commuter	50'	35
197	Hornet (5th St)	Ridge Valley (O Street) to Bosque	Commuter	38'	25
198	Hubble	Irvine Center Drive to Bunsen	Commuter	38'	25
199	Irvine Boulevard	SR-133 NB Off- Ramp to Ridge Valley (O Street)	Major	84'	55
200	Irvine Boulevard	SR-133 SB Off-Ramp to SR-133 NB Off-Ramp	Major	84'	55
201	Irvine Boulevard	Sand Canyon to SR-133 SB Off-Ramp	Major	80'	55
202	Irvine Boulevard	Merit to Alton	Major	84'	55
203	Irvine Boulevard	Journey to Sand Canyon Avenue	Major	84'	55
204	Irvine Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	Major	84'	55
205	Irvine Boulevard	Pusan Way to Chinon (B Street)	Major	84'	55
206	Irvine Boulevard	Palo Lado to Yale Avenue	Major	84'	55
207	Irvine Boulevard	Culver Drive to Palo Lado	Major	84'	55
208	Irvine Boulevard	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	Major	84'	55
209	Irvine Boulevard	Old Myford Road to Market Place	Major	84'	55
210	Irvine Boulevard	Bosque (LY Street) to Modjeska	Major	84'	55
211	Irvine Boulevard	Jamboree Road to Old Myford Road	Major	84'	55

Table 1

212	Irvine Boulevard	Market Place to SR-261 SB Off-Ramp	Major	84'	55
213	Irvine Boulevard	Jeffrey Road to Groveland	Major	84'	55
214	Irvine Boulevard	Bake Parkway to Lake Forest Drive	Major	84'	55
215	Irvine Boulevard	Independence Way (The Groves)/The Groves to Jeffrey Road	Major	84'	55
216	Irvine Boulevard	Chinon (B Street) to Merit	Major	84'	55
217	Irvine Boulevard	SR-261 NB Off-Ramp to Central Park	Major	84'	55
218	Irvine Boulevard	Pueblo Norte to Independence Way (The Groves)/ Parkwood	Major	84'	55
219	Irvine Boulevard	Yale Avenue to Pueblo Norte	Major	84'	55
220	Irvine Boulevard	Modjeska to Pusan Way	Major	84'	55
221	Irvine Boulevard	Central Park Avenue to Culver Drive	Major	84'	55
222	Irvine Boulevard	Parker to Bake Parkway	Major	84'	55
223	Irvine Boulevard	Alton Parkway to Fairbanks	Major	84'	55
224	Irvine Center Drive	Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp	Major	80'	50
225	Irvine Center Drive	Orange Tree to Valley Oak Drive	Major	84'	50
226	Irvine Center Drive	I-405 SB Off-Ramp to Research	Major	80'	50
227	Irvine Center Drive	Irvine Valley College to Orange Tree	Major	84'	50
228	Irvine Center Drive	Fontaine Avenue to Jeffrey Road	Major	84'	50
229	Irvine Center Drive	Culver Drive to Deerwood	Major	84'	50
230	Irvine Center Drive	Deerwood to Yale Avenue	Major	84'	50
231	Irvine Center Drive	Yale Avenue to Fontaine Avenue	Major	84'	50
232	Irvine Center Drive	Jeffrey Road to Irvine Valley College	Major	84'	50
233	Irvine Center Drive	Alton Parkway to Spectrum	Major	84'	50
234	Irvine Center Drive	Spectrum to Pacifica	Major	84'	50
235	Irvine Center Drive	Hearthstone to Culver Drive	Major	84'	50
236	Irvine Center Drive	Charter to Barranca Parkway	Major	84'	50
237	Irvine Center Drive	Jamboree Road to Harvard Avenue	Major	84'	50
238	Irvine Center Drive	Pacifica to Entertainment (Enterprise/Fortune)	Major	84'	50
239	Irvine Center Drive	Valley Oak Drive to Sand Canyon Avenue	Major	84'	50
240	Irvine Center Drive	Harvard Avenue to Hearthstone	Major	84'	50
241	Irvine Center Drive	Research to Hubble	Major	84'	50
242	Irvine Center Drive	Barranca Parkway to Gateway Boulevard	Major	84'	50

Table 1

243	Irvine Center Drive	Bake Parkway to Muller	Major	84'	50
244	Irvine Center Drive	Discovery to Charter	Major	84'	50
245	Irvine Center Drive	Hubble to Bake Parkway	Major	84'	50
246	Irvine Center Drive	Muller to Tesla	Major	84'	50
247	Irvine Center Drive	Sand Canyon Avenue to Odyssey	Major	84'	50
248	Irvine Center Drive	Tesla to Scientific Way	Major	84'	50
249	Irvine Center Drive	Scientific Way to Lake Forest Drive	Major	84'	50
250	Irvine Center Drive	Gateway Boulevard to Alton Parkway	Major	84'	50
251	Irvine Center Drive	Laguna Canyon Road to Discovery	Major	84'	50
252	Irvine Center Drive	Odyssey to Laguna Canyon Road	Major	84'	50
253	Irvine Center Drive (Edinger)	Redhill Avenue to Jamboree Road	Major	84'	50
254	Jamboree Road	I-5 SB Off-Ramp to I-5 NB Off-Ramp	Major	84'	55
255	Jamboree Road	I-405 SB Off-Ramp to I-405 NB Off Ramp	Major	80'	55
256	Jamboree Road	Walnut Avenue to Michelle Drive	Major	84'	55
257	Jamboree Road	I-405 NB Off-Ramp to Main Street	Major	100'	55
258	Jamboree Road	Michelle Drive to I-5 SB Off-Ramp	Major	84'	55
259	Jamboree Road	Main Street to Kelvin Avenue	Major	100'	55
260	Jamboree Road	Michelson Drive to I-405 SB Off-Ramp	Major	110'	55
261	Jamboree Road	Kelvin Avenue to McGaw Avenue	Major	100'	55
262	Jamboree Road	McGaw Avenue to Alton Parkway	Major	100'	55
263	Jamboree Road	Birch Street to Campus Drive	Major	84'	55
264	Jamboree Road	Dupont Drive to Michelson Drive	Major	80'	55
265	Jamboree Road	Alton Parkway to Beckman	Major	100'	55
266	Jamboree Road	Fairchild Road to Birch Street	Major	80'	55
267	Jamboree Road	Beckman to Barranca Parkway	Major	100'	55
268	Jamboree Road	I-5 NB Off-Ramp to El Camino Real	Major	100'	55
269	Jamboree Road	Campus Drive to Dupont Drive	Major	80'	55
270	Jamboree Road	El Camino Real to West Drive	Major	100'	55
271	Jamboree Road	West Drive to Bryan Avenue	Major	100'	55
272	Jamboree Road	Bryan Avenue to Irvine Boulevard	Major	100'	55
273	Jamboree Road	Koll Center to Fairchild Road	Major	80'	55

Table 1

274	Jamboree Road	MacArthur Boulevard to Koll Center	Major	80'	55
275	Jamboree Road	Irvine Boulevard to Portola Parkway	Major	84'	55
276	Jamboree Road	Warner Avenue to Edinger Avenue	Expressway	64'	55
277	Jamboree Road	Barranca Parkway to Warner Avenue	Expressway	64'	55
278	Jamboree Road	Edinger Avenue to Walnut Avenue	Expressway	64'	55
279	Jeffrey Road	Walnut Avenue to I-5 NB Off-Ramp	Major	84'	45
280	Jeffrey Road	I-5 NB Off-Ramp to Roosevelt	Major	80'	45
281	Jeffrey Road	Poplar (Meadows) to Walnut Avenue	Major	84'	45
282	Jeffrey Road	Alton Parkway to Barranca Parkway	Major	84'	45
283	Jeffrey Road	Irvine Center Drive to Poplar (Meadows)	Major	84'	45
284	Jeffrey Road	I-405 NB Off-Ramp to Quail Creek	Major	84'	45
285	Jeffrey Road	Barranca Parkway to Irvine Valley College	Major	84'	45
286	Jeffrey Road	Quail Creek to Alton Parkway	Major	84'	45
287	Jeffrey Road	Irvine Valley College to Irvine Center Drive	Major	84'	45
288	Jeffrey Road	Trabuco Road to Hideaway	Major	84'	45
289	Jeffrey Road	Hideaway to Bryan Avenue	Major	84'	45
290	Jeffrey Road	Roosevelt to Grove	Major	80'	45
291	Jeffrey Road	Grove to Trabuco Road	Major	80'	45
292	Jeffrey Road	Bryan Avenue to Irvine Boulevard	Major	84'	45
293	Jeffrey Road	Encore to Portola Parkway	Major	84'	45
294	Jeffrey Road	Irvine Boulevard to Encore	Major	84'	45
295	Jeronimo Road	Goodyear to Bake Parkway	Primary	63'	45
296	Jeronimo Road	Alton Parkway to Goodyear	Primary	63'	45
297	Laguna Canyon Road	Old Laguna Canyon Road to Lake Forest Drive	Major	84'	55
298	Laguna Canyon Road	Laguna Canyon Freeway to Quail Hill Parkway	Primary	63'	55
299	Laguna Canyon Road	Discovery to Sand Canyon Avenue	Primary	63'	55
300	Laguna Canyon Road	I-405 Overcrossing to Pasteur	Commuter	50'	50
301	Laguna Canyon Road	Irvine Center Drive to Discovery	Primary	63'	55
302	Laguna Canyon Road	Quail Hill Parkway to I-405 Overcrossing	Commuter	50'	50
303	Laguna Canyon Road	Pasteur to Alton Parkway	Primary	63'	55
304	Laguna Canyon Road	Waterworks to Irvine Center Drive	Primary	63'	55

Table 1

305	Laguna Canyon Road	Alton Parkway to Barranca Parkway	Primary	63'	55
306	Laguna Canyon Road	Barranca Parkway to Waterworks	Primary	63'	55
307	Lake Forest Drive	Hidden Canyon to Laguna Canyon Road	Primary	63'	50
308	Lake Forest Drive	Bake Parkway to Hidden Canyon (Romano)	Primary	63'	50
309	Lake Forest Drive	Tesla to Bake Parkway	Major	84'	50
310	Lake Road	Alton Parkway to Barranca Parkway	Commuter	50'	25
311	Lynx	Irvine Boulevard to Astor	Commuter	38'	25
312	MacArthur Boulevard	I-405 SB Off-Ramp to Michelson Drive	Major	100'	60
313	MacArthur Boulevard	Main Street to I-405 NB Off-Ramp	Major	100'	60
314	MacArthur Boulevard	I-405 NB Off-Ramp and I-405 SB Off-Ramp	Major	100'	60
315	MacArthur Boulevard	Jamboree Road to Fairchild Road	Major	84'	45
316	MacArthur Boulevard	Fairchild Road to University Drive	Major	84'	45
317	MacArthur Boulevard	Fitch to Red Hill Avenue	Major	80'	45
318	MacArthur Boulevard	Michelson Drive to Douglas	Major	100'	45
319	MacArthur Boulevard	Douglas to Campus Drive	Major	100'	45
320	MacArthur Boulevard	Skypark to Main Street	Major	80'	45
321	MacArthur Boulevard	Redhill Avenue to Skypark	Major	84'	45
322	MacArthur Boulevard	Birch Street to Jamboree Road	Major	84'	45
323	MacArthur Boulevard	Campus Drive to Birch Street	Major	100'	45
324	Main Street	Gillette Avenue to Von Karman Avenue	Major	80'	45
325	Main Street	MacArthur Boulevard to Mercantile	Major	80'	45
326	Main Street	Executive Park to MacArthur Boulevard	Major	84'	45
327	Main Street	Von Karman Avenue to Cartwright	Major	84'	45
328	Main Street	McDermott to Red Hill Avenue	Major	84'	45
329	Main Street	Red Hill Avenue to Executive Circle	Major	84'	45
330	Main Street	Jamboree Road to Union	Major	84'	45
331	Main Street	Culver Drive to West Yale Loop	Primary	63'	45
332	Main Street	Siglo to Jamboree Road	Major	84'	45
333	Main Street	Veneto to Harvard Avenue	Major	84'	45
334	Main Street	Paseo Westpark to Culver Drive	Primary	63'	45
335	Main Street	Harvard Avenue to San Mateo	Primary	63'	45

Table 1

336	Marine Way	Sand Canyon Avenue to Ridge Valley (O Street)	Commuter	50'	40
337	Marine Way	Alton Parkway to Bake Parkway	Primary	63'	40
338	Marine Way	Lynx to Barranca Parkway	Primary	63'	40
339	Marine Way	County Access to Treble	Primary	63'	40
340	Marine Way	Ridge Valley (O Street) to Skyhawk	Primary	63'	40
341	Marine Way	Skyhawk to County Access	Primary	63'	40
342	Marine Way	Barranca Parkway to Alton Parkway	Primary	63'	40
343	Marine Way	Treble to Lynx	Primary	63'	40
344	McGaw Avenue	Von Karman Avenue to Jamboree Road	Primary	63'	35
345	McGaw Avenue	Red Hill Avenue to Von Karman Avenue	Primary	63'	35
346	McGaw Avenue	Daimler to Red Hill Avenue	Primary	63'	35
347	McGaw Avenue	Jamboree Road to Murphy Avenue	Primary	63'	35
348	Meadowood	Culver Drive to Canyonwood	Primary	63'	25
349	Meridian	Spectrum to Alton Parkway	Primary	63'	30
350	Meridian	Alton Parkway to Gateway Boulevard	Primary	63'	30
351	Merit	Irvine Boulevard to Cadence	Commuter	38'	25
352	Michelson Drive	Riparian to Harvard Avenue	Primary	63'	40
353	Michelson Drive	Almond Tree Lane to Yale Avenue	Commuter	38'	40
354	Michelson Drive	Von Karman Avenue to Obsidian	Primary	63'	40
355	Michelson Drive	Parkside to Culver Drive	Primary	63'	40
356	Michelson Drive	Gillman to Seton/Sandburg Way	Commuter	38'	40
357	Michelson Drive	Carlson to Prince	Primary	75'	40
358	Michelson Drive	MacArthur Boulevard to Dupont Drive	Primary	63'	40
359	Michelson Drive	Harvard Avenue to Parkside	Primary	63'	40
360	Michelson Drive	Bixby to Von Karman Avenue	Primary	63'	40
361	Michelson Drive	Jamboree Road to Carlson	Primary	60'	40
362	Michelson Drive	Teller to Jamboree Road	Primary	60'	40
363	Michelson Drive	Jordan East to University Drive	Secondary	30'	40
364	Michelson Drive	Culver Drive to Angell	Primary	40'	40
365	Modjeska (A Street)	Portola Springs to Irvine Boulevard	Commuter	30'	45
366	Modjeska (A Street)	South of Irvine Boulevard	Commuter	38'	45

Table 1

367	Muirlands Boulevard	Bake Parkway to City Limits	Primary	63'	45
368	Muirlands Boulevard	Alton Parkway to Sterling	Primary	63'	45
369	Muirlands Boulevard	Wrigley to Bake Parkway	Primary	63'	45
370	Newport Coast Drive	SR-73 NB Off-Ramp to Turtle Ridge	Primary	63'	40
371	Newport Coast Drive	Turtle Crest to Bonita Canyon Drive	Primary	63'	40
372	Nightmist	Sand Canyon Avenue to Tulip (Road C)	Primary	63'	30
373	Northwood	Yale Avenue to Savannah	Commuter	38'	35
374	Northwood	Goldrush to Yale Avenue	Commuter	38'	35
375	Oak Canyon Drive	Valley Oak Drive to Sand Canyon Avenue	Commuter	38'	45
376	Pacifica	Gateway to Barranca Parkway	Primary	63'	40
377	Pacifica	Alton Parkway to Gateway	Primary	63'	40
378	Pacifica	Irvine Center Drive to Fortune Drive (Spectrum Center Drive)	Primary	63'	40
379	Pacifica	Meridian to Alton Parkway	Primary	63'	40
380	Park Place	Christamon South to Yale Avenue	Primary	63'	30
381	Portola Parkway	Bee Canyon Access Road to Sand Canyon Avenue	Primary	63'	55
382	Portola Parkway	Jeffrey Road to Bee Canyon Access Road	Primary	63'	55
383	Portola Parkway	Arrowhead to Ridge Valley Parkway	Primary	63'	55
384	Portola Parkway	Sand Canyon Avenue to Arrowhead	Primary	63'	55
385	Portola Parkway	Portola Springs to SR-241 SB Off-Ramp	Primary	63'	55
386	Portola Parkway	Gatepark to Culver Drive	Major	84'	55
387	Portola Parkway	ETC-6 (SR-261) NB Off-Ramp to Gatepark	Major	84'	55
388	Portola Parkway	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	Major	84'	55
389	Portola Parkway	Jamboree Road to Bellevue	Major	84'	55
390	Portola Parkway	Bellevue to ETC-6 (SR-261) SB Off-Ramp	Major	84'	55
391	Portola Parkway	Yale Avenue to Jeffrey Road	Major	84'	55
392	Portola Parkway	Culver Drive to Yale Avenue	Major	84'	55
393	Portola Parkway	Silverado to Portola Springs	Primary	63'	55
394	Pusan	Irvine Boulevard to Cadence	Commuter	38'	25
395	Quail Hill Parkway	Shady Canyon Drive to Passage	Primary	63'	45
396	Quail Hill Parkway	East Knollcrest to Laguna Canyon Road	Primary	63'	45
397	Quassar Drive (Spectrum)	Irvine Center Drive to Spectrum Center Drive (Fortune)	Primary	40'	25

Table 1

398	Red Hill Avenue	MacArthur Boulevard to McGaw Avenue	Major	84'	50
399	Red Hill Avenue	I-405 Over Crossing to Main Street	Primary	63'	50
400	Red Hill Avenue	Alton Parkway to Deere Avenue	Major	84'	50
401	Red Hill Avenue	McGaw Avenue to Alton Parkway	Major	84'	50
402	Red Hill Avenue	Deere Avenue to Barranca Parkway	Major	84'	50
403	Red Hill Avenue	Skypark East to MacArthur Boulevard	Primary	60'	50
404	Red Hill Avenue	Main Street to Skypark East	Primary	60'	50
405	Research Drive	Hubble to Bake Parkway	Primary	63'	45
406	Research Drive	Scientific to Lake Forest Drive	Primary	63'	45
407	Research Drive	Bake Parkway to Muller	Primary	63'	45
408	Research Drive	Irvine Center Drive to Bunsen	Primary	63'	45
409	Ridge Valley (O Street)	Irvine Boulevard to Trabuco Road (Great Park Boulevard)	Primary	63'	45
410	Ridge Valley (O Street)	Portola Parkway to Irvine Boulevard	Primary	63'	45
411	Ridge Valley (O Street)	Trabuco Road (Great Park Boulevard) to Marine Way	Primary	63'	45
412	Ridge Valley (O Street)	Ranchland to Portola Parkway	Commuter	38'	45
413	Ridgeline Drive	Concordia East to University Drive	Secondary	40'	35
414	Ridgeline Drive	Turtle Rock Drive to San Simeon	Secondary	40'	35
415	Rockfield Avenue	Whatney to McLaren	Primary	63'	45
416	Rockfield Avenue	Bake Parkway to Whatney	Primary	63'	45
417	Rockfield Avenue	Thomas to Bake Parkway	Primary	63'	45
418	Roosevelt	Jeffrey Road to Vision	Primary	63'	40
419	Roosevelt	Yale Avenue to Van Buren	Commuter (Divided)	30'	40
420	Roosevelt	Vision to Bay Tree	Primary	63'	40
421	Roosevelt	Nimitz to Jeffrey Road	Primary	63'	40
422	Roosevelt	Tulip (Road C) to Sand Canyon Avenue	Primary	63'	40
423	Royal Oak	Alton Parkway to Eaglecreek	Commuter (Divided)	30'	35
424	Sand Canyon Avenue	Oak Canyon Drive to Burt Road	Major	84'	50
425	Sand Canyon Avenue	Irvine Center Drive to Oak Canyon Drive	Major	84'	50
426	Sand Canyon Avenue	I-405 NB Off-Ramp to Alton Parkway	Primary	60'	50
427	Sand Canyon Avenue	Burt Road to I-5 SB Off-Ramp	Major	80'	50
428	Sand Canyon Avenue	Marine to I-5 NB Off-Ramp	Major	100'	50



Table 1

429	Sand Canyon Avenue	Trabuco Road to Towngate	Major	84'	50
430	Sand Canyon Avenue	Barranca Parkway to Waterworks	Major	84'	50
431	Sand Canyon Avenue	I-5 SB Off-Ramp to Marine	Major	100'	50
432	Sand Canyon Avenue	Hospital to Barranca Parkway	Major	84'	50
433	Sand Canyon Avenue	Nightmist to Roosevelt	Major	100'	50
434	Sand Canyon Avenue	I-405 SB Off-Ramp to I-405 NB Off-Ramp	Primary	60'	50
435	Sand Canyon Avenue	I-5 NB Off-Ramp to Nightmist	Major	100'	50
436	Sand Canyon Avenue	Towngate to Irvine Boulevard	Major	84'	50
437	Sand Canyon Avenue	Waterworks to Irvine Center Drive	Major	84'	50
438	Sand Canyon Avenue	Irvine Boulevard to Portola Parkway	Primary	63'	50
439	Sand Canyon Avenue	Roosevelt to Trabuco Road	Major	100'	50
440	Sand Canyon Avenue	Alton Parkway to Hospital	Major	80'	50
441	Sand Canyon/Shady Canyon	Quail Hill Parkway to I-405 SB Ramps	Primary	60'	50
442	Scientific Way	Irvine Center Drive to Wald	Primary	63'	35
443	Shady Canyon Drive	Culver Drive/Bonita Canyon Drive to Cloverfield	Commuter	38'	50
444	Shady Canyon Drive	Bommer Canyon Road to Sunnyhill	Commuter	50'	50
445	Skyhawk	Great Park Boulevard to Marine Way	Primary	63'	25
446	Southwood	Yale Avenue to Colt	Commuter	38'	35
447	Southwood	Challenger to Yale Avenue	Commuter	38'	35
448	Spectrum Center Drive (Fortune Drive)	Pacifica to Quassar Drive (Spectrum )	Primary	63'	30
449	Spectrum Center Drive (Fortune Drive)	Quassar Drive (Spectrum ) to Gatewayb	Primary	63'	30
450	Sunnyhill	Shady Canyon Drive to Turtle Rock Drive	Primary	63'	25
451	Technology Drive	Barranca Parkway to Alton Parkway	Primary	63'	45
452	Technology Drive	Old Laguna Canyon Road to I-5/SR-133 Undercrossing	Primary	63'	45
453	Technology Drive	I-5/SR-133 to Barranca Parkway	Primary	63'	45
454	Technology Drive	Ada to Alton Parkway	Primary	63'	45
455	Toledo Way	Bake Parkway to City Limits	Primary	63'	50
456	Toledo Way	Goodyear to Bake Parkway	Primary	63'	50
457	Toledo Way	Alton Parkway to Parker	Primary	63'	50
458	Trabuco Road	Keystone to Sand Canyon Avenue	Primary	63'	45
459	Trabuco Road	Jeffrey Road to Keystone	Primary	63'	45

Table 1

460	Trabuco Road	Culver Drive to I-5 NB Off-Ramp	Primary	63'	45
461	Trabuco Road	Monroe to Yale Avenue	Primary	63'	45
462	Trabuco Road	I-5 NB Off-Ramp to Monroe	Primary	63'	45
463	Trabuco Road	Yale Avenue to Remington	Primary	63'	45
464	Trabuco Road	Remington to Jeffrey Road	Primary	63'	45
465	Turtle Ridge Drive	Federation Way to Bonita Canyon	Primary	63'	45
466	Turtle Rock Drive	Ridgeline to Willowleaf	Commuter	38'	45
467	Turtle Rock Drive	Silkwood to Sunnyhill	Commuter	38'	45
468	Turtle Rock Drive	Canyon Park to Ridgeline	Commuter	38'	45
469	Turtle Rock Drive	Sunnyhill to Southernwood	Commuter	38'	45
470	Turtle Rock Drive	Campus Drive to Hillgate	Primary	63'	45
471	Turtle Rock Drive	Paseo Segovia to Campus Drive	Secondary	40'	45
472	University Drive	Golden Glow to Yale Avenue	Primary	63'	50
473	University Drive	Ridgeline to Michelson Drive	Primary	75'	50
474	University Drive	Culver Drive to Golden Glow	Primary	63'	50
475	University Drive	Yale Avenue to Ridgeline	Primary	63'	50
476	University Drive	Michelson Drive to I-405 SB Off-Ramp	Major	84'	50
477	University Drive	Mesa to Campus Drive	Primary	60'	50
478	University Drive	MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	Primary	60'	50
479	University Drive	California Avenue to Mesa	Primary	60'	50
480	University Drive	Campus Drive to Harvard Avenue	Major	84'	50
481	University Drive	SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	Major	50'	50
482	University Drive	SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps	Major	84'	50
483	University Drive	San Joaquin to Culver Drive	Major	84'	50
484	University Drive	Harvard Avenue to San Joaquin	Major	84'	50
485	Valley Oak Drive	Hawkcreek to Barranca Parkway	Primary	63'	50
486	Valley Oak Drive	Irvine Center Drive to Oak Canyon Drive	Commuter	50'	50
487	Valley Oak Drive	Barranca Parkway to Irvine Center Drive	Primary	63'	50
488	Valley Oak Drive	Alton Parkway to Hawkcreek	Primary	63'	50
489	Von Karman Avenue	Marriott to Morse Avenue	Primary	63'	45
490	Von Karman Avenue	Michelson Drive to Quartz	Primary	63'	45

Table 1

491	Von Karman Avenue	McGaw Avenue to Alton Parkway	Primary	63'	45
492	Von Karman Avenue	Alton Parkway to Barranca Parkway	Primary	75'	45
493	Von Karman Avenue	Main Street to Anchor	Primary	63'	45
494	Von Karman Avenue	Anchor to McGaw Avenue	Primary	63'	45
495	Von Karman Avenue	Morse to Main Street	Primary	63'	45
496	Von Karman Avenue	Martin to Dupont Drive	Primary	63'	45
497	Von Karman Avenue	Campus Drive to Martin	Primary	63'	45
498	Von Karman Avenue	Dupont Drive to Michelson Drive	Primary	63'	45
499	Walnut Avenue	Jeffrey Road to I-5 SB Off-Ramp	Primary	63'	45
500	Walnut Avenue	Myford Road to Jamboree Road SB Off-Ramp	Primary	63'	45
501	Walnut Avenue	The Mall Street to Culver Drive	Primary	63'	45
502	Walnut Avenue	Harvard Avenue to The Mall Street	Primary	63'	45
503	Walnut Avenue	Franciscan Street to Ravenwood Street	Primary	63'	45
504	Walnut Avenue	Ravenwood Street to Yale Avenue	Primary	63'	45
505	Walnut Avenue	Culver Drive to Franciscan Street	Primary	63'	45
506	Walnut Avenue	Peters Canyon Road to Harvard Avenue	Major	84'	45
507	Walnut Avenue	Jamboree Road NB Off-Ramp to Peters Canyon Road	Major	84'	45
508	Walnut Avenue	Yale Avenue to Kazan Street	Primary	63'	45
509	Walnut Avenue	Wisteria to Jeffrey Road	Primary	63'	45
510	Warner Avenue	Jamboree Road SB Off-ramp to Construction North	Primary	63'	45
511	Warner Avenue	Construction North to Harvard Avenue	Primary	63'	45
512	Warner Avenue	Harvard Avenue to Paseo Westpark	Primary	63'	45
513	Warner Avenue	Santa Ynez to Culver Drive	Primary	63'	45
514	Warner Avenue	Culver Drive to West Yale Loop	Primary	63'	45
515	West Yale Loop	Alton Parkway to Blue Lake North	Primary	63'	40
516	West Yale Loop	Eagle Run to Main Street	Primary	63'	40
517	West Yale Loop	Thunder Run to Yale Avenue	Primary	63'	40
518	West Yale Loop	Main Street to Timber Run	Primary	63'	40
519	West Yale Loop	Yale Avenue to Shorebird	Primary	63'	40
520	West Yale Loop	Warner Avenue to Stonecreek South	Primary	63'	40
521	West Yale Loop	Barranca Parkway to Alton Parkway	Primary	63'	40

Table 1

522	West Yale Loop	Stonecreek North to Warner Avenue	Primary	63'	40
523	West Yale Loop	Birdsong to Barranca Parkway	Primary	63'	40
524	Westwood	Yorktown to Bryan Avenue	Commuter	38'	35
525	Westwood	Bryan Avenue to Leaf	Commuter	38'	35
526	Yale Avenue	Deerfield Avenue to Winvale Avenue	Commuter	38'	45
527	Yale Avenue	Hicks Canyon Drive to Meadowood	Commuter	38'	45
528	Yale Avenue	Walnut Avenue to Roosevelt	Secondary	40'	45
529	Yale Avenue	Roosevelt to Trabuco Road	Primary	63'	45
530	Yale Avenue	Irvine Center Drive to Deerfield Avenue	Primary	63'	45
531	Yale Avenue	West Yale Loop to Irvine Center Drive	Primary	63'	45
532	Yale Avenue	Winvale Avenue to Karen Ann Lane	Primary	63'	45
533	Yale Avenue	Karen Ann Lane to Walnut Avenue	Primary	63'	45
534	Yale Avenue	Trabuco Road to Southwood	Primary	63'	45
535	Yale Avenue	Southwood to Bryan Avenue	Primary	63'	45
536	Yale Avenue	Northwood to Irvine Boulevard	Primary	63'	45
537	Yale Avenue	Bryan Avenue to Monticello	Primary	63'	45
538	Yale Avenue	Irvine Boulevard to Park Place	Primary	63'	45
539	Yale Avenue	University Drive to Royce	Commuter	50'	45
540	Yale Court	Arborwood to Portola Parkway	Commuter	38'	25

<sup>1</sup> City of Irvine General Plan.

<sup>2</sup> Based upon the right-of-way distances for each roadway classification provided in the General Plan and Project Traffic Report.

Table 2

Table 2: Average Daily Traffic Volumes

ID	Roadway	Segment	Average Daily Traffic Volumes <sup>1</sup>					
			Existing	Current General Plan	Conservative	Cumulative Conservative	Preferred	Muulative Preferred
1	Ada	Barranca Parway to Marine Way	0	0	23,114	23,117	23,050	23,050
2	Ada	Alton Parkway to Barranca Parkway	4,000	19,232	31,726	31,720	31,443	31,284
3	Alton Parkway	Enterprise to I-5 NB Off-Ramp	42,200	56,884	81,472	81,648	76,615	76,734
4	Alton Parkway	I-5 NB Off-Ramp to Technology Drive West	45,900	60,594	86,184	86,442	80,851	80,974
5	Alton Parkway	East Yale Loop to Jeffrey Road	29,100	30,534	32,626	32,830	32,166	32,275
6	Alton Parkway	Gateway Boulevard to Enterprise	26,800	35,234	49,611	49,714	46,610	46,790
7	Alton Parkway	Jeffrey Road to Royal Oak	22,000	23,495	26,386	26,627	25,401	25,682
8	Alton Parkway	Daimler Street to Red Hill Avenue	5,000	23,780	25,087	25,127	24,851	24,892
9	Alton Parkway	Culver Drive to West Yale Loop	23,600	24,362	25,096	25,181	24,627	24,826
10	Alton Parkway	West Yale Loop to Lake Road	23,100	23,892	25,022	25,249	24,512	24,661
11	Alton Parkway	Technology Drive West to Ada	29,800	39,191	52,329	52,629	49,987	49,944
12	Alton Parkway	Creek Road to East Yale Loop	22,100	23,067	24,792	24,987	24,159	24,400
13	Alton Parkway	Red Hill Avenue to Von Karman Avenue	13,900	21,216	24,224	24,832	23,510	24,050
14	Alton Parkway	Lake Road to Creek Road	21,800	22,890	23,527	23,753	22,987	23,143
15	Alton Parkway	Telemetry to Banting	17,100	20,313	23,656	23,832	23,191	23,349
16	Alton Parkway	Irvine Boulevard to Commercentre	33,800	39,324	37,812	38,199	38,024	38,497
17	Alton Parkway	Jenner to Telemetry	17,000	20,130	23,298	23,455	22,846	22,981
18	Alton Parkway	Irvine Center Drive to Gateway Boulevard	22,900	30,165	41,786	42,235	39,281	39,393
19	Alton Parkway	Sand Canyon Avenue to Hospital	26,100	36,781	36,925	37,175	37,094	37,269
20	Alton Parkway	Laguna Canyon Road to Jenner	17,000	19,926	22,824	22,971	22,385	22,495
21	Alton Parkway	Technology Drive East to Barranca Pkwy/Muirlands Blvd	25,800	34,162	41,377	41,733	37,771	38,222
22	Alton Parkway	Royal Oak to Valley Oak Drive	18,800	20,001	21,871	22,072	21,298	21,595
23	Alton Parkway	Banting to Pacifica	14,800	18,390	21,569	21,772	21,046	21,170
24	Alton Parkway	Barranca Pkwy/Muirlands Blvd to Jeronimo Road	32,200	33,762	39,021	39,264	33,513	33,780
25	Alton Parkway	Ada to Technology Drive East	26,200	32,909	36,707	36,976	33,970	33,965
26	Alton Parkway	Von Karman Avenue to Jamboree Road	15,900	17,845	20,273	20,473	19,636	19,836
27	Alton Parkway	Jeronimo Road to Hughes	29,900	30,838	30,649	30,700	31,395	31,395
28	Alton Parkway	Hughes to Morgan	28,300	29,010	29,715	29,715	29,715	29,715
29	Alton Parkway	Morgan to Toledo Way	23,900	24,745	25,331	25,439	25,095	25,095
30	Alton Parkway	San Marino to Culver Drive	23,900	24,868	25,956	26,151	25,417	25,692

Table 2

31	Alton Parkway	Jamboree Road to Murphy Avenue	20,000	22,978	25,156	26,387	24,653	25,799
32	Alton Parkway	Hospital to Laguna Canyon Road	18,700	22,303	25,499	25,755	24,790	25,005
33	Alton Parkway	Valley Oak Drive to Sand Canyon Avenue	20,500	22,026	24,321	24,481	23,843	24,016
34	Alton Parkway	Murphy Avenue to Harvard Avenue	20,300	22,029	24,016	25,087	23,566	24,679
35	Alton Parkway	Foster to Irvine Boulevard	19,700	24,872	23,305	23,532	23,154	23,362
36	Alton Parkway	Fairbanks to Foster	17,800	23,257	22,341	22,575	21,916	22,132
37	Alton Parkway	Toledo Way to Bertea	20,800	21,840	21,840	21,840	21,840	21,840
38	Alton Parkway	Pacifica to Meridian	14,800	18,738	23,324	23,780	22,678	22,898
39	Alton Parkway	Bertea to Fairbanks	20,300	21,315	21,315	21,315	21,315	21,315
40	Alton Parkway	Meridian to Irvine Center Drive	14,400	17,783	21,018	21,241	20,601	20,652
41	Alton Parkway	Paseo Westpark to San Marino	19,400	19,914	21,047	21,248	20,504	20,780
42	Alton Parkway	Harvard Avenue to Paseo Westpark	15,500	16,294	18,516	19,161	17,861	18,451
43	Astor	Lynx to Fairbanks	2,200	19,138	19,799	20,000	19,393	19,506
44	Astor	Cadence to Lynx	0	15,633	14,995	15,144	14,767	14,820
45	Bake Parkway	I-5 NB Off-Ramp to Rockfield Boulevard	71,500	91,457	98,304	98,423	95,631	95,791
46	Bake Parkway	Muirlands Boulevard to Jeronimo Road	58,900	60,885	62,986	63,562	61,319	61,823
47	Bake Parkway	Rockfield Boulevard to Muirlands Boulevard	61,900	66,745	67,539	67,848	66,285	66,605
48	Bake Parkway	Jeronimo Road to Toledo Way	48,500	49,574	51,196	51,605	49,538	49,866
49	Bake Parkway	Toledo Way to Cromwell	44,900	45,682	46,627	46,916	45,757	46,021
50	Bake Parkway	Cromwell to Irvine Boulevard	43,400	45,725	45,084	45,418	45,473	45,675
51	Bake Parkway	Research Drive to I-5 SB Off-Ramp	22,100	26,918	28,944	29,328	28,172	28,545
52	Bake Parkway	Irvine Center Drive to Research Drive	8,000	9,085	9,673	10,154	9,545	9,944
53	Bake Parkway	Lake Forest Drive to Irvine Center Drive	4,900	6,286	6,866	7,404	6,811	7,379
54	Banting	Alton Parkway to Barranca Parkway	3,000	4,452	5,569	5,549	5,427	5,367
55	Barranca Parkway	Pacifica to Irvine Center Drive	19,100	24,831	36,132	36,249	34,247	34,481
56	Barranca Parkway	Banting to Pacifica	19,900	25,806	32,152	32,424	31,312	31,533
57	Barranca Parkway	I-5 HOV Ramp to Technology Drive West	16,200	20,598	33,565	33,665	31,030	31,208
58	Barranca Parkway	Technology Drive West to Ada	18,700	23,700	31,332	31,494	30,409	30,730
59	Barranca Parkway	Irvine Center Drive to I-5 HOV Ramp	14,300	20,207	30,796	30,886	28,916	29,070
60	Barranca Parkway	Culver Drive to West Yale Loop	26,400	26,675	28,434	28,530	27,904	28,213
61	Barranca Parkway	East Yale Loop to Jeffrey Road	24,700	25,229	28,062	28,336	27,289	27,535
62	Barranca Parkway	West Yale Loop to Lake Road	24,500	25,495	27,146	27,246	26,674	26,880
63	Barranca Parkway	Ada to Alton Parkway	17,800	28,456	27,638	27,756	26,859	27,022
64	Barranca Parkway	Lake Road to Creek Road	22,400	23,501	25,488	25,599	24,910	25,130
65	Barranca Parkway	Red Hill Avenue to Armstrong Avenue	35,300	44,978	48,793	49,503	47,771	48,369

Table 2

66	Barranca Parkway	Discovery/Herchel to Banting	15,900	21,685	24,618	24,817	24,148	24,373
67	Barranca Parkway	Lyon to East Yale Loop	21,300	21,895	24,159	24,364	23,579	23,735
68	Barranca Parkway	Creek Road to Lyon	20,900	21,564	23,764	23,971	23,163	23,344
69	Barranca Parkway	Von Karman Avenue to Jamboree Road	31,400	38,982	42,548	42,568	41,461	41,730
70	Barranca Parkway	Sand Canyon Avenue to Laguna Canyon Road	12,000	19,260	21,751	21,968	20,188	20,369
71	Barranca Parkway	Armstrong Avenue to Von Karman Avenue	35,200	36,440	39,468	40,050	38,551	39,026
72	Barranca Parkway	Valley Oak Drive to Sand Canyon Avenue	13,700	18,496	20,139	20,406	19,557	19,863
73	Barranca Parkway	Jamboree Road to Construction Circle	25,500	29,130	32,282	32,325	31,326	31,487
74	Barranca Parkway	Santa Rosa to Culver Drive	23,600	28,283	31,019	31,498	30,197	30,840
75	Barranca Parkway	FedEx to Discovery/Herchel	12,800	15,244	19,005	19,158	17,670	17,901
76	Barranca Parkway	Jeffrey Road to Valley Oak Drive	11,500	15,857	18,482	18,899	17,571	17,889
77	Barranca Parkway	Laguna Canyon Road to FedEx	12,700	14,848	18,440	18,600	17,200	17,450
78	Barranca Parkway	Pullman Street to Red Hill Avenue	30,500	36,153	38,000	37,853	37,452	37,245
79	Barranca Parkway	Construction Circle to Fire Station	21,600	25,175	28,462	28,571	27,431	27,622
80	Barranca Parkway	Fire Station to Harvard Avenue	21,600	25,175	28,462	28,571	27,431	27,622
81	Barranca Parkway	Paseo Westpark to Santa Rosa	21,000	25,294	28,055	28,602	27,241	27,925
82	Barranca Parkway	Harvard Avenue to Paseo Westpark	20,500	23,160	25,884	26,663	25,071	25,798
83	Bay Tree	Trabuco Road to Roosevelt	2,100	2,723	2,675	2,681	2,742	2,720
84	Beacon	Ridge Valley to Benchmark	0	3,119	3,586	3,641	3,509	3,587
85	Benchmark (LN Street)	Ridge Valley (O Street) to Bosque	0	1,829	1,728	1,729	1,745	1,743
86	Bison Avenue	SR-73 NB Off-Ramp to California Avenue	20,400	26,221	25,685	26,007	25,773	26,152
87	Bonita Canyon Drive	MacArthur Boulevard to SR-73	29,100	30,318	30,850	30,956	30,737	30,797
88	Bonita Canyon Drive	Turtle Ridge to Shady Canyon Drive	16,400	20,645	20,798	20,905	20,728	20,746
89	Bonita Canyon Drive	Newport Coast Drive to Turtle Ridge	16,400	18,987	19,217	19,301	19,103	19,113
90	Bonita Canyon Drive	SR-73 NB Off-Ramp to Newport Coast Drive	16,400	17,778	18,311	18,474	18,113	18,182
91	Bosque	Cadence to Great Park Boulevard	7,700	11,850	12,852	12,932	12,836	12,864
92	Bosque	Irvine Boulevard to Benchmark (LN Street)	3,600	7,686	8,905	8,882	8,601	8,621
93	Bosque	Benchmark to Cadence	3,600	7,750	8,135	8,107	7,908	7,923
94	Bosque	Great Park Boulevard to Beacon	0	1,880	1,844	1,843	1,828	1,837
95	Bosque	Beacon to S 5th Street	0	1,524	1,609	1,609	1,591	1,592
96	Bryan Avenue	Jamboree Road to Market Place	20,700	21,684	22,410	22,671	21,962	22,217
97	Bryan Avenue	Market Place to El Camino Real	20,700	21,735	21,846	21,480	21,600	21,675
98	Bryan Avenue	Rubicon to Culver Drive	20,700	21,735	21,397	21,726	21,545	21,708
99	Bryan Avenue	El Camino Real to Rubicon	20,700	21,735	21,246	21,533	21,404	21,532
100	Bryan Avenue	Eastwood to Jeffrey Road	10,600	11,981	14,512	14,724	13,773	14,067

Table 2

101	Bryan Avenue	Westwood to Yale Avenue	11,900	12,001	13,258	13,412	12,845	12,963
102	Bryan Avenue	Culver Drive to Westwood	11,900	12,292	13,038	13,139	12,666	12,769
103	Bryan Avenue	Yale Avenue to Eastwood	10,600	11,130	13,028	13,268	12,224	12,526
104	Cadence	Pusan to Chinon	5,500	4,989	7,071	7,074	6,990	7,014
105	Cadence	Bosque to Pusan	7,100	5,049	6,542	6,540	6,549	6,558
106	Cadence	Ridge Valley (O Street) to Bosque	3,500	4,822	4,909	4,864	4,745	4,749
107	Cadence	Chinon to Merit	3,500	1,575	3,298	3,333	3,194	3,233
108	Cadence	Merit to Astor	0	1,397	1,698	1,688	1,700	1,697
109	California Avenue	University Drive to Academy Way	10,000	15,529	15,758	20,000	15,819	19,919
110	California Avenue	Campus Drive to Harvard Avenue	7,800	9,756	9,868	9,868	9,927	9,803
111	California Avenue	Theory to Bison Avenue	7,600	9,438	9,160	9,414	9,277	9,378
112	Campus Drive	Carlson Avenue to University Drive	17,000	27,465	28,942	29,529	28,558	29,153
113	Campus Drive	University Drive to Bridge Road	22,200	31,499	32,687	32,395	32,269	31,999
114	Campus Drive	Jamboree Road to Carlson Avenue	17,000	28,851	30,504	31,090	30,078	30,629
115	Campus Drive	Stanford Court to Berkeley Avenue	22,200	27,338	27,642	27,465	27,506	27,357
116	Campus Drive	California Avenue to Culver Drive	16,500	26,438	26,572	26,506	26,527	26,405
117	Campus Drive	Berkeley Avenue to Cornell	16,500	21,044	21,468	21,170	21,299	21,031
118	Campus Drive	Martin to Von Karman Avenue	12,100	15,957	17,343	17,979	16,910	17,561
119	Campus Drive	Culver Drive to Paseo Montoya (Turtle Rock Drive)	15,100	15,713	16,048	16,071	15,918	15,896
120	Campus Drive	Von Karman Avenue to Teller Avenue	10,300	13,785	14,824	15,306	14,558	15,040
121	Campus Drive	MacArthur Boulevard to Martin	12,100	13,788	14,285	14,566	14,164	14,413
122	Campus Drive	Teller Avenue to Jamboree Road	10,300	11,365	12,126	12,374	11,947	12,202
123	Carlson Avenue	Michelson Drive to Campus Drive	6,000	13,044	13,241	13,352	13,196	13,323
124	Chinon	Irvine Boulevard to Cadence	2,700	4,025	4,470	4,475	4,756	4,756
125	Creek Road	Alton Parkway to Barranca Parkway	3,900	4,622	4,907	4,892	4,726	4,796
126	Culver Drive	Michelson Drive to I-405 SB Off-Ramp	53,900	58,147	61,300	61,019	61,011	60,961
127	Culver Drive	I-405 SB Off-Ramp to I-405 NB Off Ramp	53,900	60,031	59,960	59,692	59,757	59,836
128	Culver Drive	I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)	57,400	60,471	60,969	61,103	60,773	60,896
129	Culver Drive	Scottsdale Drive to I-5 SB Off- Ramp	57,400	60,310	59,474	59,478	59,917	59,899
130	Culver Drive	I-405 NB Off-Ramp to San Leandro	53,900	57,001	56,487	56,681	56,621	56,751
131	Culver Drive	San Leandro to Main Street	51,500	53,202	53,021	52,972	53,104	53,116
132	Culver Drive	Harvard Avenue to University Drive	46,300	52,683	53,377	53,363	53,257	53,212
133	Culver Drive	Trabuco Road to Farwell Avenue	57,400	61,294	59,213	59,139	59,765	59,466
134	Culver Drive	Alton Parkway to Barranca Parkway	47,600	51,629	51,504	51,467	51,477	51,527
135	Culver Drive	Main Street to Alton Parkway	46,400	50,144	49,818	50,023	50,071	50,100



Table 2

136	Culver Drive	Warner Avenue to Irvine Center Drive	45,500	48,921	48,908	49,242	48,906	49,101
137	Culver Drive	Walnut Avenue to Scottsdale Dive	44,800	48,508	47,641	47,556	48,151	48,057
138	Culver Drive	Barranca Parkway to Warner Avenue	44,700	47,184	47,548	47,883	47,408	47,820
139	Culver Drive	Shady Canyon Drive to Palo Verde	23,100	27,206	26,474	26,477	26,657	26,587
140	Culver Drive	Deerfield Avenue to Walnut Avenue	41,700	44,819	44,116	44,131	44,374	44,310
141	Culver Drive	Sandburg Way to Michelson Drive	38,000	43,901	44,200	44,162	44,140	44,084
142	Culver Drive	Irvine Center Drive to Deerfield Avenue	39,600	43,101	43,037	43,318	42,966	43,249
143	Culver Drive	Palo Verde to Campus Drive	23,100	24,255	24,255	24,255	24,255	24,255
144	Culver Drive	University Drive to Sandburg Way	34,900	40,605	40,878	40,821	40,840	40,762
145	Culver Drive	Farwell Avenue to Bryan Avenue	43,200	47,503	46,710	46,846	46,881	46,855
146	Culver Drive	Campus Drive to High School	35,900	40,178	39,825	40,099	39,865	40,109
147	Culver Drive	High School to Harvard Avenue	35,900	39,525	39,094	39,155	39,227	39,343
148	Culver Drive	Bryan Avenue to Florence	34,500	37,270	37,153	37,248	37,221	37,291
149	Culver Drive	Portola Parkway to Settlers	13,100	21,591	22,169	22,400	21,951	22,133
150	Culver Drive	Florence to Irvine Boulevard	33,600	36,440	36,281	36,395	36,398	36,478
151	Culver Drive	Irvine Boulevard to Viewpark	24,500	27,912	27,782	27,820	27,898	27,880
152	Culver Drive	Viewpark to Meadowood	24,500	27,661	26,857	26,773	27,143	27,007
153	Culver Drive	Settlers to Furrow	0	11,425	11,930	12,153	11,730	11,905
154	Culver Drive	Meadowood to Portola Parkway	16,700	19,435	19,384	19,447	19,462	19,491
155	Discovery Drive	Irvine Center Drive to Laguna Canyon Road	1,700	8,932	13,332	13,351	9,370	9,390
156	Discovery Drive	Waterworks Way to Irvine Center Drive	0	4,423	8,636	8,669	4,968	5,001
157	East Yale Loop	Alton Parkway to Witherspoon	10,900	12,625	13,590	13,632	13,294	13,347
158	East Yale Loop	Osborn Street to Barranca Parkway	10,200	11,855	12,938	12,986	12,601	12,680
159	East Yale Loop	Yale Avenue to Springbrook South	6,400	10,084	11,895	11,997	11,442	11,525
160	East Yale Loop	Springbrook North to Alton Parkway	6,400	8,140	8,574	8,626	8,475	8,506
161	East Yale Loop	Woodspring to Yale Avenue	6,400	6,731	7,199	7,261	7,005	7,059
162	East Yale Loop	Barranca Parkway to Eastshore	6,400	6,747	6,524	6,685	6,576	6,558
163	Eastwood	Bryan Avenue to Monticello	2,400	2,973	3,241	3,260	3,185	3,212
164	Eastwood	Columbus to Bryan Avenue	1,900	2,023	2,011	2,057	1,983	2,017
165	El Camino Real	Jamboree Road to Alliance (SR-261 Bridge)	18,500	18,775	19,398	19,548	19,240	19,372
166	El Camino Real North	El Camino Real to Bryan Avenue	6,200	6,510	6,553	6,459	6,482	6,466
167	Fairbanks	Alton Parkway to Astor	2,600	18,025	18,614	18,795	18,127	18,297
168	Fairbanks	Irvine Boulevard to Alton Parkway	0	9,256	9,466	9,507	9,449	9,527
169	Fairchild Road	MacArthur Boulevard to Jamboree Road	6,000	7,074	7,081	7,094	7,131	7,094
170	Gateway Boulevard	Alton Parkway to Irvine Center Drive	3,800	14,311	17,010	16,817	15,949	15,953

Table 2

171	Gateway Boulevard	Spectrum Center Drive (Fortune Drive) to Alton Parkway	6,600	10,892	12,678	12,537	12,089	12,135
172	Gateway Boulevard	Irvine Center Drive to Meridian	3,600	5,160	6,270	6,264	6,154	6,204
173	Great Park Boulevard	Sand Canyon to Ridge Valley	18,000	41,232	45,507	45,662	44,334	44,530
174	Great Park Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	5,400	20,241	23,162	23,409	22,427	22,566
175	Great Park Boulevard (EB)	Bosque to Skyhawk	0	7,039	8,824	9,050	8,353	8,512
176	Great Park Boulevard (WB)	Bosque to Skyhawk	0	6,351	7,648	7,680	7,471	7,517
177	Harvard Avenue	University Drive to Michelson Drive	19,000	21,732	22,851	23,172	22,728	23,043
178	Harvard Avenue	Michelson Drive to Coronado	24,800	29,191	31,028	31,339	30,921	31,293
179	Harvard Avenue	San Marino to Alton Parkway	24,500	27,906	29,121	29,801	28,966	29,486
180	Harvard Avenue	Coronado to Main Street	24,000	28,017	28,811	29,155	28,783	29,124
181	Harvard Avenue	San Carlo to San Marino	24,500	27,164	28,438	29,022	28,293	28,700
182	Harvard Avenue	Main Street to San Carlo	24,000	26,657	27,916	28,489	27,778	28,170
183	Harvard Avenue	Alton Parkway to San Leon	20,000	21,000	21,000	20,284	21,000	20,344
184	Harvard Avenue	San Juan to Barranca Parkway	20,000	20,509	21,000	20,554	21,000	20,616
185	Harvard Avenue	San Leon to San Juan	19,200	20,160	20,160	20,160	20,160	20,160
186	Harvard Avenue	Irvine Center Drive to Deerfield Avenue	10,000	15,559	15,757	15,703	15,465	15,471
187	Harvard Avenue	Deerfield Avenue to Poplar Street	10,000	15,473	15,478	15,436	15,200	15,226
188	Harvard Avenue	Barranca Parkway to Warner Avenue	16,300	17,075	17,135	17,252	17,010	17,230
189	Harvard Avenue	Bridge Road to University Drive	14,800	15,962	17,144	16,993	16,880	16,811
190	Harvard Avenue	Paseo Westpark to Irvine Center Drive	11,400	16,630	17,007	16,907	16,982	16,894
191	Harvard Avenue	Poplar Street to Walnut Avenue	8,600	13,344	13,653	13,736	13,278	13,424
192	Harvard Avenue	California Avenue to Berkeley Avenue	11,400	14,000	15,232	15,147	14,831	14,793
193	Harvard Avenue	Culver Drive to California Avenue	11,400	13,746	14,994	14,914	14,731	14,558
194	Harvard Avenue	Berkeley to Bridge Road	11,400	14,010	14,544	14,559	14,456	14,466
195	Harvard Avenue	Warner Avenue to Paseo Westpark	11,000	13,408	13,236	13,284	13,282	13,352
196	Hicks Canyon Drive	Delamesa to Yale Avenue	2,200	2,310	2,210	2,212	2,206	2,209
197	Hornet (5th St)	Ridge Valley (O Street) to Bosque	0	3,316	3,346	3,323	3,383	3,393
198	Hubble	Irvine Center Drive to Bunsen	2,100	2,224	2,322	2,420	2,333	2,425
199	Irvine Boulevard	SR-133 NB Off- Ramp to Ridge Valley (O Street)	40,100	42,105	41,249	41,517	42,105	42,105
200	Irvine Boulevard	SR-133 SB Off-Ramp to SR-133 NB Off-Ramp	39,100	41,055	40,804	41,000	41,055	40,173
201	Irvine Boulevard	Sand Canyon to SR-133 SB Off-Ramp	43,500	45,675	44,645	45,181	45,675	45,675
202	Irvine Boulevard	Merit to Alton	34,100	35,805	35,805	35,805	35,805	35,805
203	Irvine Boulevard	Journey to Sand Canyon Avenue	34,200	35,910	35,381	36,637	35,506	36,360
204	Irvine Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	30,700	32,235	32,010	32,240	32,235	31,486
205	Irvine Boulevard	Pusan Way to Chinon (B Street)	29,600	31,080	31,080	31,080	31,080	31,080

Table 2

206	Irvine Boulevard	Palo Lado to Yale Avenue	27,100	28,118	32,776	33,664	31,566	32,379
207	Irvine Boulevard	Culver Drive to Palo Lado	27,400	28,495	32,471	33,323	31,307	32,081
208	Irvine Boulevard	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	27,700	28,294	31,500	32,007	30,683	31,115
209	Irvine Boulevard	Old Myford Road to Market Place	26,500	27,891	31,742	32,352	30,767	31,303
210	Irvine Boulevard	Bosque (LY Street) to Modjeska	27,900	28,773	32,088	32,429	30,546	30,785
211	Irvine Boulevard	Jamboree Road to Old Myford Road	26,500	27,513	31,090	31,680	30,131	30,658
212	Irvine Boulevard	Market Place to SR-261 SB Off-Ramp	26,400	27,325	30,908	31,554	30,014	30,542
213	Irvine Boulevard	Jeffrey Road to Groveland	28,300	29,715	30,376	32,022	29,333	30,798
214	Irvine Boulevard	Bake Parkway to Lake Forest Drive	23,800	30,011	27,916	28,197	28,433	28,721
215	Irvine Boulevard	Independence Way (The Groves)/The Groves to Jeffrey Road	26,000	27,709	29,006	29,427	28,495	28,654
216	Irvine Boulevard	Chinon (B Street) to Merit	26,100	27,405	27,405	27,405	27,405	27,405
217	Irvine Boulevard	SR-261 NB Off-Ramp to Central Park	25,300	26,097	28,240	28,707	27,539	27,914
218	Irvine Boulevard	Pueblo Norte to Independence Way (The Groves)/ Parkwood	24,300	25,190	27,469	28,114	26,740	27,208
219	Irvine Boulevard	Yale Avenue to Pueblo Norte	24,300	25,057	27,285	27,924	26,562	27,027
220	Irvine Boulevard	Modjeska to Pusan Way	24,800	26,040	26,040	26,040	26,040	26,040
221	Irvine Boulevard	Central Park Avenue to Culver Drive	22,100	22,685	24,480	24,842	24,022	24,271
222	Irvine Boulevard	Parker to Bake Parkway	19,400	22,409	22,659	22,962	22,245	22,781
223	Irvine Boulevard	Alton Parkway to Fairbanks	17,100	17,955	17,955	17,955	17,955	17,955
224	Irvine Center Drive	Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp	38,500	51,275	52,889	53,953	51,614	52,865
225	Irvine Center Drive	Orange Tree to Valley Oak Drive	29,100	43,698	49,786	50,142	47,747	48,280
226	Irvine Center Drive	I-405 SB Off-Ramp to Research	35,200	46,454	47,340	48,675	46,681	48,133
227	Irvine Center Drive	Irvine Valley College to Orange Tree	29,100	42,382	48,817	49,177	46,642	47,178
228	Irvine Center Drive	Fontaine Avenue to Jeffrey Road	27,700	39,987	46,104	46,660	44,165	44,870
229	Irvine Center Drive	Culver Drive to Deerwood	29,400	39,661	45,624	45,919	43,788	44,248
230	Irvine Center Drive	Deerwood to Yale Avenue	28,700	39,150	45,180	45,516	43,331	43,804
231	Irvine Center Drive	Yale Avenue to Fontaine Avenue	27,100	38,813	45,578	46,236	43,453	44,189
232	Irvine Center Drive	Jeffrey Road to Irvine Valley College	29,100	40,074	44,489	44,688	42,819	43,078
233	Irvine Center Drive	Alton Parkway to Spectrum	24,400	34,648	42,406	42,966	39,703	40,201
234	Irvine Center Drive	Spectrum to Pacifica	24,500	33,982	41,920	42,370	39,224	39,643
235	Irvine Center Drive	Hearthstone to Culver Drive	26,000	36,389	39,524	39,645	38,396	38,654
236	Irvine Center Drive	Charter to Barranca Parkway	20,500	32,888	38,843	39,266	36,432	36,795
237	Irvine Center Drive	Jamboree Road to Harvard Avenue	29,400	33,538	35,809	35,938	35,050	35,164
238	Irvine Center Drive	Pacifica to Entertainment (Enterprise/Fortune)	25,500	33,656	36,722	37,251	35,060	35,691
239	Irvine Center Drive	Valley Oak Drive to Sand Canyon Avenue	20,200	31,525	36,773	37,095	35,045	35,398
240	Irvine Center Drive	Harvard Avenue to Hearthstone	26,000	31,072	33,946	34,007	32,966	33,081

Table 2

241	Irvine Center Drive	Research to Hubble	19,200	30,150	29,767	31,287	29,654	31,315
242	Irvine Center Drive	Barranca Parkway to Gateway Boulevard	15,500	27,369	32,213	32,542	30,054	30,428
243	Irvine Center Drive	Bake Parkway to Muller	19,200	31,012	29,382	30,258	29,430	30,410
244	Irvine Center Drive	Discovery to Charter	16,700	26,747	32,850	33,253	30,216	30,581
245	Irvine Center Drive	Hubble to Bake Parkway	18,900	29,424	27,974	28,520	27,897	28,602
246	Irvine Center Drive	Muller to Tesla	18,400	27,797	26,678	27,303	26,594	27,299
247	Irvine Center Drive	Sand Canyon Avenue to Odyssey	18,100	25,007	27,285	27,449	25,885	26,025
248	Irvine Center Drive	Tesla to Scientific Way	16,100	26,203	24,358	25,259	24,586	25,537
249	Irvine Center Drive	Scientific Way to Lake Forest Drive	16,400	24,631	23,241	24,211	23,463	24,377
250	Irvine Center Drive	Gateway Boulevard to Alton Parkway	14,700	21,437	23,879	24,509	22,763	23,257
251	Irvine Center Drive	Laguna Canyon Road to Discovery	15,000	20,659	24,024	24,356	22,810	23,090
252	Irvine Center Drive	Odyssey to Laguna Canyon Road	15,200	21,273	23,977	24,191	22,449	22,690
253	Irvine Center Drive (Edinger)	Redhill Avenue to Jamboree Road	28,800	37,743	39,543	40,036	38,705	39,103
254	Jamboree Road	I-5 SB Off-Ramp to I-5 NB Off-Ramp	66,500	69,825	69,825	69,825	69,825	69,825
255	Jamboree Road	I-405 SB Off-Ramp to I-405 NB Off Ramp	73,400	77,890	81,976	82,589	80,926	81,685
256	Jamboree Road	Walnut Avenue to Michelle Drive	55,000	59,833	60,442	60,520	60,211	60,362
257	Jamboree Road	I-405 NB Off-Ramp to Main Street	73,400	79,710	81,891	82,134	81,354	81,725
258	Jamboree Road	Michelle Drive to I-5 SB Off-Ramp	55,000	56,450	56,408	56,389	56,379	57,750
259	Jamboree Road	Main Street to Kelvin Avenue	61,200	67,444	70,975	71,714	70,210	70,902
260	Jamboree Road	Michelson Drive to I-405 SB Off-Ramp	74,300	84,006	88,495	88,960	86,971	87,488
261	Jamboree Road	Kelvin Avenue to McGaw Avenue	57,500	62,646	65,776	66,488	65,064	65,797
262	Jamboree Road	McGaw Avenue to Alton Parkway	56,700	61,804	64,955	65,760	64,320	65,261
263	Jamboree Road	Birch Street to Campus Drive	40,300	44,836	49,612	50,222	48,363	48,881
264	Jamboree Road	Dupont Drive to Michelson Drive	47,600	50,671	55,614	56,292	54,185	54,705
265	Jamboree Road	Alton Parkway to Beckman	53,900	56,746	59,192	60,116	58,506	59,551
266	Jamboree Road	Fairchild Road to Birch Street	37,500	46,728	50,815	51,524	49,498	50,091
267	Jamboree Road	Beckman to Barranca Parkway	51,700	53,974	54,823	55,530	54,535	55,555
268	Jamboree Road	I-5 NB Off-Ramp to El Camino Real	50,200	52,710	52,710	52,710	52,710	52,710
269	Jamboree Road	Campus Drive to Dupont Drive	40,200	42,224	46,420	47,220	45,590	46,225
270	Jamboree Road	El Camino Real to West Drive	50,200	52,735	51,138	50,741	51,446	51,075
271	Jamboree Road	West Drive to Bryan Avenue	50,200	52,526	51,091	50,973	51,319	51,212
272	Jamboree Road	Bryan Avenue to Irvine Boulevard	45,800	49,213	47,458	47,016	47,722	47,448
273	Jamboree Road	Koll Center to Fairchild Road	32,900	39,496	43,123	43,783	41,698	42,241
274	Jamboree Road	MacArthur Boulevard to Koll Center	34,300	39,695	42,776	43,209	41,222	41,473
275	Jamboree Road	Irvine Boulevard to Portola Parkway	24,500	29,887	29,015	28,920	29,193	29,128

Table 2

276	Jamboree Road	Warner Avenue to Edinger Avenue	83,900	85,506	87,509	87,609	87,026	87,248
277	Jamboree Road	Barranca Parkway to Warner Avenue	68,700	70,769	72,128	72,728	71,471	72,206
278	Jamboree Road	Edinger Avenue to Walnut Avenue	64,000	66,189	66,499	66,731	66,471	66,688
279	Jeffrey Road	Walnut Avenue to I-5 NB Off-Ramp	50,500	54,962	56,523	56,825	55,850	56,176
280	Jeffrey Road	I-5 NB Off-Ramp to Roosevelt	57,000	62,169	63,296	63,919	62,333	63,037
281	Jeffrey Road	Poplar (Meadows) to Walnut Avenue	44,600	49,562	50,868	51,048	50,514	50,683
282	Jeffrey Road	Alton Parkway to Barranca Parkway	44,200	46,090	50,717	50,925	49,193	49,443
283	Jeffrey Road	Irvine Center Drive to Poplar (Meadows)	42,900	47,470	48,682	48,837	48,338	48,484
284	Jeffrey Road	I-405 NB Off-Ramp to Quail Creek	44,400	45,688	50,815	51,159	48,513	49,021
285	Jeffrey Road	Barranca Parkway to Irvine Valley College	43,400	45,426	48,023	48,058	47,090	47,228
286	Jeffrey Road	Quail Creek to Alton Parkway	44,400	45,819	48,969	49,376	47,231	47,578
287	Jeffrey Road	Irvine Valley College to Irvine Center Drive	42,200	43,854	45,528	45,568	44,501	44,665
288	Jeffrey Road	Trabuco Road to Hideaway	35,700	38,135	37,721	38,141	37,737	38,113
289	Jeffrey Road	Hideaway to Bryan Avenue	35,700	38,018	37,668	38,123	37,660	38,065
290	Jeffrey Road	Roosevelt to Grove	37,200	40,456	41,046	41,043	40,485	40,531
291	Jeffrey Road	Grove to Trabuco Road	37,200	40,151	38,896	38,887	39,079	39,167
292	Jeffrey Road	Bryan Avenue to Irvine Boulevard	26,500	28,995	28,845	29,374	28,761	29,277
293	Jeffrey Road	Encore to Portola Parkway	10,400	16,559	15,420	14,548	15,646	14,766
294	Jeffrey Road	Irvine Boulevard to Encore	10,400	15,038	14,436	14,094	14,564	14,204
295	Jeronimo Road	Goodyear to Bake Parkway	7,700	8,433	8,085	8,085	8,085	7,959
296	Jeronimo Road	Alton Parkway to Goodyear	7,200	8,252	7,560	7,560	7,560	7,468
297	Laguna Canyon Road	Old Laguna Canyon Road to Lake Forest Drive	44,700	53,167	52,519	53,702	52,557	53,875
298	Laguna Canyon Road	Laguna Canyon Freeway to Quail Hill Parkway	10,000	16,794	16,624	16,770	16,659	16,794
299	Laguna Canyon Road	Discovery to Sand Canyon Avenue	5,100	10,943	15,112	15,177	13,807	13,867
300	Laguna Canyon Road	I-405 Overcrossing to Pasteur	5,500	8,635	8,544	8,634	8,507	8,576
301	Laguna Canyon Road	Irvine Center Drive to Discovery	3,900	9,104	13,381	13,313	9,537	9,516
302	Laguna Canyon Road	Quail Hill Parkway to I-405 Overcrossing	5,500	8,635	8,544	8,634	8,507	8,576
303	Laguna Canyon Road	Pasteur to Alton Parkway	6,000	8,294	8,491	8,608	8,352	8,455
304	Laguna Canyon Road	Waterworks to Irvine Center Drive	4,700	7,050	9,487	9,469	7,386	7,346
305	Laguna Canyon Road	Alton Parkway to Barranca Parkway	5,100	6,757	7,272	7,308	6,866	6,917
306	Laguna Canyon Road	Barranca Parkway to Waterworks	4,100	6,177	7,040	7,148	6,179	6,120
307	Lake Forest Drive	Hidden Canyon to Laguna Canyon Road	14,500	17,913	18,642	19,408	18,345	19,173
308	Lake Forest Drive	Bake Parkway to Hidden Canyon (Romano)	14,500	17,780	18,471	19,213	18,195	18,999
309	Lake Forest Drive	Tesla to Bake Parkway	10,700	13,227	13,734	14,514	13,505	14,318
310	Lake Road	Alton Parkway to Barranca Parkway	5,800	6,127	6,179	6,204	6,138	6,144

Table 2

311	Lynx	Irvine Boulevard to Astor	0	1,330	1,254	1,244	1,253	1,246
312	MacArthur Boulevard	I-405 SB Off-Ramp to Michelson Drive	51,800	57,170	61,860	62,587	60,659	61,683
313	MacArthur Boulevard	Main Street to I-405 NB Off-Ramp	50,300	58,639	60,715	61,233	60,198	60,713
314	MacArthur Boulevard	I-405 NB Off-Ramp and I-405 SB Off-Ramp	48,200	57,119	59,832	60,411	59,267	59,791
315	MacArthur Boulevard	Jamboree Road to Fairchild Road	37,900	39,795	39,795	39,795	39,795	39,795
316	MacArthur Boulevard	Fairchild Road to University Drive	37,900	38,766	39,349	39,243	39,738	39,408
317	MacArthur Boulevard	Fitch to Red Hill Avenue	40,900	41,798	42,207	42,124	41,993	41,553
318	MacArthur Boulevard	Michelson Drive to Douglas	36,200	40,849	45,005	46,388	43,680	45,212
319	MacArthur Boulevard	Douglas to Campus Drive	36,200	41,587	44,388	45,645	43,619	45,000
320	MacArthur Boulevard	Skypark to Main Street	29,800	33,703	33,157	33,482	33,051	33,180
321	MacArthur Boulevard	Redhill Avenue to Skypark	26,100	28,805	27,891	28,170	27,961	28,075
322	MacArthur Boulevard	Birch Street to Jamboree Road	18,300	19,634	20,778	21,485	20,454	21,177
323	MacArthur Boulevard	Campus Drive to Birch Street	19,400	22,000	23,178	24,205	22,933	23,909
324	Main Street	Gillette Avenue to Von Karman Avenue	32,500	38,628	45,614	46,084	44,129	44,818
325	Main Street	MacArthur Boulevard to Mercantile	32,500	36,531	39,827	40,229	39,170	39,493
326	Main Street	Executive Park to MacArthur Boulevard	24,000	26,869	28,554	28,777	28,179	28,337
327	Main Street	Von Karman Avenue to Cartwright	21,400	24,763	28,744	28,808	27,884	28,170
328	Main Street	McDermott to Red Hill Avenue	25,300	25,767	26,403	26,518	26,239	26,342
329	Main Street	Red Hill Avenue to Executive Circle	24,000	25,362	25,874	25,974	25,766	25,776
330	Main Street	Jamboree Road to Union	22,600	24,079	24,963	25,130	24,728	24,761
331	Main Street	Culver Drive to West Yale Loop	14,100	14,805	14,634	14,660	14,523	14,599
332	Main Street	Siglo to Jamboree Road	21,400	22,387	24,271	24,322	23,884	24,041
333	Main Street	Veneto to Harvard Avenue	22,600	23,730	23,292	23,421	23,172	23,207
334	Main Street	Paseo Westpark to Culver Drive	11,600	12,180	12,007	12,129	12,180	12,068
335	Main Street	Harvard Avenue to San Mateo	11,600	11,923	11,948	11,988	12,142	11,928
336	Marine Way	Sand Canyon Avenue to Ridge Valley (O Street)	14,400	38,752	40,895	40,977	40,411	40,541
337	Marine Way	Alton Parkway to Bake Parkway	0	29,934	33,007	33,132	31,689	31,983
338	Marine Way	Lynx to Barranca Parkway	0	32,584	32,066	32,174	32,229	32,277
339	Marine Way	County Access to Treble	3,200	12,788	26,373	26,495	25,917	26,072
340	Marine Way	Ridge Valley (O Street) to Skyhawk	5,900	21,357	25,442	25,478	24,715	24,784
341	Marine Way	Skyhawk to County Access	3,200	11,690	20,450	20,553	19,302	19,473
342	Marine Way	Barranca Parkway to Alton Parkway	700	15,956	17,902	17,922	17,824	17,909
343	Marine Way	Treble to Lynx	0	19,116	16,855	16,993	16,340	16,505
344	McGaw Avenue	Von Karman Avenue to Jamboree Road	8,600	11,998	14,522	14,638	13,868	13,966
345	McGaw Avenue	Red Hill Avenue to Von Karman Avenue	8,400	12,035	14,147	14,434	13,510	13,754

Table 2

346	McGaw Avenue	Daimler to Red Hill Avenue	6,500	9,107	9,147	9,107	9,063	9,179
347	McGaw Avenue	Jamboree Road to Murphy Avenue	3,000	4,320	4,734	4,648	4,424	4,528
348	Meadowood	Culver Drive to Canyonwood	10,400	10,920	10,920	10,668	10,920	10,920
349	Meridian	Spectrum to Alton Parkway	2,200	2,338	2,707	2,808	2,563	2,685
350	Meridian	Alton Parkway to Gateway Boulevard	1,700	1,950	2,238	2,259	2,184	2,205
351	Merit	Irvine Boulevard to Cadence	5,100	3,204	3,718	3,772	3,641	3,731
352	Michelson Drive	Riparian to Harvard Avenue	17,700	22,861	25,332	25,376	25,218	25,198
353	Michelson Drive	Almond Tree Lane to Yale Avenue	8,200	9,055	10,108	10,160	9,910	9,921
354	Michelson Drive	Von Karman Avenue to Obsidian	17,600	22,381	24,512	24,498	23,682	23,736
355	Michelson Drive	Parkside to Culver Drive	15,500	18,030	22,469	22,511	22,374	22,429
356	Michelson Drive	Gillman to Seton/Sandburg Way	8,200	8,623	9,393	9,500	9,165	9,208
357	Michelson Drive	Carlson to Prince	17,700	25,099	27,299	27,204	27,061	27,093
358	Michelson Drive	MacArthur Boulevard to Dupont Drive	17,600	18,637	21,065	21,112	20,323	20,337
359	Michelson Drive	Harvard Avenue to Parkside	15,500	18,101	18,016	18,076	17,916	18,003
360	Michelson Drive	Bixby to Von Karman Avenue	11,600	16,064	18,167	18,256	17,607	17,647
361	Michelson Drive	Jamboree Road to Carlson	17,700	24,519	25,554	25,363	25,486	25,364
362	Michelson Drive	Teller to Jamboree Road	20,700	24,548	25,444	25,464	25,530	25,600
363	Michelson Drive	Jordan East to University Drive	6,200	6,510	6,980	6,991	6,719	6,782
364	Michelson Drive	Culver Drive to Angell	8,200	8,600	8,905	8,947	8,757	8,789
365	Modjeska (A Street)	Portola Springs to Irvine Boulevard	10,800	13,585	13,698	13,789	13,725	13,817
366	Modjeska (A Street)	South of Irvine Boulevard	2,000	1,669	1,855	1,833	1,874	1,834
367	Muirlands Boulevard	Bake Parkway to City Limits	12,200	14,592	14,718	15,023	14,376	14,807
368	Muirlands Boulevard	Alton Parkway to Sterling	11,400	11,970	11,970	11,701	11,970	11,970
369	Muirlands Boulevard	Wrigley to Bake Parkway	11,400	11,711	11,970	11,970	11,970	11,970
370	Newport Coast Drive	SR-73 NB Off-Ramp to Turtle Ridge	14,500	17,431	17,293	17,365	17,333	17,310
371	Newport Coast Drive	Turtle Crest to Bonita Canyon Drive	11,800	12,390	12,138	12,158	12,101	12,122
372	Nightmist	Sand Canyon Avenue to Tulip (Road C)	9,000	12,094	11,314	11,178	11,630	11,501
373	Northwood	Yale Avenue to Savannah	4,500	4,646	4,780	4,798	4,715	4,741
374	Northwood	Goldrush to Yale Avenue	3,000	3,628	3,802	3,833	3,773	3,801
375	Oak Canyon Drive	Valley Oak Drive to Sand Canyon Avenue	6,000	7,939	13,369	13,331	12,082	12,109
376	Pacifica	Gateway to Barranca Parkway	8,100	10,905	12,617	12,784	12,406	12,565
377	Pacifica	Alton Parkway to Gateway	5,700	7,790	9,580	9,769	9,464	9,495
378	Pacifica	Irvine Center Drive to Fortune Drive (Spectrum Center Drive)	5,500	7,857	6,909	7,054	6,930	7,083
379	Pacifica	Meridian to Alton Parkway	2,400	3,742	4,572	4,576	4,476	4,479
380	Park Place	Christamon South to Yale Avenue	3,600	3,784	3,747	3,737	3,750	3,750

Table 2

381	Portola Parkway	Bee Canyon Access Road to Sand Canyon Avenue	17,900	22,658	24,951	25,814	24,011	24,775
382	Portola Parkway	Jeffrey Road to Bee Canyon Access Road	17,900	22,635	24,889	25,724	23,959	24,694
383	Portola Parkway	Arrowhead to Ridge Valley Parkway	15,300	22,644	23,410	23,934	23,161	23,621
384	Portola Parkway	Sand Canyon Avenue to Arrowhead	15,300	20,880	21,503	21,926	21,291	21,666
385	Portola Parkway	Portola Springs to SR-241 SB Off-Ramp	6,000	16,931	17,090	17,392	17,068	17,347
386	Portola Parkway	Gatepark to Culver Drive	22,700	26,146	29,312	30,092	28,306	29,181
387	Portola Parkway	ETC-6 (SR-261) NB Off-Ramp to Gatepark	22,700	26,024	28,911	29,669	27,985	28,743
388	Portola Parkway	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	22,700	25,264	28,023	28,810	27,082	27,901
389	Portola Parkway	Jamboree Road to Bellevue	22,700	24,960	27,703	28,532	26,830	27,621
390	Portola Parkway	Bellevue to ETC-6 (SR-261) SB Off-Ramp	22,700	24,770	27,438	28,239	26,584	27,354
391	Portola Parkway	Yale Avenue to Jeffrey Road	17,800	23,831	26,088	27,075	25,071	25,999
392	Portola Parkway	Culver Drive to Yale Avenue	17,800	21,489	22,869	23,470	22,276	22,874
393	Portola Parkway	Silverado to Portola Springs	7,600	11,969	12,134	12,381	12,067	12,310
394	Pusan	Irvine Boulevard to Cadence	1,500	2,434	2,468	2,449	2,470	2,449
395	Quail Hill Parkway	Shady Canyon Drive to Passage	15,200	15,960	15,648	15,772	15,448	15,541
396	Quail Hill Parkway	East Knollcrest to Laguna Canyon Road	8,500	10,254	9,734	9,762	9,917	9,900
397	Quassar Drive (Spectrum)	Irvine Center Drive to Spectrum Center Drive (Fortune)	1,800	1,991	2,026	2,051	1,981	1,994
398	Red Hill Avenue	MacArthur Boulevard to McGaw Avenue	38,200	41,924	44,982	45,998	44,189	45,131
399	Red Hill Avenue	I-405 Over Crossing to Main Street	19,700	20,812	22,560	22,980	22,062	22,478
400	Red Hill Avenue	Alton Parkway to Deere Avenue	28,000	30,843	31,869	32,372	31,427	32,238
401	Red Hill Avenue	McGaw Avenue to Alton Parkway	26,800	29,669	31,060	31,871	30,718	31,517
402	Red Hill Avenue	Deere Avenue to Barranca Parkway	26,700	29,582	29,932	30,440	29,672	30,497
403	Red Hill Avenue	Skypark East to MacArthur Boulevard	16,700	19,882	21,918	22,585	21,395	21,999
404	Red Hill Avenue	Main Street to Skypark East	14,600	17,274	18,979	19,603	18,423	18,933
405	Research Drive	Hubble to Bake Parkway	9,700	24,761	25,625	25,920	24,938	25,175
406	Research Drive	Scientific to Lake Forest Drive	10,100	15,994	15,298	16,713	15,327	16,919
407	Research Drive	Bake Parkway to Muller	11,600	12,604	12,951	13,395	12,774	13,241
408	Research Drive	Irvine Center Drive to Bunsen	8,600	9,824	10,459	10,553	10,214	10,299
409	Ridge Valley (O Street)	Irvine Boulevard to Trabuco Road (Great Park Boulevard)	9,900	15,535	15,025	14,991	14,874	14,983
410	Ridge Valley (O Street)	Portola Parkway to Irvine Boulevard	10,800	12,575	12,161	12,229	12,231	12,342
411	Ridge Valley (O Street)	Trabuco Road (Great Park Boulevard) to Marine Way	10,600	11,130	11,130	11,130	11,130	11,130
412	Ridge Valley (O Street)	Ranchland to Portola Parkway	900	935	930	931	936	935
413	Ridgeline Drive	Concordia East to University Drive	12,600	15,575	16,232	16,267	16,053	16,070
414	Ridgeline Drive	Turtle Rock Drive to San Simeon	12,600	14,257	15,110	15,191	14,883	14,923
415	Rockfield Avenue	Whatney to McLaren	12,000	15,880	16,500	16,792	16,154	16,541



Table 2

416	Rockfield Avenue	Bake Parkway to Whatney	5,000	6,694	7,559	7,636	7,259	7,372
417	Rockfield Avenue	Thomas to Bake Parkway	5,000	5,145	5,734	5,795	5,672	5,692
418	Roosevelt	Jeffrey Road to Vision	12,500	15,443	17,060	17,577	16,664	17,206
419	Roosevelt	Yale Avenue to Van Buren	8,500	8,812	9,191	9,343	8,969	9,058
420	Roosevelt	Vision to Bay Tree	10,500	14,654	16,183	16,893	15,775	16,387
421	Roosevelt	Nimitz to Jeffrey Road	12,500	14,187	14,507	14,604	14,499	14,608
422	Roosevelt	Tulip (Road C) to Sand Canyon Avenue	8,800	13,745	13,715	14,013	13,703	14,053
423	Royal Oak	Alton Parkway to Eaglecreek	4,600	4,830	4,830	4,830	4,830	4,830
424	Sand Canyon Avenue	Oak Canyon Drive to Burt Road	36,600	48,414	51,595	52,249	50,454	51,113
425	Sand Canyon Avenue	Irvine Center Drive to Oak Canyon Drive	35,800	45,483	49,313	50,129	49,167	50,013
426	Sand Canyon Avenue	I-405 NB Off-Ramp to Alton Parkway	36,600	44,364	46,506	46,785	45,532	45,922
427	Sand Canyon Avenue	Burt Road to I-5 SB Off-Ramp	37,500	51,493	53,826	54,479	53,029	53,622
428	Sand Canyon Avenue	Marine to I-5 NB Off-Ramp	38,800	59,568	60,722	62,427	60,688	62,433
429	Sand Canyon Avenue	Trabuco Road to Towngate	31,500	42,099	39,436	41,347	40,085	42,024
430	Sand Canyon Avenue	Barranca Parkway to Waterworks	26,100	36,308	39,030	39,517	38,043	38,582
431	Sand Canyon Avenue	I-5 SB Off-Ramp to Marine	38,800	49,577	50,537	51,956	50,509	51,961
432	Sand Canyon Avenue	Hospital to Barranca Parkway	26,800	34,191	37,782	38,333	35,931	36,289
433	Sand Canyon Avenue	Nightmist to Roosevelt	44,800	46,045	47,040	47,225	47,040	46,581
434	Sand Canyon Avenue	I-405 SB Off-Ramp to I-405 NB Off-Ramp	27,400	34,745	36,253	36,420	35,399	35,889
435	Sand Canyon Avenue	I-5 NB Off-Ramp to Nightmist	43,800	46,445	46,459	47,804	46,651	49,225
436	Sand Canyon Avenue	Towngate to Irvine Boulevard	26,908	35,972	34,028	36,276	34,490	36,746
437	Sand Canyon Avenue	Waterworks to Irvine Center Drive	26,100	31,409	33,123	33,662	33,082	33,598
438	Sand Canyon Avenue	Irvine Boulevard to Portola Parkway	13,600	18,121	17,682	23,085	17,874	23,306
439	Sand Canyon Avenue	Roosevelt to Trabuco Road	37,700	39,585	39,585	39,585	39,585	39,585
440	Sand Canyon Avenue	Alton Parkway to Hospital	26,800	31,835	34,402	34,877	32,774	33,129
441	Sand Canyon/Shady Canyon	Quail Hill Parkway to I-405 SB Ramps	21,700	22,794	23,990	24,017	23,802	23,970
442	Scientific Way	Irvine Center Drive to Wald	1,500	1,616	1,653	1,634	1,635	1,626
443	Shady Canyon Drive	Culver Drive/Bonita Canyon Drive to Cloverfield	8,100	8,410	9,409	9,541	9,123	9,242
7,727	Shady Canyon Drive	Bommer Canyon Road to Sunnyhill	7,000	7,350	8,049	8,202	7,752	7,888
445	Skyhawk	Great Park Boulevard to Marine Way	2,200	12,035	10,431	10,359	10,666	10,600
446	Southwood	Yale Avenue to Colt	3,000	3,003	3,054	3,070	3,031	3,052
447	Southwood	Challenger to Yale Avenue	2,600	2,867	2,909	2,909	2,798	2,844
448	Spectrum Center Drive (Fortune Drive)	Pacifica to Quassar Drive (Spectrum )	10,500	11,702	11,853	11,720	11,786	11,887
449	Spectrum Center Drive (Fortune Drive)	Quassar Drive (Spectrum ) to Gatewayb	11,900	13,210	13,277	13,355	13,116	13,271
450	Sunnyhill	Shady Canyon Drive to Turtle Rock Drive	5,600	5,827	6,807	6,895	6,602	6,698

Table 2

451	Technology Drive	Barranca Parkway to Alton Parkway	14,100	27,461	33,564	33,560	32,036	32,103
452	Technology Drive	Old Laguna Canyon Road to I-5/SR-133 Undercrossing	5,800	14,421	25,455	25,533	23,487	23,614
453	Technology Drive	I-5/SR-133 to Barranca Parkway	5,300	11,458	24,498	24,552	22,568	22,678
454	Technology Drive	Ada to Alton Parkway	1,700	2,747	6,550	6,603	5,528	5,697
455	Toledo Way	Bake Parkway to City Limits	7,600	8,101	7,798	7,876	7,905	8,035
456	Toledo Way	Goodyear to Bake Parkway	6,100	6,577	6,405	6,405	6,324	6,383
457	Toledo Way	Alton Parkway to Parker	5,300	6,118	5,994	6,030	5,838	5,879
458	Trabuco Road	Keystone to Sand Canyon Avenue	13,100	14,020	14,736	14,918	14,475	14,594
459	Trabuco Road	Jeffrey Road to Keystone	13,100	13,755	14,256	14,426	13,713	13,846
460	Trabuco Road	Culver Drive to I-5 NB Off-Ramp	12,000	12,898	13,483	13,569	13,214	13,275
461	Trabuco Road	Monroe to Yale Avenue	12,000	12,600	13,466	13,781	12,866	13,181
462	Trabuco Road	I-5 NB Off-Ramp to Monroe	12,000	12,600	13,135	13,404	12,616	12,860
463	Trabuco Road	Yale Avenue to Remington	10,500	11,025	12,278	12,594	11,616	11,949
464	Trabuco Road	Remington to Jeffrey Road	10,500	11,025	11,518	11,786	11,077	11,295
465	Turtle Ridge Drive	Federation Way to Bonita Canyon	0	21,210	20,930	20,959	21,017	20,977
466	Turtle Rock Drive	Ridgeline to Willowleaf	7,000	8,148	8,823	8,839	8,727	8,738
467	Turtle Rock Drive	Silkwood to Sunnyhill	7,200	7,856	8,720	8,790	8,572	8,638
468	Turtle Rock Drive	Canyon Park to Ridgeline	6,700	6,963	7,353	7,358	7,206	7,159
469	Turtle Rock Drive	Sunnyhill to Southernwood	3,500	3,609	3,658	3,664	3,588	3,587
470	Turtle Rock Drive	Campus Drive to Hillgate	6,700	7,089	7,260	7,303	7,125	7,106
471	Turtle Rock Drive	Paseo Segovia to Campus Drive	3,900	4,044	4,076	4,071	4,066	4,064
472	University Drive	Golden Glow to Yale Avenue	35,400	39,438	43,009	43,486	42,194	42,678
473	University Drive	Ridgeline to Michelson Drive	46,900	49,362	52,466	53,139	51,836	52,367
474	University Drive	Culver Drive to Golden Glow	34,500	38,353	41,770	42,225	41,000	41,441
475	University Drive	Yale Avenue to Ridgeline	34,200	35,343	37,097	37,727	36,567	36,983
476	University Drive	Michelson Drive to I-405 SB Off-Ramp	52,900	54,745	59,053	59,773	58,027	58,667
477	University Drive	Mesa to Campus Drive	34,000	42,065	45,247	46,258	44,446	45,486
478	University Drive	MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	34,000	42,129	44,232	46,885	43,634	46,290
479	University Drive	California Avenue to Mesa	34,000	40,950	44,280	45,113	43,321	44,330
480	University Drive	Campus Drive to Harvard Avenue	27,800	33,789	37,107	38,009	36,432	37,310
481	University Drive	SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	15,000	18,527	19,626	20,520	19,332	20,200
482	University Drive	SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps	26,000	31,273	32,890	34,513	32,489	34,047
483	University Drive	San Joaquin to Culver Drive	23,500	27,239	30,341	30,679	29,608	30,020
484	University Drive	Harvard Avenue to San Joaquin	23,500	27,126	30,225	30,550	29,483	29,892
485	Valley Oak Drive	Hawkcreek to Barranca Parkway	4,300	13,681	13,886	13,837	13,484	13,433

Table 2

486	Valley Oak Drive	Irvine Center Drive to Oak Canyon Drive	4,500	7,844	12,395	12,291	11,004	11,018
487	Valley Oak Drive	Barranca Parkway to Irvine Center Drive	4,200	8,042	11,075	11,266	10,125	10,317
488	Valley Oak Drive	Alton Parkway to Hawkcreek	5,100	6,753	6,689	6,590	6,517	6,501
489	Von Karman Avenue	Marriott to Morse Avenue	21,900	32,180	35,254	35,487	34,440	34,606
490	Von Karman Avenue	Michelson Drive to Quartz	21,300	30,568	34,068	34,303	33,121	33,326
491	Von Karman Avenue	McGaw Avenue to Alton Parkway	23,800	28,817	33,488	33,736	32,658	33,069
492	Von Karman Avenue	Alton Parkway to Barranca Parkway	26,200	35,462	41,190	41,710	40,666	41,216
493	Von Karman Avenue	Main Street to Anchor	23,100	27,652	32,693	33,066	31,991	32,464
494	Von Karman Avenue	Anchor to McGaw Avenue	23,100	27,101	31,540	31,904	30,891	31,313
495	Von Karman Avenue	Morse to Main Street	23,100	27,235	29,827	30,079	29,382	29,530
496	Von Karman Avenue	Martin to Dupont Drive	17,000	23,409	25,714	25,978	25,189	25,404
497	Von Karman Avenue	Campus Drive to Martin	17,000	23,065	25,190	25,324	24,686	24,957
498	Von Karman Avenue	Dupont Drive to Michelson Drive	17,000	23,141	25,012	25,306	24,689	24,911
499	Walnut Avenue	Jeffrey Road to I-5 SB Off-Ramp	21,600	31,658	34,800	34,873	34,097	34,208
500	Walnut Avenue	Myford Road to Jamboree Road SB Off-Ramp	20,400	21,679	22,977	23,422	22,555	22,735
501	Walnut Avenue	The Mall Street to Culver Drive	18,700	19,607	21,348	21,556	20,739	21,014
502	Walnut Avenue	Harvard Avenue to The Mall Street	18,700	19,566	21,283	21,466	20,671	20,921
503	Walnut Avenue	Franciscan Street to Ravenwood Street	17,800	18,104	19,627	20,217	19,169	19,748
504	Walnut Avenue	Ravenwood Street to Yale Avenue	17,800	18,267	19,787	19,725	19,154	19,073
505	Walnut Avenue	Culver Drive to Franciscan Street	17,800	18,122	19,171	19,522	18,884	19,198
506	Walnut Avenue	Peters Canyon Road to Harvard Avenue	20,300	23,611	26,108	26,432	25,274	25,674
507	Walnut Avenue	Jamboree Road NB Off-Ramp to Peters Canyon Road	20,300	23,091	25,075	25,325	24,408	24,721
508	Walnut Avenue	Yale Avenue to Kazan Street	11,900	13,893	14,945	15,195	14,408	14,757
509	Walnut Avenue	Wisteria to Jeffrey Road	11,900	14,036	14,674	14,856	14,301	14,563
510	Warner Avenue	Jamboree Road SB Off-ramp to Construction North	25,400	28,474	29,278	28,958	29,075	28,741
511	Warner Avenue	Construction North to Harvard Avenue	16,800	19,399	20,424	20,168	20,183	19,878
512	Warner Avenue	Harvard Avenue to Paseo Westpark	11,400	13,312	14,244	14,205	13,998	13,949
513	Warner Avenue	Santa Ynez to Culver Drive	9,100	10,265	11,546	11,717	11,117	11,142
514	Warner Avenue	Culver Drive to West Yale Loop	8,700	9,123	10,716	10,973	10,312	10,428
515	West Yale Loop	Alton Parkway to Blue Lake North	8,000	9,388	9,475	9,360	9,402	9,462
516	West Yale Loop	Eagle Run to Main Street	8,000	9,045	9,135	9,015	9,077	9,126
517	West Yale Loop	Thunder Run to Yale Avenue	7,000	8,605	9,371	9,484	9,148	9,279
518	West Yale Loop	Main Street to Timber Run	7,000	7,350	7,206	7,261	7,350	7,177
519	West Yale Loop	Yale Avenue to Shorebird	5,700	6,121	7,821	8,013	7,270	7,554
520	West Yale Loop	Warner Avenue to Stonecreek South	5,700	6,494	6,943	7,018	6,777	6,766

Table 2

521	West Yale Loop	Barranca Parkway to Alton Parkway	5,500	6,497	6,571	6,549	6,586	6,550
522	West Yale Loop	Stonecreek North to Warner Avenue	5,700	5,909	6,771	6,875	6,484	6,628
523	West Yale Loop	Birdsong to Barranca Parkway	5,700	6,221	6,532	6,637	6,405	6,435
524	Westwood	Yorktown to Bryan Avenue	5,600	6,136	6,042	6,031	6,072	6,049
525	Westwood	Bryan Avenue to Leaf	3,600	3,830	3,912	3,919	3,762	3,817
526	Yale Avenue	Deerfield Avenue to Winvale Avenue	10,200	10,521	10,497	10,502	10,511	10,532
527	Yale Avenue	Hicks Canyon Drive to Meadowood	7,500	7,885	7,806	7,828	7,814	7,828
528	Yale Avenue	Walnut Avenue to Roosevelt	13,600	14,427	14,894	15,197	14,547	14,775
529	Yale Avenue	Roosevelt to Trabuco Road	13,600	14,270	14,285	14,306	14,133	14,287
530	Yale Avenue	Irvine Center Drive to Deerfield Avenue	12,500	14,084	13,571	13,416	13,725	13,713
531	Yale Avenue	West Yale Loop to Irvine Center Drive	8,900	10,606	12,463	12,658	11,926	12,162
532	Yale Avenue	Winvale Avenue to Karen Ann Lane	10,200	10,512	10,439	10,524	10,310	10,472
533	Yale Avenue	Karen Ann Lane to Walnut Avenue	10,200	10,512	10,439	10,524	10,310	10,472
534	Yale Avenue	Trabuco Road to Southwood	9,000	10,224	10,232	10,332	10,111	10,318
535	Yale Avenue	Southwood to Bryan Avenue	9,000	10,061	9,703	9,807	9,802	9,907
536	Yale Avenue	Northwood to Irvine Boulevard	8,500	9,496	9,106	9,199	9,152	9,164
537	Yale Avenue	Bryan Avenue to Monticello	8,500	9,368	8,826	8,895	8,918	8,902
538	Yale Avenue	Irvine Boulevard to Park Place	7,200	7,567	7,442	7,432	7,463	7,457
539	Yale Avenue	University Drive to Royce	1,100	3,588	4,105	4,006	3,940	3,979
540	Yale Court	Arborwood to Portola Parkway	6,000	6,351	6,458	6,472	6,427	6,441

Source: Iteris 2024

Table 3

**Table 3: Distribution of Traffic Flow by Vehicle Type (Vehicle Mix)**

Roadway Classification	Total % Traffic Flow <sup>1</sup>			Total
	Autos	Medium Trucks	Heavy Trucks	
All Roadways	97.42%	1.84%	0.74%	100.00%

<sup>1</sup> Source: Orange County vehicle mix.

Table 4

**Table 4: Time of Day Vehicle Splits**

Vehicle Type	Time of Day Splits <sup>1</sup>			Total of Time of Day Splits
	Daytime	Evening	Nighttime	
Autos	77.50%	12.90%	9.60%	100.00%
Medium Trucks	84.80%	4.90%	10.30%	100.00%
Heavy Trucks	86.50%	2.70%	10.80%	100.00%

<sup>1</sup> Orange County vehicle mix.

"Daytime" = 7:00 a.m. to 7:00 p.m.; "Evening" = 7:00 p.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

Table 5

Table 5: Existing Conditions Noise Contours

ID	Road	Segment	CNEL at Nearest Receiving Land Use (dBA) <sup>1</sup>	Distance to Contour from Centerline (Feet)		
				70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Ada	Barranca Parway to Marine Way	0.0	RW	RW	RW
2	Ada	Alton Parkway to Barranca Parkway	60.3	RW	RW	65
3	Alton Parkway	Enterprise to I-5 NB Off-Ramp	71.3	102	220	475
4	Alton Parkway	I-5 NB Off-Ramp to Technology Drive West	72.1	110	236	509
5	Alton Parkway	East Yale Loop to Jeffrey Road	71.3	77	165	355
6	Alton Parkway	Gateway Boulevard to Enterprise	69.3	RW	163	351
7	Alton Parkway	Jeffrey Road to Royal Oak	70.1	63	137	295
8	Alton Parkway	Daimler Street to Red Hill Avenue	63.7	RW	RW	110
9	Alton Parkway	Culver Drive to West Yale Loop	70.4	67	143	309
10	Alton Parkway	West Yale Loop to Lake Road	70.3	66	141	304
11	Alton Parkway	Technology Drive West to Ada	70.2	82	177	382
12	Alton Parkway	Creek Road to East Yale Loop	70.1	64	137	296
13	Alton Parkway	Red Hill Avenue to Von Karman Avenue	68.1	RW	101	217
14	Alton Parkway	Lake Road to Creek Road	70.1	63	136	293
15	Alton Parkway	Telemetry to Banting	69.0	RW	116	249
16	Alton Parkway	Irvine Boulevard to Commercentre	70.3	88	190	409
17	Alton Parkway	Jenner to Telemetry	69.0	RW	115	248
18	Alton Parkway	Irvine Center Drive to Gateway Boulevard	68.6	RW	147	316
19	Alton Parkway	Sand Canyon Avenue to Hospital	72.1	83	180	387
20	Alton Parkway	Laguna Canyon Road to Jenner	69.0	RW	115	248
21	Alton Parkway	Technology Drive East to Barranca Pkwy/Muirlands Blvd	69.1	RW	159	342
22	Alton Parkway	Royal Oak to Valley Oak Drive	69.4	RW	123	265
23	Alton Parkway	Banting to Pacifica	68.4	RW	105	226
24	Alton Parkway	Barranca Pkwy/Muirlands Blvd to Jeronimo Road	70.1	85	184	396
25	Alton Parkway	Ada to Technology Drive East	69.2	RW	160	345

Table 5

26	Alton Parkway	Von Karman Avenue to Jamboree Road	68.7	RW	110	237
27	Alton Parkway	Jeronimo Road to Hughes	69.8	RW	175	377
28	Alton Parkway	Hughes to Morgan	69.5	RW	169	364
29	Alton Parkway	Morgan to Toledo Way	68.8	RW	151	325
30	Alton Parkway	San Marino to Culver Drive	68.8	RW	151	325
31	Alton Parkway	Jamboree Road to Murphy Avenue	68.0	RW	134	288
32	Alton Parkway	Hospital to Laguna Canyon Road	70.7	67	144	310
33	Alton Parkway	Valley Oak Drive to Sand Canyon Avenue	71.1	71	153	330
34	Alton Parkway	Murphy Avenue to Harvard Avenue	68.1	RW	135	291
35	Alton Parkway	Foster to Irvine Boulevard	68.0	RW	133	286
36	Alton Parkway	Fairbanks to Foster	67.5	RW	124	267
37	Alton Parkway	Toledo Way to Berteau	68.2	RW	137	296
38	Alton Parkway	Pacifica to Meridian	69.7	RW	123	265
39	Alton Parkway	Berteau to Fairbanks	68.1	RW	135	291
40	Alton Parkway	Meridian to Irvine Center Drive	66.6	RW	108	232
41	Alton Parkway	Paseo Westpark to San Marino	67.9	RW	131	283
42	Alton Parkway	Harvard Avenue to Paseo Westpark	66.9	RW	113	243
43	Astor	Lynx to Fairbanks	57.5	RW	RW	RW
44	Astor	Cadence to Lynx	0.0	RW	RW	RW
45	Bake Parkway	I-5 NB Off-Ramp to Rockfield Boulevard	75.4	228	490	1,056
46	Bake Parkway	Muirlands Boulevard to Jeronimo Road	72.7	128	275	593
47	Bake Parkway	Rockfield Boulevard to Muirlands Boulevard	74.7	207	445	960
48	Bake Parkway	Jeronimo Road to Toledo Way	71.9	112	242	521
49	Bake Parkway	Toledo Way to Cromwell	71.5	107	230	495
50	Bake Parkway	Cromwell to Irvine Boulevard	71.4	104	224	483
51	Bake Parkway	Research Drive to I-5 SB Off-Ramp	68.5	RW	143	308
52	Bake Parkway	Irvine Center Drive to Research Drive	64.1	RW	RW	157
53	Bake Parkway	Lake Forest Drive to Irvine Center Drive	61.9	RW	RW	113
54	Banting	Alton Parkway to Barranca Parkway	57.6	RW	RW	RW
55	Barranca Parkway	Pacifica to Irvine Center Drive	70.5	68	146	315
56	Barranca Parkway	Banting to Pacifica	70.7	70	150	324



Table 5

57	Barranca Parkway	I-5 HOV Ramp to Technology Drive West	69.8	RW	131	282
58	Barranca Parkway	Technology Drive West to Ada	70.4	67	144	311
59	Barranca Parkway	Irvine Center Drive to I-5 HOV Ramp	69.3	RW	121	260
60	Barranca Parkway	Culver Drive to West Yale Loop	71.9	84	182	391
61	Barranca Parkway	East Yale Loop to Jeffrey Road	71.7	81	174	374
62	Barranca Parkway	West Yale Loop to Lake Road	71.6	80	173	372
63	Barranca Parkway	Ada to Alton Parkway	70.2	65	140	301
64	Barranca Parkway	Lake Road to Creek Road	71.2	76	163	350
65	Barranca Parkway	Red Hill Avenue to Armstrong Avenue	73.3	167	360	775
66	Barranca Parkway	Discovery/Herchel to Banting	69.7	RW	129	279
67	Barranca Parkway	Lyon to East Yale Loop	71.0	73	157	339
68	Barranca Parkway	Creek Road to Lyon	70.9	72	155	335
69	Barranca Parkway	Von Karman Avenue to Jamboree Road	71.5	100	216	464
70	Barranca Parkway	Sand Canyon Avenue to Laguna Canyon Road	68.5	RW	107	231
71	Barranca Parkway	Armstrong Avenue to Von Karman Avenue	72.0	108	233	501
72	Barranca Parkway	Valley Oak Drive to Sand Canyon Avenue	69.1	RW	117	253
73	Barranca Parkway	Jamboree Road to Construction Circle	70.1	86	185	399
74	Barranca Parkway	Santa Rosa to Culver Drive	69.8	RW	176	378
75	Barranca Parkway	FedEx to Discovery/Herchel	68.8	RW	112	241
76	Barranca Parkway	Jeffrey Road to Valley Oak Drive	68.3	RW	104	225
77	Barranca Parkway	Laguna Canyon Road to FedEx	68.8	RW	111	240
78	Barranca Parkway	Pullman Street to Red Hill Avenue	72.7	152	327	703
79	Barranca Parkway	Construction Circle to Fire Station	69.4	RW	166	357
80	Barranca Parkway	Fire Station to Harvard Avenue	69.4	RW	166	357
81	Barranca Parkway	Paseo Westpark to Santa Rosa	69.3	RW	163	350
82	Barranca Parkway	Harvard Avenue to Paseo Westpark	69.2	RW	160	345
83	Bay Tree	Trabuco Road to Roosevelt	56.1	RW	RW	RW
84	Beacon	Ridge Valley to Benchmark	0.0	RW	RW	RW
85	Benchmark (LN Street)	Ridge Valley (O Street) to Bosque	0.0	RW	RW	RW
86	Bison Avenue	SR-73 NB Off-Ramp to California Avenue	68.6	RW	109	235
87	Bonita Canyon Drive	MacArthur Boulevard to SR-73	70.0	75	162	350

Table 5

88	Bonita Canyon Drive	Turtle Ridge to Shady Canyon Drive	67.5	RW	111	239
89	Bonita Canyon Drive	Newport Coast Drive to Turtle Ridge	67.5	RW	111	239
90	Bonita Canyon Drive	SR-73 NB Off-Ramp to Newport Coast Drive	67.5	RW	111	239
91	Bosque	Cadence to Great Park Boulevard	63.0	RW	RW	59
92	Bosque	Irvine Boulevard to Benchmark (LN Street)	59.7	RW	RW	RW
93	Bosque	Benchmark to Cadence	59.7	RW	RW	RW
94	Bosque	Great Park Boulevard to Beacon	0.0	RW	RW	RW
95	Bosque	Beacon to S 5th Street	0.0	RW	RW	RW
96	Bryan Avenue	Jamboree Road to Market Place	68.7	RW	110	237
97	Bryan Avenue	Market Place to El Camino Real	68.7	RW	110	237
98	Bryan Avenue	Rubicon to Culver Drive	68.7	RW	110	237
99	Bryan Avenue	El Camino Real to Rubicon	68.7	RW	110	237
100	Bryan Avenue	Eastwood to Jeffrey Road	65.8	RW	70	152
101	Bryan Avenue	Westwood to Yale Avenue	66.3	RW	76	164
102	Bryan Avenue	Culver Drive to Westwood	66.3	RW	76	164
103	Bryan Avenue	Yale Avenue to Eastwood	65.8	RW	70	152
104	Cadence	Pusan to Chinon	64.5	RW	RW	75
105	Cadence	Bosque to Pusan	65.7	RW	41	89
106	Cadence	Ridge Valley (O Street) to Bosque	62.6	RW	RW	56
107	Cadence	Chinon to Merit	62.6	RW	RW	56
108	Cadence	Merit to Astor	0.0	RW	RW	RW
109	California Avenue	University Drive to Academy Way	64.3	RW	RW	120
110	California Avenue	Campus Drive to Harvard Avenue	63.2	RW	RW	102
111	California Avenue	Theory to Bison Avenue	63.1	RW	RW	100
112	Campus Drive	Carlson Avenue to University Drive	70.9	58	124	268
113	Campus Drive	University Drive to Bridge Road	70.1	64	138	296
114	Campus Drive	Jamboree Road to Carlson Avenue	69.0	RW	115	248
115	Campus Drive	Stanford Court to Berkeley Avenue	70.1	64	138	296
116	Campus Drive	California Avenue to Culver Drive	68.9	RW	113	243
117	Campus Drive	Berkeley Avenue to Cornell	68.9	RW	113	243
118	Campus Drive	Martin to Von Karman Avenue	67.5	RW	92	198

Table 5

119	Campus Drive	Culver Drive to Paseo Montoya (Turtle Rock Drive)	68.5	RW	106	229
120	Campus Drive	Von Karman Avenue to Teller Avenue	66.8	RW	82	178
121	Campus Drive	MacArthur Boulevard to Martin	67.5	RW	92	198
122	Campus Drive	Teller Avenue to Jamboree Road	66.8	RW	82	178
123	Carlson Avenue	Michelson Drive to Campus Drive	64.5	RW	RW	124
124	Chinon	Irvine Boulevard to Cadence	56.6	RW	RW	RW
125	Creek Road	Alton Parkway to Barranca Parkway	55.3	RW	RW	RW
126	Culver Drive	Michelson Drive to I-405 SB Off-Ramp	73.4	141	305	656
127	Culver Drive	I-405 SB Off-Ramp to I-405 NB Off Ramp	73.4	141	305	656
128	Culver Drive	I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)	73.7	147	318	685
129	Culver Drive	Scottsdale Drive to I-5 SB Off- Ramp	73.7	147	318	685
130	Culver Drive	I-405 NB Off-Ramp to San Leandro	73.4	141	305	656
131	Culver Drive	San Leandro to Main Street	73.2	137	296	637
132	Culver Drive	Harvard Avenue to University Drive	72.7	128	275	593
133	Culver Drive	Trabuco Road to Farwell Avenue	74.1	150	322	694
134	Culver Drive	Alton Parkway to Barranca Parkway	72.9	130	280	604
135	Culver Drive	Main Street to Alton Parkway	72.7	128	276	594
136	Culver Drive	Warner Avenue to Irvine Center Drive	72.7	126	272	586
137	Culver Drive	Walnut Avenue to Scottsdale Dive	72.6	125	269	580
138	Culver Drive	Barranca Parkway to Warner Avenue	72.6	125	269	579
139	Culver Drive	Shady Canyon Drive to Palo Verde	71.4	77	166	358
140	Culver Drive	Deerfield Avenue to Walnut Avenue	72.3	119	257	553
141	Culver Drive	Sandburg Way to Michelson Drive	71.9	112	241	520
142	Culver Drive	Irvine Center Drive to Deerfield Avenue	72.1	115	248	534
143	Culver Drive	Palo Verde to Campus Drive	71.4	77	166	358
144	Culver Drive	University Drive to Sandburg Way	71.5	106	228	491
145	Culver Drive	Farwell Avenue to Bryan Avenue	72.8	124	267	574
146	Culver Drive	Campus Drive to High School	71.6	108	232	501
147	Culver Drive	High School to Harvard Avenue	71.6	108	232	501
148	Culver Drive	Bryan Avenue to Florence	71.5	105	226	488
149	Culver Drive	Portola Parkway to Settlers	68.9	RW	114	245

Table 5

150	Culver Drive	Florence to Irvine Boulevard	71.3	103	222	479
151	Culver Drive	Irvine Boulevard to Viewpark	70.0	84	180	388
152	Culver Drive	Viewpark to Meadowood	70.0	84	180	388
153	Culver Drive	Settlers to Furrow	0.0	RW	RW	RW
154	Culver Drive	Meadowood to Portola Parkway	68.3	RW	140	301
155	Discovery Drive	Irvine Center Drive to Laguna Canyon Road	56.6	RW	RW	RW
156	Discovery Drive	Waterworks Way to Irvine Center Drive	0.0	RW	RW	RW
157	East Yale Loop	Alton Parkway to Witherspoon	64.6	RW	RW	127
158	East Yale Loop	Osborn Street to Barranca Parkway	64.3	RW	RW	122
159	East Yale Loop	Yale Avenue to Springbrook South	62.3	RW	RW	89
160	East Yale Loop	Springbrook North to Alton Parkway	62.3	RW	RW	89
161	East Yale Loop	Woodspring to Yale Avenue	62.3	RW	RW	89
162	East Yale Loop	Barranca Parkway to Eastshore	62.3	RW	RW	89
163	Eastwood	Bryan Avenue to Monticello	59.5	RW	RW	RW
164	Eastwood	Columbus to Bryan Avenue	58.5	RW	RW	RW
165	El Camino Real	Jamboree Road to Alliance (SR-261 Bridge)	66.9	RW	84	181
166	El Camino Real North	El Camino Real to Bryan Avenue	62.2	RW	RW	87
167	Fairbanks	Alton Parkway to Astor	61.3	RW	RW	46
168	Fairbanks	Irvine Boulevard to Alton Parkway	0.0	RW	RW	RW
169	Fairchild Road	MacArthur Boulevard to Jamboree Road	63.3	RW	RW	104
170	Gateway Boulevard	Alton Parkway to Irvine Center Drive	57.0	RW	RW	RW
171	Gateway Boulevard	Spectrum Center Drive (Fortune Drive) to Alton Parkway	59.4	RW	RW	RW
172	Gateway Boulevard	Irvine Center Drive to Meridian	56.8	RW	RW	RW
173	Great Park Boulevard	Sand Canyon to Ridge Valley	70.5	65	140	302
174	Great Park Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	64.0	RW	RW	116
175	Great Park Boulevard (EB)	Bosque to Skyhawk	0.0	RW	RW	RW
176	Great Park Boulevard (WB)	Bosque to Skyhawk	0.0	RW	RW	RW
177	Harvard Avenue	University Drive to Michelson Drive	71.2	45	97	209
178	Harvard Avenue	Michelson Drive to Coronado	69.5	RW	124	268
179	Harvard Avenue	San Marino to Alton Parkway	69.4	RW	123	265
180	Harvard Avenue	Coronado to Main Street	69.3	RW	121	262

Table 5

181	Harvard Avenue	San Carlo to San Marino	69.4	RW	123	265
182	Harvard Avenue	Main Street to San Carlo	69.3	RW	121	262
183	Harvard Avenue	Alton Parkway to San Leon	68.5	RW	108	232
184	Harvard Avenue	San Juan to Barranca Parkway	68.5	RW	108	232
185	Harvard Avenue	San Leon to San Juan	68.4	RW	105	226
186	Harvard Avenue	Irvine Center Drive to Deerfield Avenue	65.5	RW	68	146
187	Harvard Avenue	Deerfield Avenue to Poplar Street	65.5	RW	68	146
188	Harvard Avenue	Barranca Parkway to Warner Avenue	67.6	RW	94	202
189	Harvard Avenue	Bridge Road to University Drive	67.2	RW	88	190
190	Harvard Avenue	Paseo Westpark to Irvine Center Drive	66.1	RW	74	159
191	Harvard Avenue	Poplar Street to Walnut Avenue	66.8	RW	66	143
192	Harvard Avenue	California Avenue to Berkeley Avenue	66.1	RW	74	159
193	Harvard Avenue	Culver Drive to California Avenue	66.1	RW	74	159
194	Harvard Avenue	Berkeley to Bridge Road	66.1	RW	74	159
195	Harvard Avenue	Warner Avenue to Paseo Westpark	65.9	RW	72	156
196	Hicks Canyon Drive	Delamesa to Yale Avenue	58.2	RW	RW	RW
197	Hornet (5th St)	Ridge Valley (O Street) to Bosque	0.0	RW	RW	RW
198	Hubble	Irvine Center Drive to Bunsen	55.5	RW	RW	RW
199	Irvine Boulevard	SR-133 NB Off- Ramp to Ridge Valley (O Street)	72.1	116	250	539
200	Irvine Boulevard	SR-133 SB Off-Ramp to SR-133 NB Off-Ramp	72.0	114	246	530
201	Irvine Boulevard	Sand Canyon to SR-133 SB Off-Ramp	72.9	124	268	577
202	Irvine Boulevard	Merit to Alton	71.4	104	225	484
203	Irvine Boulevard	Journey to Sand Canyon Avenue	71.4	104	225	485
204	Irvine Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	70.9	97	209	451
205	Irvine Boulevard	Pusan Way to Chinon (B Street)	70.8	95	204	440
206	Irvine Boulevard	Palo Lado to Yale Avenue	70.4	89	193	415
207	Irvine Boulevard	Culver Drive to Palo Lado	70.5	90	194	418
208	Irvine Boulevard	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.5	91	195	421
209	Irvine Boulevard	Old Myford Road to Market Place	70.3	88	190	409
210	Irvine Boulevard	Bosque (LY Street) to Modjeska	70.5	91	196	423
211	Irvine Boulevard	Jamboree Road to Old Myford Road	70.3	88	190	409

Table 5

212	Irvine Boulevard	Market Place to SR-261 SB Off-Ramp	70.3	88	189	408
213	Irvine Boulevard	Jeffrey Road to Groveland	70.6	92	198	427
214	Irvine Boulevard	Bake Parkway to Lake Forest Drive	69.8	RW	177	381
215	Irvine Boulevard	Independence Way (The Groves)/The Groves to Jeffrey Road	70.2	87	187	404
216	Irvine Boulevard	Chinon (B Street) to Merit	70.2	87	188	405
217	Irvine Boulevard	SR-261 NB Off-Ramp to Central Park	70.1	85	184	396
218	Irvine Boulevard	Pueblo Norte to Independence Way (The Groves)/ Parkwood	69.9	RW	179	386
219	Irvine Boulevard	Yale Avenue to Pueblo Norte	69.9	RW	179	386
220	Irvine Boulevard	Modjeska to Pusan Way	70.0	84	182	391
221	Irvine Boulevard	Central Park Avenue to Culver Drive	69.5	RW	168	362
222	Irvine Boulevard	Parker to Bake Parkway	69.0	RW	154	332
223	Irvine Boulevard	Alton Parkway to Fairbanks	68.4	RW	142	305
224	Irvine Center Drive	Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp	71.3	98	210	453
225	Irvine Center Drive	Orange Tree to Valley Oak Drive	69.7	RW	172	370
226	Irvine Center Drive	I-405 SB Off-Ramp to Research	70.9	92	198	426
227	Irvine Center Drive	Irvine Valley College to Orange Tree	69.7	RW	172	370
228	Irvine Center Drive	Fontaine Avenue to Jeffrey Road	69.5	RW	166	358
229	Irvine Center Drive	Culver Drive to Deerwood	69.7	RW	173	373
230	Irvine Center Drive	Deerwood to Yale Avenue	69.6	RW	170	367
231	Irvine Center Drive	Yale Avenue to Fontaine Avenue	69.4	RW	164	353
232	Irvine Center Drive	Jeffrey Road to Irvine Valley College	69.7	RW	172	370
233	Irvine Center Drive	Alton Parkway to Spectrum	68.9	RW	153	329
234	Irvine Center Drive	Spectrum to Pacifica	68.9	RW	153	330
235	Irvine Center Drive	Hearthstone to Culver Drive	69.2	RW	159	344
236	Irvine Center Drive	Charter to Barranca Parkway	68.1	RW	136	293
237	Irvine Center Drive	Jamboree Road to Harvard Avenue	69.7	RW	173	373
238	Irvine Center Drive	Pacifica to Entertainment (Enterprise/Fortune)	69.1	RW	157	339
239	Irvine Center Drive	Valley Oak Drive to Sand Canyon Avenue	68.1	RW	135	290
240	Irvine Center Drive	Harvard Avenue to Hearthstone	69.2	RW	159	344
241	Irvine Center Drive	Research to Hubble	67.9	RW	130	281
242	Irvine Center Drive	Barranca Parkway to Gateway Boulevard	66.9	RW	113	243

Table 5

243	Irvine Center Drive	Bake Parkway to Muller	67.9	RW	130	281
244	Irvine Center Drive	Discovery to Charter	67.3	RW	119	256
245	Irvine Center Drive	Hubble to Bake Parkway	67.8	RW	129	278
246	Irvine Center Drive	Muller to Tesla	67.7	RW	127	273
247	Irvine Center Drive	Sand Canyon Avenue to Odyssey	67.6	RW	125	270
248	Irvine Center Drive	Tesla to Scientific Way	67.1	RW	116	250
249	Irvine Center Drive	Scientific Way to Lake Forest Drive	67.2	RW	117	253
250	Irvine Center Drive	Gateway Boulevard to Alton Parkway	66.7	RW	109	235
251	Irvine Center Drive	Laguna Canyon Road to Discovery	66.8	RW	111	238
252	Irvine Center Drive	Odyssey to Laguna Canyon Road	66.8	RW	112	240
253	Irvine Center Drive (Edinger)	Redhill Avenue to Jamboree Road	69.6	RW	171	368
254	Jamboree Road	I-5 SB Off-Ramp to I-5 NB Off-Ramp	74.3	163	350	755
255	Jamboree Road	I-405 SB Off-Ramp to I-405 NB Off Ramp	75.1	176	380	818
256	Jamboree Road	Walnut Avenue to Michelle Drive	73.5	143	309	665
257	Jamboree Road	I-405 NB Off-Ramp to Main Street	76.5	272	586	1,263
258	Jamboree Road	Michelle Drive to I-5 SB Off-Ramp	73.5	143	309	665
259	Jamboree Road	Main Street to Kelvin Avenue	75.7	241	519	1,119
260	Jamboree Road	Michelson Drive to I-405 SB Off-Ramp	73.6	192	414	893
261	Jamboree Road	Kelvin Avenue to McGaw Avenue	75.5	231	498	1,074
262	Jamboree Road	McGaw Avenue to Alton Parkway	75.4	229	494	1,064
263	Jamboree Road	Birch Street to Campus Drive	72.1	116	251	541
264	Jamboree Road	Dupont Drive to Michelson Drive	73.3	132	284	613
265	Jamboree Road	Alton Parkway to Beckman	75.2	222	477	1,028
266	Jamboree Road	Fairchild Road to Birch Street	72.2	113	243	523
267	Jamboree Road	Beckman to Barranca Parkway	75.0	215	464	1,000
268	Jamboree Road	I-5 NB Off-Ramp to El Camino Real	74.9	211	455	981
269	Jamboree Road	Campus Drive to Dupont Drive	72.5	118	254	548
270	Jamboree Road	El Camino Real to West Drive	74.9	211	455	981
271	Jamboree Road	West Drive to Bryan Avenue	74.9	211	455	981
272	Jamboree Road	Bryan Avenue to Irvine Boulevard	74.5	199	428	922
273	Jamboree Road	Koll Center to Fairchild Road	71.7	103	222	479

Table 5

274	Jamboree Road	MacArthur Boulevard to Koll Center	71.8	106	229	493
275	Jamboree Road	Irvine Boulevard to Portola Parkway	70.0	84	180	388
276	Jamboree Road	Warner Avenue to Edinger Avenue	79.0	254	547	1,179
277	Jamboree Road	Barranca Parkway to Warner Avenue	78.1	222	479	1,032
278	Jamboree Road	Edinger Avenue to Walnut Avenue	77.8	212	457	984
279	Jeffrey Road	Walnut Avenue to I-5 NB Off-Ramp	70.9	97	208	448
280	Jeffrey Road	I-5 NB Off-Ramp to Roosevelt	71.8	106	229	493
281	Jeffrey Road	Poplar (Meadows) to Walnut Avenue	70.4	89	192	413
282	Jeffrey Road	Alton Parkway to Barranca Parkway	70.3	88	190	410
283	Jeffrey Road	Irvine Center Drive to Poplar (Meadows)	70.2	87	187	402
284	Jeffrey Road	I-405 NB Off-Ramp to Quail Creek	70.4	89	191	411
285	Jeffrey Road	Barranca Parkway to Irvine Valley College	70.3	87	188	405
286	Jeffrey Road	Quail Creek to Alton Parkway	70.4	89	191	411
287	Jeffrey Road	Irvine Valley College to Irvine Center Drive	70.1	86	185	398
288	Jeffrey Road	Trabuco Road to Hideaway	69.4	RW	165	356
289	Jeffrey Road	Hideaway to Bryan Avenue	69.4	RW	165	356
290	Jeffrey Road	Roosevelt to Grove	70.0	80	172	371
291	Jeffrey Road	Grove to Trabuco Road	70.0	80	172	371
292	Jeffrey Road	Bryan Avenue to Irvine Boulevard	68.1	RW	135	292
293	Jeffrey Road	Encore to Portola Parkway	64.0	RW	RW	156
294	Jeffrey Road	Irvine Boulevard to Encore	64.0	RW	RW	156
295	Jeronimo Road	Goodyear to Bake Parkway	64.4	RW	RW	123
296	Jeronimo Road	Alton Parkway to Goodyear	64.1	RW	RW	117
297	Laguna Canyon Road	Old Laguna Canyon Road to Lake Forest Drive	72.6	125	269	579
298	Laguna Canyon Road	Laguna Canyon Freeway to Quail Hill Parkway	67.7	RW	95	205
299	Laguna Canyon Road	Discovery to Sand Canyon Avenue	64.8	RW	RW	131
300	Laguna Canyon Road	I-405 Overcrossing to Pasteur	66.0	RW	59	126
301	Laguna Canyon Road	Irvine Center Drive to Discovery	63.6	RW	RW	109
302	Laguna Canyon Road	Quail Hill Parkway to I-405 Overcrossing	66.0	RW	59	126
303	Laguna Canyon Road	Pasteur to Alton Parkway	65.5	RW	68	146
304	Laguna Canyon Road	Waterworks to Irvine Center Drive	64.5	RW	RW	124



Table 5

305	Laguna Canyon Road	Alton Parkway to Barranca Parkway	64.8	RW	RW	131
306	Laguna Canyon Road	Barranca Parkway to Waterworks	63.9	RW	RW	113
307	Lake Forest Drive	Hidden Canyon to Laguna Canyon Road	68.3	RW	104	223
308	Lake Forest Drive	Bake Parkway to Hidden Canyon (Romano)	68.3	RW	104	223
309	Lake Forest Drive	Tesla to Bake Parkway	65.3	RW	88	190
310	Lake Road	Alton Parkway to Barranca Parkway	59.0	RW	RW	RW
311	Lynx	Irvine Boulevard to Astor	0.0	RW	RW	RW
312	MacArthur Boulevard	I-405 SB Off-Ramp to Michelson Drive	76.0	250	539	1,162
313	MacArthur Boulevard	Main Street to I-405 NB Off-Ramp	75.8	245	529	1,139
314	MacArthur Boulevard	I-405 NB Off-Ramp and I-405 SB Off-Ramp	75.7	239	514	1,107
315	MacArthur Boulevard	Jamboree Road to Fairchild Road	69.7	RW	172	370
316	MacArthur Boulevard	Fairchild Road to University Drive	69.7	RW	172	370
317	MacArthur Boulevard	Fitch to Red Hill Avenue	70.4	85	183	395
318	MacArthur Boulevard	Michelson Drive to Douglas	71.3	121	261	562
319	MacArthur Boulevard	Douglas to Campus Drive	71.3	121	261	562
320	MacArthur Boulevard	Skypark to Main Street	69.0	RW	148	320
321	MacArthur Boulevard	Redhill Avenue to Skypark	68.0	RW	134	289
322	MacArthur Boulevard	Birch Street to Jamboree Road	66.5	RW	106	228
323	MacArthur Boulevard	Campus Drive to Birch Street	68.5	RW	172	371
324	Main Street	Gillette Avenue to Von Karman Avenue	69.4	RW	157	339
325	Main Street	MacArthur Boulevard to Mercantile	69.4	RW	157	339
326	Main Street	Executive Park to MacArthur Boulevard	67.7	RW	127	273
327	Main Street	Von Karman Avenue to Cartwright	67.2	RW	117	253
328	Main Street	McDermott to Red Hill Avenue	67.9	RW	131	283
329	Main Street	Red Hill Avenue to Executive Circle	67.7	RW	127	273
330	Main Street	Jamboree Road to Union	67.4	RW	122	262
331	Main Street	Culver Drive to West Yale Loop	67.0	RW	85	184
332	Main Street	Siglo to Jamboree Road	67.2	RW	117	253
333	Main Street	Veneto to Harvard Avenue	67.4	RW	122	262
334	Main Street	Paseo Westpark to Culver Drive	66.2	RW	75	161
335	Main Street	Harvard Avenue to San Mateo	66.2	RW	75	161

Table 5

336	Marine Way	Sand Canyon Avenue to Ridge Valley (O Street)	67.8	RW	77	165
337	Marine Way	Alton Parkway to Bake Parkway	0.0	RW	RW	RW
338	Marine Way	Lynx to Barranca Parkway	0.0	RW	RW	RW
339	Marine Way	County Access to Treble	59.3	RW	RW	RW
340	Marine Way	Ridge Valley (O Street) to Skyhawk	62.0	RW	RW	85
341	Marine Way	Skyhawk to County Access	59.3	RW	RW	RW
342	Marine Way	Barranca Parkway to Alton Parkway	52.7	RW	RW	RW
343	Marine Way	Treble to Lynx	0.0	RW	RW	RW
344	McGaw Avenue	Von Karman Avenue to Jamboree Road	62.2	RW	RW	87
345	McGaw Avenue	Red Hill Avenue to Von Karman Avenue	62.1	RW	RW	86
346	McGaw Avenue	Daimler to Red Hill Avenue	61.0	RW	RW	72
347	McGaw Avenue	Jamboree Road to Murphy Avenue	57.6	RW	RW	RW
348	Meadowood	Culver Drive to Canyonwood	59.5	RW	RW	RW
349	Meridian	Spectrum to Alton Parkway	54.7	RW	RW	RW
350	Meridian	Alton Parkway to Gateway Boulevard	53.5	RW	RW	RW
351	Merit	Irvine Boulevard to Cadence	59.3	RW	RW	RW
352	Michelson Drive	Riparian to Harvard Avenue	66.7	RW	82	176
353	Michelson Drive	Almond Tree Lane to Yale Avenue	66.3	RW	46	98
354	Michelson Drive	Von Karman Avenue to Obsidian	66.7	RW	81	175
355	Michelson Drive	Parkside to Culver Drive	66.2	RW	75	161
356	Michelson Drive	Gillman to Seton/Sandburg Way	66.3	RW	46	98
357	Michelson Drive	Carlson to Prince	65.4	RW	80	173
358	Michelson Drive	MacArthur Boulevard to Dupont Drive	66.7	RW	81	175
359	Michelson Drive	Harvard Avenue to Parkside	66.2	RW	75	161
360	Michelson Drive	Bixby to Von Karman Avenue	64.9	RW	RW	133
361	Michelson Drive	Jamboree Road to Carlson	68.0	RW	96	206
362	Michelson Drive	Teller to Jamboree Road	68.7	RW	106	229
363	Michelson Drive	Jordan East to University Drive	66.6	RW	38	82
364	Michelson Drive	Culver Drive to Angell	65.9	RW	46	99
365	Modjeska (A Street)	Portola Springs to Irvine Boulevard	70.7	33	72	154
366	Modjeska (A Street)	South of Irvine Boulevard	61.4	RW	RW	47

Table 5

367	Muirlands Boulevard	Bake Parkway to City Limits	66.4	RW	77	167
368	Muirlands Boulevard	Alton Parkway to Sterling	66.1	RW	74	159
369	Muirlands Boulevard	Wrigley to Bake Parkway	66.1	RW	74	159
370	Newport Coast Drive	SR-73 NB Off-Ramp to Turtle Ridge	65.9	RW	71	154
371	Newport Coast Drive	Turtle Crest to Bonita Canyon Drive	65.0	RW	RW	134
372	Nightmist	Sand Canyon Avenue to Tulip (Road C)	60.8	RW	RW	70
373	Northwood	Yale Avenue to Savannah	62.3	RW	RW	53
374	Northwood	Goldrush to Yale Avenue	60.5	RW	RW	40
375	Oak Canyon Drive	Valley Oak Drive to Sand Canyon Avenue	66.2	RW	45	97
376	Pacifica	Gateway to Barranca Parkway	63.3	RW	RW	104
377	Pacifica	Alton Parkway to Gateway	61.8	RW	RW	83
378	Pacifica	Irvine Center Drive to Fortune Drive (Spectrum Center Drive)	61.7	RW	RW	81
379	Pacifica	Meridian to Alton Parkway	58.1	RW	RW	RW
380	Park Place	Christamon South to Yale Avenue	56.8	RW	RW	RW
381	Portola Parkway	Bee Canyon Access Road to Sand Canyon Avenue	70.3	65	140	302
382	Portola Parkway	Jeffrey Road to Bee Canyon Access Road	70.3	65	140	302
383	Portola Parkway	Arrowhead to Ridge Valley Parkway	69.6	RW	126	272
384	Portola Parkway	Sand Canyon Avenue to Arrowhead	69.6	RW	126	272
385	Portola Parkway	Portola Springs to SR-241 SB Off-Ramp	65.5	RW	68	146
386	Portola Parkway	Gatepark to Culver Drive	69.6	RW	171	369
387	Portola Parkway	ETC-6 (SR-261) NB Off-Ramp to Gatepark	69.6	RW	171	369
388	Portola Parkway	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	69.6	RW	171	369
389	Portola Parkway	Jamboree Road to Bellevue	69.6	RW	171	369
390	Portola Parkway	Bellevue to ETC-6 (SR-261) SB Off-Ramp	69.6	RW	171	369
391	Portola Parkway	Yale Avenue to Jeffrey Road	68.6	RW	146	314
392	Portola Parkway	Culver Drive to Yale Avenue	68.6	RW	146	314
393	Portola Parkway	Silverado to Portola Springs	66.5	RW	79	170
394	Pusan	Irvine Boulevard to Cadence	54.0	RW	RW	RW
395	Quail Hill Parkway	Shady Canyon Drive to Passage	67.3	RW	90	193
396	Quail Hill Parkway	East Knollcrest to Laguna Canyon Road	64.8	RW	RW	131
397	Quassar Drive (Spectrum)	Irvine Center Drive to Spectrum Center Drive (Fortune)	54.4	RW	RW	RW

Table 5

398	Red Hill Avenue	MacArthur Boulevard to McGaw Avenue	70.8	96	206	444
399	Red Hill Avenue	I-405 Over Crossing to Main Street	69.6	RW	127	274
400	Red Hill Avenue	Alton Parkway to Deere Avenue	69.5	RW	168	361
401	Red Hill Avenue	McGaw Avenue to Alton Parkway	69.3	RW	163	351
402	Red Hill Avenue	Deere Avenue to Barranca Parkway	69.3	RW	162	350
403	Red Hill Avenue	Skypark East to MacArthur Boulevard	70.2	62	133	287
404	Red Hill Avenue	Main Street to Skypark East	69.6	RW	122	263
405	Research Drive	Hubble to Bake Parkway	65.4	RW	66	143
406	Research Drive	Scientific to Lake Forest Drive	65.6	RW	68	147
407	Research Drive	Bake Parkway to Muller	66.2	RW	75	161
408	Research Drive	Irvine Center Drive to Bunsen	64.9	RW	RW	132
409	Ridge Valley (O Street)	Irvine Boulevard to Trabuco Road (Great Park Boulevard)	65.5	RW	67	145
410	Ridge Valley (O Street)	Portola Parkway to Irvine Boulevard	65.9	RW	71	154
411	Ridge Valley (O Street)	Trabuco Road (Great Park Boulevard) to Marine Way	65.8	RW	70	152
412	Ridge Valley (O Street)	Ranchland to Portola Parkway	58.0	RW	RW	RW
413	Ridgeline Drive	Concordia East to University Drive	67.7	RW	60	130
414	Ridgeline Drive	Turtle Rock Drive to San Simeon	67.7	RW	60	130
415	Rockfield Avenue	Whatney to McLaren	66.3	RW	77	165
416	Rockfield Avenue	Bake Parkway to Whatney	62.5	RW	RW	92
417	Rockfield Avenue	Thomas to Bake Parkway	62.5	RW	RW	92
418	Roosevelt	Jeffrey Road to Vision	65.2	RW	65	139
419	Roosevelt	Yale Avenue to Van Buren	67.9	RW	47	101
420	Roosevelt	Vision to Bay Tree	64.5	RW	RW	124
421	Roosevelt	Nimitz to Jeffrey Road	65.2	RW	65	139
422	Roosevelt	Tulip (Road C) to Sand Canyon Avenue	63.7	RW	RW	110
423	Royal Oak	Alton Parkway to Eaglecreek	63.8	RW	RW	54
424	Sand Canyon Avenue	Oak Canyon Drive to Burt Road	70.7	93	200	432
425	Sand Canyon Avenue	Irvine Center Drive to Oak Canyon Drive	70.6	92	197	425
426	Sand Canyon Avenue	I-405 NB Off-Ramp to Alton Parkway	73.6	104	225	485
427	Sand Canyon Avenue	Burt Road to I-5 SB Off-Ramp	71.2	96	206	445
428	Sand Canyon Avenue	Marine to I-5 NB Off-Ramp	72.7	151	326	703

Table 5

429	Sand Canyon Avenue	Trabuco Road to Towngate	70.0	84	181	390
430	Sand Canyon Avenue	Barranca Parkway to Waterworks	69.2	RW	160	344
431	Sand Canyon Avenue	I-5 SB Off-Ramp to Marine	72.7	151	326	703
432	Sand Canyon Avenue	Hospital to Barranca Parkway	69.3	RW	163	351
433	Sand Canyon Avenue	Nightmist to Roosevelt	73.3	167	359	774
434	Sand Canyon Avenue	I-405 SB Off-Ramp to I-405 NB Off-Ramp	72.4	86	186	400
435	Sand Canyon Avenue	I-5 NB Off-Ramp to Nightmist	73.2	164	354	762
436	Sand Canyon Avenue	Towngate to Irvine Boulevard	69.3	RW	163	352
437	Sand Canyon Avenue	Waterworks to Irvine Center Drive	69.2	RW	160	344
438	Sand Canyon Avenue	Irvine Boulevard to Portola Parkway	68.0	RW	99	214
439	Sand Canyon Avenue	Roosevelt to Trabuco Road	72.6	149	320	689
440	Sand Canyon Avenue	Alton Parkway to Hospital	69.7	RW	165	356
441	Sand Canyon/Shady Canyon	Quail Hill Parkway to I-405 SB Ramps	71.3	74	159	342
442	Scientific Way	Irvine Center Drive to Wald	54.6	RW	RW	RW
443	Shady Canyon Drive	Culver Drive/Bonita Canyon Drive to Cloverfield	68.6	RW	66	141
444	Shady Canyon Drive	Bommer Canyon Road to Sunnyhill	67.1	RW	69	148
445	Skyhawk	Great Park Boulevard to Marine Way	52.8	4	10	21
446	Southwood	Yale Avenue to Colt	60.5	RW	RW	40
447	Southwood	Challenger to Yale Avenue	59.9	RW	RW	RW
448	Spectrum Center Drive (Fortune Drive)	Pacifica to Quassar Drive (Spectrum )	61.4	RW	RW	78
449	Spectrum Center Drive (Fortune Drive)	Quassar Drive (Spectrum ) to Gatewayb	62.0	RW	RW	85
450	Sunnyhill	Shady Canyon Drive to Turtle Rock Drive	56.9	RW	RW	RW
451	Technology Drive	Barranca Parkway to Alton Parkway	67.0	RW	85	184
452	Technology Drive	Old Laguna Canyon Road to I-5/SR-133 Undercrossing	63.2	RW	RW	102
453	Technology Drive	I-5/SR-133 to Barranca Parkway	62.8	RW	RW	96
454	Technology Drive	Ada to Alton Parkway	57.8	RW	RW	RW
455	Toledo Way	Bake Parkway to City Limits	65.5	RW	67	145
456	Toledo Way	Goodyear to Bake Parkway	64.5	RW	RW	125
457	Toledo Way	Alton Parkway to Parker	63.9	RW	RW	114
458	Trabuco Road	Keystone to Sand Canyon Avenue	66.7	RW	81	175
459	Trabuco Road	Jeffrey Road to Keystone	66.7	RW	81	175

Table 5

460	Trabuco Road	Culver Drive to I-5 NB Off-Ramp	66.3	RW	77	165
461	Trabuco Road	Monroe to Yale Avenue	66.3	RW	77	165
462	Trabuco Road	I-5 NB Off-Ramp to Monroe	66.3	RW	77	165
463	Trabuco Road	Yale Avenue to Remington	65.7	RW	70	151
464	Trabuco Road	Remington to Jeffrey Road	65.7	RW	70	151
465	Turtle Ridge Drive	Federation Way to Bonita Canyon	0.0	RW	RW	RW
466	Turtle Rock Drive	Ridgeline to Willowleaf	66.9	RW	50	108
467	Turtle Rock Drive	Silkwood to Sunnyhill	67.0	RW	51	110
468	Turtle Rock Drive	Canyon Park to Ridgeline	66.7	RW	48	104
469	Turtle Rock Drive	Sunnyhill to Southernwood	63.9	RW	RW	68
470	Turtle Rock Drive	Campus Drive to Hillgate	63.8	RW	RW	112
471	Turtle Rock Drive	Paseo Segovia to Campus Drive	65.3	RW	42	90
472	University Drive	Golden Glow to Yale Avenue	72.2	87	188	405
473	University Drive	Ridgeline to Michelson Drive	72.1	104	223	481
474	University Drive	Culver Drive to Golden Glow	72.1	86	185	398
475	University Drive	Yale Avenue to Ridgeline	72.0	85	184	395
476	University Drive	Michelson Drive to I-405 SB Off-Ramp	72.3	119	256	552
477	University Drive	Mesa to Campus Drive	73.3	99	214	462
478	University Drive	MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	73.3	99	214	462
479	University Drive	California Avenue to Mesa	73.3	99	214	462
480	University Drive	Campus Drive to Harvard Avenue	69.5	RW	167	359
481	University Drive	SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	70.4	53	114	247
482	University Drive	SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps	69.2	RW	159	344
483	University Drive	San Joaquin to Culver Drive	68.7	RW	149	321
484	University Drive	Harvard Avenue to San Joaquin	68.7	RW	149	321
485	Valley Oak Drive	Hawkcreek to Barranca Parkway	63.0	RW	RW	99
486	Valley Oak Drive	Irvine Center Drive to Oak Canyon Drive	65.2	RW	51	110
487	Valley Oak Drive	Barranca Parkway to Irvine Center Drive	62.9	RW	RW	98
488	Valley Oak Drive	Alton Parkway to Hawkcreek	63.8	RW	RW	111
489	Von Karman Avenue	Marriott to Morse Avenue	68.9	RW	114	246
490	Von Karman Avenue	Michelson Drive to Quartz	68.8	RW	112	242

Table 5

491	Von Karman Avenue	McGaw Avenue to Alton Parkway	69.3	RW	121	260
492	Von Karman Avenue	Alton Parkway to Barranca Parkway	68.4	RW	127	273
493	Von Karman Avenue	Main Street to Anchor	69.2	RW	118	255
494	Von Karman Avenue	Anchor to McGaw Avenue	69.2	RW	118	255
495	Von Karman Avenue	Morse to Main Street	69.2	RW	118	255
496	Von Karman Avenue	Martin to Dupont Drive	67.8	RW	97	208
497	Von Karman Avenue	Campus Drive to Martin	67.8	RW	97	208
498	Von Karman Avenue	Dupont Drive to Michelson Drive	67.8	RW	97	208
499	Walnut Avenue	Jeffrey Road to I-5 SB Off-Ramp	68.9	RW	113	244
500	Walnut Avenue	Myford Road to Jamboree Road SB Off-Ramp	68.6	RW	109	235
501	Walnut Avenue	The Mall Street to Culver Drive	68.2	RW	103	222
502	Walnut Avenue	Harvard Avenue to The Mall Street	68.2	RW	103	222
503	Walnut Avenue	Franciscan Street to Ravenwood Street	68.0	RW	100	214
504	Walnut Avenue	Ravenwood Street to Yale Avenue	68.0	RW	100	214
505	Walnut Avenue	Culver Drive to Franciscan Street	68.0	RW	100	214
506	Walnut Avenue	Peters Canyon Road to Harvard Avenue	67.0	RW	113	244
507	Walnut Avenue	Jamboree Road NB Off-Ramp to Peters Canyon Road	67.0	RW	113	244
508	Walnut Avenue	Yale Avenue to Kazan Street	66.3	RW	76	164
509	Walnut Avenue	Wisteria to Jeffrey Road	66.3	RW	76	164
510	Warner Avenue	Jamboree Road SB Off-ramp to Construction North	69.6	RW	126	272
511	Warner Avenue	Construction North to Harvard Avenue	67.8	RW	96	206
512	Warner Avenue	Harvard Avenue to Paseo Westpark	66.1	RW	74	159
513	Warner Avenue	Santa Ynez to Culver Drive	65.1	RW	64	137
514	Warner Avenue	Culver Drive to West Yale Loop	64.9	RW	RW	133
515	West Yale Loop	Alton Parkway to Blue Lake North	63.3	RW	RW	104
516	West Yale Loop	Eagle Run to Main Street	63.3	RW	RW	104
517	West Yale Loop	Thunder Run to Yale Avenue	62.7	RW	RW	95
518	West Yale Loop	Main Street to Timber Run	62.7	RW	RW	95
519	West Yale Loop	Yale Avenue to Shorebird	61.8	RW	RW	83
520	West Yale Loop	Warner Avenue to Stonecreek South	61.8	RW	RW	83
521	West Yale Loop	Barranca Parkway to Alton Parkway	61.7	RW	RW	81

Table 5

522	West Yale Loop	Stonecreek North to Warner Avenue	61.8	RW	RW	83
523	West Yale Loop	Birdsong to Barranca Parkway	61.8	RW	RW	83
524	Westwood	Yorktown to Bryan Avenue	63.2	RW	RW	61
525	Westwood	Bryan Avenue to Leaf	61.3	RW	RW	46
526	Yale Avenue	Deerfield Avenue to Winvale Avenue	68.5	RW	64	138
527	Yale Avenue	Hicks Canyon Drive to Meadowood	67.2	RW	52	113
528	Yale Avenue	Walnut Avenue to Roosevelt	70.7	44	96	206
529	Yale Avenue	Roosevelt to Trabuco Road	66.9	RW	83	179
530	Yale Avenue	Irvine Center Drive to Deerfield Avenue	66.5	RW	79	169
531	Yale Avenue	West Yale Loop to Irvine Center Drive	65.0	RW	63	135
532	Yale Avenue	Winvale Avenue to Karen Ann Lane	65.6	RW	69	148
533	Yale Avenue	Karen Ann Lane to Walnut Avenue	65.6	RW	69	148
534	Yale Avenue	Trabuco Road to Southwood	65.1	RW	63	136
535	Yale Avenue	Southwood to Bryan Avenue	65.1	RW	63	136
536	Yale Avenue	Northwood to Irvine Boulevard	64.8	RW	RW	131
537	Yale Avenue	Bryan Avenue to Monticello	64.8	RW	RW	131
538	Yale Avenue	Irvine Boulevard to Park Place	64.1	RW	RW	117
539	Yale Avenue	University Drive to Royce	57.9	RW	RW	RW
540	Yale Court	Arborwood to Portola Parkway	60.0	RW	RW	38

<sup>1</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest receiving land use.  
 "RW" = Location of the respective noise contour falls within the right-of-way of the road.



Table 6

Table 6: Current General Plan Conditions Noise Contours

ID	Road	Segment	CNEL at Nearest Receiving Land Use (dBA) <sup>1</sup>	Distance to Contour from Centerline (Feet)		
				70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Ada	Barranca Parway to Marine Way	0.0	RW	RW	RW
2	Ada	Alton Parkway to Barranca Parkway	67.1	RW	86	186
3	Alton Parkway	Enterprise to I-5 NB Off-Ramp	72.6	125	269	579
4	Alton Parkway	I-5 NB Off-Ramp to Technology Drive West	73.3	132	284	613
5	Alton Parkway	East Yale Loop to Jeffrey Road	71.5	79	170	367
6	Alton Parkway	Gateway Boulevard to Enterprise	70.5	91	195	421
7	Alton Parkway	Jeffrey Road to Royal Oak	70.4	66	143	308
8	Alton Parkway	Daimler Street to Red Hill Avenue	70.4	67	144	310
9	Alton Parkway	Culver Drive to West Yale Loop	70.5	68	146	315
10	Alton Parkway	West Yale Loop to Lake Road	70.5	67	145	311
11	Alton Parkway	Technology Drive West to Ada	71.4	99	213	458
12	Alton Parkway	Creek Road to East Yale Loop	70.3	66	141	304
13	Alton Parkway	Red Hill Avenue to Von Karman Avenue	69.9	RW	134	288
14	Alton Parkway	Lake Road to Creek Road	70.3	65	140	303
15	Alton Parkway	Telemetry to Banting	69.8	RW	130	279
16	Alton Parkway	Irvine Boulevard to Commercentre	71.0	98	210	453
17	Alton Parkway	Jenner to Telemetry	69.7	RW	129	278
18	Alton Parkway	Irvine Center Drive to Gateway Boulevard	69.8	RW	176	379
19	Alton Parkway	Sand Canyon Avenue to Hospital	73.6	105	226	487
20	Alton Parkway	Laguna Canyon Road to Jenner	69.7	RW	128	276
21	Alton Parkway	Technology Drive East to Barranca Pkwy/Muirlands Blvd	70.4	89	191	412
22	Alton Parkway	Royal Oak to Valley Oak Drive	69.7	RW	128	277
23	Alton Parkway	Banting to Pacifica	69.3	RW	121	262
24	Alton Parkway	Barranca Pkwy/Muirlands Blvd to Jeronimo Road	70.3	88	190	409
25	Alton Parkway	Ada to Technology Drive East	70.2	87	187	402

Table 6

26	Alton Parkway	Von Karman Avenue to Jamboree Road	69.2	RW	119	256
27	Alton Parkway	Jeronimo Road to Hughes	69.9	RW	179	385
28	Alton Parkway	Hughes to Morgan	69.7	RW	172	370
29	Alton Parkway	Morgan to Toledo Way	69.0	RW	154	332
30	Alton Parkway	San Marino to Culver Drive	69.0	RW	155	334
31	Alton Parkway	Jamboree Road to Murphy Avenue	68.6	RW	147	316
32	Alton Parkway	Hospital to Laguna Canyon Road	71.5	75	162	349
33	Alton Parkway	Valley Oak Drive to Sand Canyon Avenue	71.4	74	160	346
34	Alton Parkway	Murphy Avenue to Harvard Avenue	68.5	RW	143	308
35	Alton Parkway	Foster to Irvine Boulevard	69.0	RW	155	334
36	Alton Parkway	Fairbanks to Foster	68.7	RW	148	319
37	Alton Parkway	Toledo Way to Berteza	68.4	RW	142	306
38	Alton Parkway	Pacifica to Meridian	70.7	67	144	310
39	Alton Parkway	Berteza to Fairbanks	68.3	RW	140	301
40	Alton Parkway	Meridian to Irvine Center Drive	67.5	RW	124	267
41	Alton Parkway	Paseo Westpark to San Marino	68.0	RW	134	288
42	Alton Parkway	Harvard Avenue to Paseo Westpark	67.1	RW	117	252
43	Astor	Lynx to Fairbanks	66.9	RW	50	109
44	Astor	Cadence to Lynx	66.0	RW	44	95
45	Bake Parkway	I-5 NB Off-Ramp to Rockfield Boulevard	76.4	268	578	1245
46	Bake Parkway	Muirlands Boulevard to Jeronimo Road	72.9	131	281	606
47	Bake Parkway	Rockfield Boulevard to Muirlands Boulevard	75.1	217	468	1009
48	Bake Parkway	Jeronimo Road to Toledo Way	72.0	114	245	528
49	Bake Parkway	Toledo Way to Cromwell	71.6	108	232	500
50	Bake Parkway	Cromwell to Irvine Boulevard	71.6	108	232	501
51	Bake Parkway	Research Drive to I-5 SB Off-Ramp	69.3	RW	163	352
52	Bake Parkway	Irvine Center Drive to Research Drive	64.6	RW	RW	170
53	Bake Parkway	Lake Forest Drive to Irvine Center Drive	63.0	RW	RW	133
54	Banting	Alton Parkway to Barranca Parkway	59.3	RW	RW	RW
55	Barranca Parkway	Pacifica to Irvine Center Drive	71.7	81	174	375
56	Barranca Parkway	Banting to Pacifica	71.8	83	179	385

Table 6

57	Barranca Parkway	I-5 HOV Ramp to Technology Drive West	70.9	71	154	331
58	Barranca Parkway	Technology Drive West to Ada	71.5	78	169	364
59	Barranca Parkway	Irvine Center Drive to I-5 HOV Ramp	70.8	70	152	327
60	Barranca Parkway	Culver Drive to West Yale Loop	72.0	85	183	394
61	Barranca Parkway	East Yale Loop to Jeffrey Road	71.7	82	176	379
62	Barranca Parkway	West Yale Loop to Lake Road	71.8	82	177	382
63	Barranca Parkway	Ada to Alton Parkway	72.3	89	191	411
64	Barranca Parkway	Lake Road to Creek Road	71.4	78	168	362
65	Barranca Parkway	Red Hill Avenue to Armstrong Avenue	74.4	196	423	911
66	Barranca Parkway	Discovery/Herchel to Banting	71.1	74	159	343
67	Barranca Parkway	Lyon to East Yale Loop	71.1	74	160	345
68	Barranca Parkway	Creek Road to Lyon	71.1	74	159	342
69	Barranca Parkway	Von Karman Avenue to Jamboree Road	72.4	116	249	536
70	Barranca Parkway	Sand Canyon Avenue to Laguna Canyon Road	70.6	68	147	317
71	Barranca Parkway	Armstrong Avenue to Von Karman Avenue	72.1	110	238	513
72	Barranca Parkway	Valley Oak Drive to Sand Canyon Avenue	70.4	66	143	308
73	Barranca Parkway	Jamboree Road to Construction Circle	70.7	94	202	436
74	Barranca Parkway	Santa Rosa to Culver Drive	70.6	92	198	427
75	Barranca Parkway	FedEx to Discovery/Herchel	69.6	RW	126	271
76	Barranca Parkway	Jeffrey Road to Valley Oak Drive	69.7	RW	129	278
77	Barranca Parkway	Laguna Canyon Road to FedEx	69.4	RW	124	266
78	Barranca Parkway	Pullman Street to Red Hill Avenue	73.4	170	366	788
79	Barranca Parkway	Construction Circle to Fire Station	70.1	85	183	395
80	Barranca Parkway	Fire Station to Harvard Avenue	70.1	85	183	395
81	Barranca Parkway	Paseo Westpark to Santa Rosa	70.1	85	184	396
82	Barranca Parkway	Harvard Avenue to Paseo Westpark	69.7	RW	173	374
83	Bay Tree	Trabuco Road to Roosevelt	57.2	RW	RW	RW
84	Beacon	Ridge Valley to Benchmark	59.0	RW	RW	RW
85	Benchmark (LN Street)	Ridge Valley (O Street) to Bosque	56.7	RW	RW	RW
86	Bison Avenue	SR-73 NB Off-Ramp to California Avenue	69.7	RW	129	278
87	Bonita Canyon Drive	MacArthur Boulevard to SR-73	70.2	77	167	359

Table 6

88	Bonita Canyon Drive	Turtle Ridge to Shady Canyon Drive	68.5	RW	129	278
89	Bonita Canyon Drive	Newport Coast Drive to Turtle Ridge	68.2	RW	122	263
90	Bonita Canyon Drive	SR-73 NB Off-Ramp to Newport Coast Drive	67.9	RW	117	252
91	Bosque	Cadence to Great Park Boulevard	64.8	RW	RW	79
92	Bosque	Irvine Boulevard to Benchmark (LN Street)	63.0	RW	RW	59
93	Bosque	Benchmark to Cadence	63.0	RW	RW	59
94	Bosque	Great Park Boulevard to Beacon	56.9	RW	RW	RW
95	Bosque	Beacon to S 5th Street	55.9	RW	RW	RW
96	Bryan Avenue	Jamboree Road to Market Place	68.9	RW	114	245
97	Bryan Avenue	Market Place to El Camino Real	68.9	RW	114	245
98	Bryan Avenue	Rubicon to Culver Drive	68.9	RW	114	245
99	Bryan Avenue	El Camino Real to Rubicon	68.9	RW	114	245
100	Bryan Avenue	Eastwood to Jeffrey Road	66.3	RW	76	165
101	Bryan Avenue	Westwood to Yale Avenue	66.3	RW	77	165
102	Bryan Avenue	Culver Drive to Westwood	66.4	RW	78	168
103	Bryan Avenue	Yale Avenue to Eastwood	66.0	RW	73	157
104	Cadence	Pusan to Chinon	64.1	RW	RW	71
105	Cadence	Bosque to Pusan	64.2	RW	RW	71
106	Cadence	Ridge Valley (O Street) to Bosque	64.0	RW	RW	69
107	Cadence	Chinon to Merit	59.1	RW	RW	RW
108	Cadence	Merit to Astor	58.6	RW	RW	RW
109	California Avenue	University Drive to Academy Way	66.2	RW	75	161
110	California Avenue	Campus Drive to Harvard Avenue	64.1	RW	RW	118
111	California Avenue	Theory to Bison Avenue	64.0	RW	RW	116
112	Campus Drive	Carlson Avenue to University Drive	73.0	79	171	369
113	Campus Drive	University Drive to Bridge Road	71.7	81	174	374
114	Campus Drive	Jamboree Road to Carlson Avenue	71.3	76	164	353
115	Campus Drive	Stanford Court to Berkeley Avenue	71.0	73	158	341
116	Campus Drive	California Avenue to Culver Drive	70.9	72	155	333
117	Campus Drive	Berkeley Avenue to Cornell	69.9	RW	133	286
118	Campus Drive	Martin to Von Karman Avenue	68.7	RW	110	238

Table 6

119	Campus Drive	Culver Drive to Paseo Montoya (Turtle Rock Drive)	68.6	RW	109	235
120	Campus Drive	Von Karman Avenue to Teller Avenue	68.1	RW	100	216
121	Campus Drive	MacArthur Boulevard to Martin	68.1	RW	100	216
122	Campus Drive	Teller Avenue to Jamboree Road	67.2	RW	88	190
123	Carlson Avenue	Michelson Drive to Campus Drive	67.8	RW	97	208
124	Chinon	Irvine Boulevard to Cadence	58.3	RW	RW	RW
125	Creek Road	Alton Parkway to Barranca Parkway	56.0	RW	RW	RW
126	Culver Drive	Michelson Drive to I-405 SB Off-Ramp	73.7	149	320	690
127	Culver Drive	I-405 SB Off-Ramp to I-405 NB Off Ramp	73.9	152	327	705
128	Culver Drive	I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)	73.9	153	329	709
129	Culver Drive	Scottsdale Drive to I-5 SB Off- Ramp	73.9	152	328	707
130	Culver Drive	I-405 NB Off-Ramp to San Leandro	73.6	147	316	681
131	Culver Drive	San Leandro to Main Street	73.3	140	302	651
132	Culver Drive	Harvard Avenue to University Drive	73.3	139	300	646
133	Culver Drive	Trabuco Road to Farwell Avenue	74.4	156	337	725
134	Culver Drive	Alton Parkway to Barranca Parkway	73.2	137	296	638
135	Culver Drive	Main Street to Alton Parkway	73.1	135	290	626
136	Culver Drive	Warner Avenue to Irvine Center Drive	73.0	133	286	615
137	Culver Drive	Walnut Avenue to Scottsdale Dive	72.9	132	284	612
138	Culver Drive	Barranca Parkway to Warner Avenue	72.8	129	279	601
139	Culver Drive	Shady Canyon Drive to Palo Verde	72.1	86	185	399
140	Culver Drive	Deerfield Avenue to Walnut Avenue	72.6	125	269	580
141	Culver Drive	Sandburg Way to Michelson Drive	72.5	123	266	572
142	Culver Drive	Irvine Center Drive to Deerfield Avenue	72.4	122	262	566
143	Culver Drive	Palo Verde to Campus Drive	71.6	80	172	370
144	Culver Drive	University Drive to Sandburg Way	72.2	117	252	543
145	Culver Drive	Farwell Avenue to Bryan Avenue	73.3	132	284	612
146	Culver Drive	Campus Drive to High School	72.1	116	250	540
147	Culver Drive	High School to Harvard Avenue	72.0	115	248	534
148	Culver Drive	Bryan Avenue to Florence	71.8	111	238	513
149	Culver Drive	Portola Parkway to Settlers	71.1	74	159	342

Table 6

150	Culver Drive	Florence to Irvine Boulevard	71.7	109	235	506
151	Culver Drive	Irvine Boulevard to Viewpark	70.5	91	196	423
152	Culver Drive	Viewpark to Meadowood	70.5	91	195	421
153	Culver Drive	Settlers to Furrow	68.3	RW	104	224
154	Culver Drive	Meadowood to Portola Parkway	69.0	RW	154	333
155	Discovery Drive	Irvine Center Drive to Laguna Canyon Road	63.8	RW	RW	111
156	Discovery Drive	Waterworks Way to Irvine Center Drive	60.7	RW	RW	70
157	East Yale Loop	Alton Parkway to Witherspoon	65.3	RW	65	140
158	East Yale Loop	Osborn Street to Barranca Parkway	65.0	RW	RW	135
159	East Yale Loop	Yale Avenue to Springbrook South	64.3	RW	RW	121
160	East Yale Loop	Springbrook North to Alton Parkway	63.4	RW	RW	105
161	East Yale Loop	Woodspring to Yale Avenue	62.5	RW	RW	92
162	East Yale Loop	Barranca Parkway to Eastshore	62.5	RW	RW	92
163	Eastwood	Bryan Avenue to Monticello	60.5	RW	RW	40
164	Eastwood	Columbus to Bryan Avenue	58.8	RW	RW	RW
165	El Camino Real	Jamboree Road to Alliance (SR-261 Bridge)	67.0	RW	85	183
166	El Camino Real North	El Camino Real to Bryan Avenue	62.4	RW	RW	90
167	Fairbanks	Alton Parkway to Astor	69.7	RW	77	166
168	Fairbanks	Irvine Boulevard to Alton Parkway	66.8	RW	49	107
169	Fairchild Road	MacArthur Boulevard to Jamboree Road	64.0	RW	RW	116
170	Gateway Boulevard	Alton Parkway to Irvine Center Drive	62.8	RW	RW	96
171	Gateway Boulevard	Spectrum Center Drive (Fortune Drive) to Alton Parkway	61.6	RW	RW	80
172	Gateway Boulevard	Irvine Center Drive to Meridian	58.4	RW	RW	RW
173	Great Park Boulevard	Sand Canyon to Ridge Valley	74.1	113	244	525
174	Great Park Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	69.7	RW	129	279
175	Great Park Boulevard (EB)	Bosque to Skyhawk	68.0	RW	60	129
176	Great Park Boulevard (WB)	Bosque to Skyhawk	67.6	RW	56	120
177	Harvard Avenue	University Drive to Michelson Drive	71.8	49	106	229
178	Harvard Avenue	Michelson Drive to Coronado	70.2	64	138	298
179	Harvard Avenue	San Marino to Alton Parkway	70.0	RW	134	289
180	Harvard Avenue	Coronado to Main Street	70.0	63	135	290

Table 6

181	Harvard Avenue	San Carlo to San Marino	69.9	RW	132	284
182	Harvard Avenue	Main Street to San Carlo	69.8	RW	130	281
183	Harvard Avenue	Alton Parkway to San Leon	68.8	RW	111	239
184	Harvard Avenue	San Juan to Barranca Parkway	68.6	RW	109	236
185	Harvard Avenue	San Leon to San Juan	68.6	RW	108	233
186	Harvard Avenue	Irvine Center Drive to Deerfield Avenue	67.4	RW	91	196
187	Harvard Avenue	Deerfield Avenue to Poplar Street	67.4	RW	91	195
188	Harvard Avenue	Barranca Parkway to Warner Avenue	67.9	RW	97	209
189	Harvard Avenue	Bridge Road to University Drive	67.6	RW	93	199
190	Harvard Avenue	Paseo Westpark to Irvine Center Drive	67.7	RW	95	205
191	Harvard Avenue	Poplar Street to Walnut Avenue	68.7	RW	89	191
192	Harvard Avenue	California Avenue to Berkeley Avenue	67.0	RW	85	183
193	Harvard Avenue	Culver Drive to California Avenue	66.9	RW	84	181
194	Harvard Avenue	Berkeley to Bridge Road	67.0	RW	85	183
195	Harvard Avenue	Warner Avenue to Paseo Westpark	66.8	RW	82	178
196	Hicks Canyon Drive	Delamesa to Yale Avenue	58.4	RW	RW	RW
197	Hornet (5th St)	Ridge Valley (O Street) to Bosque	57.5	RW	RW	RW
198	Hubble	Irvine Center Drive to Bunsen	55.7	RW	RW	RW
199	Irvine Boulevard	SR-133 NB Off- Ramp to Ridge Valley (O Street)	72.3	120	258	557
200	Irvine Boulevard	SR-133 SB Off-Ramp to SR-133 NB Off-Ramp	72.2	118	254	547
201	Irvine Boulevard	Sand Canyon to SR-133 SB Off-Ramp	73.1	128	277	596
202	Irvine Boulevard	Merit to Alton	71.6	108	232	500
203	Irvine Boulevard	Journey to Sand Canyon Avenue	71.6	108	232	501
204	Irvine Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	71.2	100	216	466
205	Irvine Boulevard	Pusan Way to Chinon (B Street)	71.0	98	211	455
206	Irvine Boulevard	Palo Lado to Yale Avenue	70.6	92	197	425
207	Irvine Boulevard	Culver Drive to Palo Lado	70.6	92	199	429
208	Irvine Boulevard	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.6	92	198	427
209	Irvine Boulevard	Old Myford Road to Market Place	70.5	91	196	423
210	Irvine Boulevard	Bosque (LY Street) to Modjeska	70.7	93	200	432
211	Irvine Boulevard	Jamboree Road to Old Myford Road	70.5	90	195	419

Table 6

212	Irvine Boulevard	Market Place to SR-261 SB Off-Ramp	70.4	90	194	417
213	Irvine Boulevard	Jeffrey Road to Groveland	70.8	95	205	441
214	Irvine Boulevard	Bake Parkway to Lake Forest Drive	70.9	96	206	444
215	Irvine Boulevard	Independence Way (The Groves)/The Groves to Jeffrey Road	70.5	91	196	421
216	Irvine Boulevard	Chinon (B Street) to Merit	70.5	90	194	418
217	Irvine Boulevard	SR-261 NB Off-Ramp to Central Park	70.2	87	188	405
218	Irvine Boulevard	Pueblo Norte to Independence Way (The Groves)/ Parkwood	70.1	85	183	395
219	Irvine Boulevard	Yale Avenue to Pueblo Norte	70.1	85	183	394
220	Irvine Boulevard	Modjeska to Pusan Way	70.2	87	188	404
221	Irvine Boulevard	Central Park Avenue to Culver Drive	69.6	RW	171	369
222	Irvine Boulevard	Parker to Bake Parkway	69.6	RW	170	366
223	Irvine Boulevard	Alton Parkway to Fairbanks	68.6	RW	146	315
224	Irvine Center Drive	Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp	72.5	118	254	548
225	Irvine Center Drive	Orange Tree to Valley Oak Drive	71.4	105	225	486
226	Irvine Center Drive	I-405 SB Off-Ramp to Research	72.1	111	238	513
227	Irvine Center Drive	Irvine Valley College to Orange Tree	71.3	103	221	476
228	Irvine Center Drive	Fontaine Avenue to Jeffrey Road	71.0	99	212	458
229	Irvine Center Drive	Culver Drive to Deerwood	71.0	98	211	455
230	Irvine Center Drive	Deerwood to Yale Avenue	71.0	97	210	451
231	Irvine Center Drive	Yale Avenue to Fontaine Avenue	70.9	97	208	449
232	Irvine Center Drive	Jeffrey Road to Irvine Valley College	71.1	99	213	458
233	Irvine Center Drive	Alton Parkway to Spectrum	70.4	90	193	416
234	Irvine Center Drive	Spectrum to Pacifica	70.3	88	191	411
235	Irvine Center Drive	Hearthstone to Culver Drive	70.6	93	200	430
236	Irvine Center Drive	Charter to Barranca Parkway	70.2	87	187	402
237	Irvine Center Drive	Jamboree Road to Harvard Avenue	70.3	88	189	407
238	Irvine Center Drive	Pacifica to Entertainment (Enterprise/Fortune)	70.3	88	189	408
239	Irvine Center Drive	Valley Oak Drive to Sand Canyon Avenue	70.0	84	181	391
240	Irvine Center Drive	Harvard Avenue to Hearthstone	70.0	RW	180	387
241	Irvine Center Drive	Research to Hubble	69.8	RW	176	379
242	Irvine Center Drive	Barranca Parkway to Gateway Boulevard	69.4	RW	165	356



Table 6

243	Irvine Center Drive	Bake Parkway to Muller	69.9	RW	179	386
244	Irvine Center Drive	Discovery to Charter	69.3	RW	163	350
245	Irvine Center Drive	Hubble to Bake Parkway	69.7	RW	173	373
246	Irvine Center Drive	Muller to Tesla	69.5	RW	167	359
247	Irvine Center Drive	Sand Canyon Avenue to Odyssey	69.0	RW	155	335
248	Irvine Center Drive	Tesla to Scientific Way	69.2	RW	160	345
249	Irvine Center Drive	Scientific Way to Lake Forest Drive	68.9	RW	154	331
250	Irvine Center Drive	Gateway Boulevard to Alton Parkway	68.3	RW	140	302
251	Irvine Center Drive	Laguna Canyon Road to Discovery	68.2	RW	137	295
252	Irvine Center Drive	Odyssey to Laguna Canyon Road	68.3	RW	140	301
253	Irvine Center Drive (Edinger)	Redhill Avenue to Jamboree Road	70.8	95	204	441
254	Jamboree Road	I-5 SB Off-Ramp to I-5 NB Off-Ramp	74.5	168	362	780
255	Jamboree Road	I-405 SB Off-Ramp to I-405 NB Off Ramp	75.4	183	395	851
256	Jamboree Road	Walnut Avenue to Michelle Drive	73.8	152	327	704
257	Jamboree Road	I-405 NB Off-Ramp to Main Street	76.9	288	619	1335
258	Jamboree Road	Michelle Drive to I-5 SB Off-Ramp	73.6	146	314	677
259	Jamboree Road	Main Street to Kelvin Avenue	76.2	257	554	1194
260	Jamboree Road	Michelson Drive to I-405 SB Off-Ramp	74.2	209	450	969
261	Jamboree Road	Kelvin Avenue to McGaw Avenue	75.8	245	528	1137
262	Jamboree Road	McGaw Avenue to Alton Parkway	75.8	243	523	1126
263	Jamboree Road	Birch Street to Campus Drive	72.6	125	269	581
264	Jamboree Road	Dupont Drive to Michelson Drive	73.5	138	297	639
265	Jamboree Road	Alton Parkway to Beckman	75.4	229	494	1064
266	Jamboree Road	Fairchild Road to Birch Street	73.2	130	281	605
267	Jamboree Road	Beckman to Barranca Parkway	75.2	222	478	1029
268	Jamboree Road	I-5 NB Off-Ramp to El Camino Real	75.1	218	470	1013
269	Jamboree Road	Campus Drive to Dupont Drive	72.7	122	263	566
270	Jamboree Road	El Camino Real to West Drive	75.1	218	470	1013
271	Jamboree Road	West Drive to Bryan Avenue	75.1	218	469	1011
272	Jamboree Road	Bryan Avenue to Irvine Boulevard	74.8	208	449	968
273	Jamboree Road	Koll Center to Fairchild Road	72.5	117	251	541

Table 6

274	Jamboree Road	MacArthur Boulevard to Koll Center	72.5	117	252	543
275	Jamboree Road	Irvine Boulevard to Portola Parkway	70.8	95	206	443
276	Jamboree Road	Warner Avenue to Edinger Avenue	79.1	257	554	1194
277	Jamboree Road	Barranca Parkway to Warner Avenue	78.2	227	488	1052
278	Jamboree Road	Edinger Avenue to Walnut Avenue	77.9	217	467	1006
279	Jeffrey Road	Walnut Avenue to I-5 NB Off-Ramp	71.3	102	220	474
280	Jeffrey Road	I-5 NB Off-Ramp to Roosevelt	72.2	113	242	522
281	Jeffrey Road	Poplar (Meadows) to Walnut Avenue	70.8	95	205	443
282	Jeffrey Road	Alton Parkway to Barranca Parkway	70.5	91	196	422
283	Jeffrey Road	Irvine Center Drive to Poplar (Meadows)	70.6	93	200	430
284	Jeffrey Road	I-405 NB Off-Ramp to Quail Creek	70.5	90	195	419
285	Jeffrey Road	Barranca Parkway to Irvine Valley College	70.4	90	194	418
286	Jeffrey Road	Quail Creek to Alton Parkway	70.5	91	195	420
287	Jeffrey Road	Irvine Valley College to Irvine Center Drive	70.3	88	189	408
288	Jeffrey Road	Trabuco Road to Hideaway	69.7	RW	173	372
289	Jeffrey Road	Hideaway to Bryan Avenue	69.7	RW	172	371
290	Jeffrey Road	Roosevelt to Grove	70.4	84	182	392
291	Jeffrey Road	Grove to Trabuco Road	70.3	84	181	390
292	Jeffrey Road	Bryan Avenue to Irvine Boulevard	68.5	RW	144	310
293	Jeffrey Road	Encore to Portola Parkway	66.1	RW	99	213
294	Jeffrey Road	Irvine Boulevard to Encore	65.6	RW	93	200
295	Jeronimo Road	Goodyear to Bake Parkway	64.8	RW	RW	130
296	Jeronimo Road	Alton Parkway to Goodyear	64.7	RW	RW	128
297	Laguna Canyon Road	Old Laguna Canyon Road to Lake Forest Drive	73.3	140	302	650
298	Laguna Canyon Road	Laguna Canyon Freeway to Quail Hill Parkway	70.0	RW	134	289
299	Laguna Canyon Road	Discovery to Sand Canyon Avenue	68.1	RW	101	217
300	Laguna Canyon Road	I-405 Overcrossing to Pasteur	68.0	RW	79	171
301	Laguna Canyon Road	Irvine Center Drive to Discovery	67.3	RW	89	192
302	Laguna Canyon Road	Quail Hill Parkway to I-405 Overcrossing	68.0	RW	79	171
303	Laguna Canyon Road	Pasteur to Alton Parkway	66.9	RW	84	181
304	Laguna Canyon Road	Waterworks to Irvine Center Drive	66.2	RW	75	162

Table 6

305	Laguna Canyon Road	Alton Parkway to Barranca Parkway	66.0	RW	73	158
306	Laguna Canyon Road	Barranca Parkway to Waterworks	65.6	RW	69	148
307	Lake Forest Drive	Hidden Canyon to Laguna Canyon Road	69.2	RW	119	257
308	Lake Forest Drive	Bake Parkway to Hidden Canyon (Romano)	69.2	RW	119	256
309	Lake Forest Drive	Tesla to Bake Parkway	66.2	RW	102	219
310	Lake Road	Alton Parkway to Barranca Parkway	59.2	RW	RW	RW
311	Lynx	Irvine Boulevard to Astor	53.5	RW	RW	RW
312	MacArthur Boulevard	I-405 SB Off-Ramp to Michelson Drive	76.4	267	576	1241
313	MacArthur Boulevard	Main Street to I-405 NB Off-Ramp	76.5	272	586	1262
314	MacArthur Boulevard	I-405 NB Off-Ramp and I-405 SB Off-Ramp	76.4	267	575	1240
315	MacArthur Boulevard	Jamboree Road to Fairchild Road	69.9	RW	178	382
316	MacArthur Boulevard	Fairchild Road to University Drive	69.8	RW	174	376
317	MacArthur Boulevard	Fitch to Red Hill Avenue	70.5	86	186	401
318	MacArthur Boulevard	Michelson Drive to Douglas	71.8	131	283	610
319	MacArthur Boulevard	Douglas to Campus Drive	71.9	133	286	617
320	MacArthur Boulevard	Skypark to Main Street	69.6	RW	161	347
321	MacArthur Boulevard	Redhill Avenue to Skypark	68.5	RW	143	308
322	MacArthur Boulevard	Birch Street to Jamboree Road	66.8	RW	111	239
323	MacArthur Boulevard	Campus Drive to Birch Street	69.1	RW	187	404
324	Main Street	Gillette Avenue to Von Karman Avenue	70.2	82	177	380
325	Main Street	MacArthur Boulevard to Mercantile	69.9	RW	170	366
326	Main Street	Executive Park to MacArthur Boulevard	68.2	RW	137	294
327	Main Street	Von Karman Avenue to Cartwright	67.8	RW	129	279
328	Main Street	McDurmott to Red Hill Avenue	68.0	RW	133	286
329	Main Street	Red Hill Avenue to Executive Circle	67.9	RW	131	283
330	Main Street	Jamboree Road to Union	67.7	RW	127	274
331	Main Street	Culver Drive to West Yale Loop	67.2	RW	88	190
332	Main Street	Siglo to Jamboree Road	67.4	RW	121	261
333	Main Street	Veneto to Harvard Avenue	67.6	RW	126	271
334	Main Street	Paseo Westpark to Culver Drive	66.4	RW	77	167
335	Main Street	Harvard Avenue to San Mateo	66.3	RW	76	164

Table 6

336	Marine Way	Sand Canyon Avenue to Ridge Valley (O Street)	72.1	69	149	320
337	Marine Way	Alton Parkway to Bake Parkway	69.0	RW	116	250
338	Marine Way	Lynx to Barranca Parkway	69.4	RW	123	264
339	Marine Way	County Access to Treble	65.3	RW	66	142
340	Marine Way	Ridge Valley (O Street) to Skyhawk	67.6	RW	92	199
341	Marine Way	Skyhawk to County Access	64.9	RW	RW	133
342	Marine Way	Barranca Parkway to Alton Parkway	66.3	RW	76	164
343	Marine Way	Treble to Lynx	67.1	RW	86	185
344	McGaw Avenue	Von Karman Avenue to Jamboree Road	63.6	RW	RW	109
345	McGaw Avenue	Red Hill Avenue to Von Karman Avenue	63.6	RW	RW	109
346	McGaw Avenue	Daimler to Red Hill Avenue	62.4	RW	RW	91
347	McGaw Avenue	Jamboree Road to Murphy Avenue	59.2	RW	RW	RW
348	Meadowood	Culver Drive to Canyonwood	59.8	RW	RW	RW
349	Meridian	Spectrum to Alton Parkway	54.9	RW	RW	RW
350	Meridian	Alton Parkway to Gateway Boulevard	54.1	RW	RW	RW
351	Merit	Irvine Boulevard to Cadence	57.3	RW	RW	RW
352	Michelson Drive	Riparian to Harvard Avenue	67.8	RW	97	208
353	Michelson Drive	Almond Tree Lane to Yale Avenue	66.7	RW	49	105
354	Michelson Drive	Von Karman Avenue to Obsidian	67.8	RW	95	206
355	Michelson Drive	Parkside to Culver Drive	66.8	RW	83	178
356	Michelson Drive	Gillman to Seton/Sandburg Way	66.5	RW	47	102
357	Michelson Drive	Carlson to Prince	67.0	RW	101	218
358	Michelson Drive	MacArthur Boulevard to Dupont Drive	67.0	RW	84	182
359	Michelson Drive	Harvard Avenue to Parkside	66.8	RW	83	178
360	Michelson Drive	Bixby to Von Karman Avenue	66.3	RW	76	165
361	Michelson Drive	Jamboree Road to Carlson	69.5	RW	119	256
362	Michelson Drive	Teller to Jamboree Road	69.5	RW	119	256
363	Michelson Drive	Jordan East to University Drive	66.8	RW	39	85
364	Michelson Drive	Culver Drive to Angell	66.1	RW	47	102
365	Modjeska (A Street)	Portola Springs to Irvine Boulevard	71.7	39	83	180
366	Modjeska (A Street)	South of Irvine Boulevard	60.6	RW	RW	41

Table 6

367	Muirlands Boulevard	Bake Parkway to City Limits	67.2	RW	87	188
368	Muirlands Boulevard	Alton Parkway to Sterling	66.3	RW	76	165
369	Muirlands Boulevard	Wrigley to Bake Parkway	66.2	RW	75	162
370	Newport Coast Drive	SR-73 NB Off-Ramp to Turtle Ridge	66.7	RW	81	174
371	Newport Coast Drive	Turtle Crest to Bonita Canyon Drive	65.2	RW	64	139
372	Nightmist	Sand Canyon Avenue to Tulip (Road C)	62.1	RW	RW	86
373	Northwood	Yale Avenue to Savannah	62.4	RW	RW	54
374	Northwood	Goldrush to Yale Avenue	61.3	RW	RW	46
375	Oak Canyon Drive	Valley Oak Drive to Sand Canyon Avenue	67.4	RW	54	117
376	Pacifica	Gateway to Barranca Parkway	64.6	RW	RW	127
377	Pacifica	Alton Parkway to Gateway	63.2	RW	RW	102
378	Pacifica	Irvine Center Drive to Fortune Drive (Spectrum Center Drive)	63.2	RW	RW	102
379	Pacifica	Meridian to Alton Parkway	60.0	RW	RW	RW
380	Park Place	Christamon South to Yale Avenue	57.0	RW	RW	RW
381	Portola Parkway	Bee Canyon Access Road to Sand Canyon Avenue	71.3	76	164	353
382	Portola Parkway	Jeffrey Road to Bee Canyon Access Road	71.3	76	164	353
383	Portola Parkway	Arrowhead to Ridge Valley Parkway	71.3	76	164	353
384	Portola Parkway	Sand Canyon Avenue to Arrowhead	70.9	72	155	334
385	Portola Parkway	Portola Springs to SR-241 SB Off-Ramp	70.0	63	135	291
386	Portola Parkway	Gatepark to Culver Drive	70.3	87	188	405
387	Portola Parkway	ETC-6 (SR-261) NB Off-Ramp to Gatepark	70.2	87	188	404
388	Portola Parkway	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.1	85	184	396
389	Portola Parkway	Jamboree Road to Bellevue	70.1	85	182	393
390	Portola Parkway	Bellevue to ETC-6 (SR-261) SB Off-Ramp	70.0	84	181	391
391	Portola Parkway	Yale Avenue to Jeffrey Road	69.8	RW	177	381
392	Portola Parkway	Culver Drive to Yale Avenue	69.4	RW	165	356
393	Portola Parkway	Silverado to Portola Springs	68.5	RW	107	231
394	Pusan	Irvine Boulevard to Cadence	56.1	RW	RW	RW
395	Quail Hill Parkway	Shady Canyon Drive to Passage	67.6	RW	93	199
396	Quail Hill Parkway	East Knollcrest to Laguna Canyon Road	65.6	RW	69	148
397	Quassar Drive (Spectrum)	Irvine Center Drive to Spectrum Center Drive (Fortune)	54.9	RW	RW	RW

Table 6

398	Red Hill Avenue	MacArthur Boulevard to McGaw Avenue	71.3	102	219	472
399	Red Hill Avenue	I-405 Over Crossing to Main Street	69.9	RW	132	284
400	Red Hill Avenue	Alton Parkway to Deere Avenue	69.9	RW	179	385
401	Red Hill Avenue	McGaw Avenue to Alton Parkway	69.7	RW	174	375
402	Red Hill Avenue	Deere Avenue to Barranca Parkway	69.7	RW	174	374
403	Red Hill Avenue	Skypark East to MacArthur Boulevard	71.0	70	150	323
404	Red Hill Avenue	Main Street to Skypark East	70.4	63	136	294
405	Research Drive	Hubble to Bake Parkway	69.5	RW	124	267
406	Research Drive	Scientific to Lake Forest Drive	67.6	RW	93	200
407	Research Drive	Bake Parkway to Muller	66.5	RW	79	170
408	Research Drive	Irvine Center Drive to Bunsen	65.5	RW	67	144
409	Ridge Valley (O Street)	Irvine Boulevard to Trabuco Road (Great Park Boulevard)	67.4	RW	91	196
410	Ridge Valley (O Street)	Portola Parkway to Irvine Boulevard	66.5	RW	79	170
411	Ridge Valley (O Street)	Trabuco Road (Great Park Boulevard) to Marine Way	66.0	RW	73	157
412	Ridge Valley (O Street)	Ranchland to Portola Parkway	58.1	RW	RW	RW
413	Ridgeline Drive	Concordia East to University Drive	68.6	RW	69	149
414	Ridgeline Drive	Turtle Rock Drive to San Simeon	68.2	RW	65	141
415	Rockfield Avenue	Whatney to McLaren	67.5	RW	92	199
416	Rockfield Avenue	Bake Parkway to Whatney	63.8	RW	RW	112
417	Rockfield Avenue	Thomas to Bake Parkway	62.6	RW	RW	94
418	Roosevelt	Jeffrey Road to Vision	66.1	RW	75	161
419	Roosevelt	Yale Avenue to Van Buren	68.1	RW	48	104
420	Roosevelt	Vision to Bay Tree	65.9	RW	72	155
421	Roosevelt	Nimitz to Jeffrey Road	65.8	RW	70	152
422	Roosevelt	Tulip (Road C) to Sand Canyon Avenue	65.6	RW	69	149
423	Royal Oak	Alton Parkway to Eaglecreek	64.0	RW	RW	56
424	Sand Canyon Avenue	Oak Canyon Drive to Burt Road	71.9	112	241	520
425	Sand Canyon Avenue	Irvine Center Drive to Oak Canyon Drive	71.6	107	232	499
426	Sand Canyon Avenue	I-405 NB Off-Ramp to Alton Parkway	74.4	119	256	551
427	Sand Canyon Avenue	Burt Road to I-5 SB Off-Ramp	72.6	118	255	550
428	Sand Canyon Avenue	Marine to I-5 NB Off-Ramp	74.6	202	434	935

Table 6

429	Sand Canyon Avenue	Trabuco Road to Towngate	71.3	102	220	474
430	Sand Canyon Avenue	Barranca Parkway to Waterworks	70.6	92	199	429
431	Sand Canyon Avenue	I-5 SB Off-Ramp to Marine	73.8	178	384	828
432	Sand Canyon Avenue	Hospital to Barranca Parkway	70.4	89	191	412
433	Sand Canyon Avenue	Nightmist to Roosevelt	73.4	170	366	788
434	Sand Canyon Avenue	I-405 SB Off-Ramp to I-405 NB Off-Ramp	73.4	101	217	469
435	Sand Canyon Avenue	I-5 NB Off-Ramp to Nightmist	73.5	171	368	792
436	Sand Canyon Avenue	Towngate to Irvine Boulevard	70.6	92	198	427
437	Sand Canyon Avenue	Waterworks to Irvine Center Drive	70.0	84	181	390
438	Sand Canyon Avenue	Irvine Boulevard to Portola Parkway	69.3	RW	120	259
439	Sand Canyon Avenue	Roosevelt to Trabuco Road	72.8	153	331	712
440	Sand Canyon Avenue	Alton Parkway to Hospital	70.5	86	185	399
441	Sand Canyon/Shady Canyon	Quail Hill Parkway to I-405 SB Ramps	71.6	76	164	354
442	Scientific Way	Irvine Center Drive to Wald	54.9	RW	RW	RW
443	Shady Canyon Drive	Culver Drive/Bonita Canyon Drive to Cloverfield	68.8	RW	67	145
444	Shady Canyon Drive	Bommer Canyon Road to Sunnyhill	67.3	RW	71	153
445	Skyhawk	Great Park Boulevard to Marine Way	60.2	14	30	64
446	Southwood	Yale Avenue to Colt	60.5	9	19	40
447	Southwood	Challenger to Yale Avenue	60.3	8	18	39
448	Spectrum Center Drive (Fortune Drive)	Pacifica to Quassar Drive (Spectrum )	61.9	18	39	84
449	Spectrum Center Drive (FortuneDrive)	Quassar Drive (Spectrum ) to Gatewayb	62.4	20	42	91
450	Sunnyhill	Shady Canyon Drive to Turtle Rock Drive	57.0	9	18	40
451	Technology Drive	Barranca Parkway to Alton Parkway	69.9	62	133	286
452	Technology Drive	Old Laguna Canyon Road to I-5/SR-133 Undercrossing	67.1	40	87	186
453	Technology Drive	I-5/SR-133 to Barranca Parkway	66.1	34	74	160
454	Technology Drive	Ada to Alton Parkway	59.9	13	29	62
455	Toledo Way	Bake Parkway to City Limits	65.8	33	70	151
456	Toledo Way	Goodyear to Bake Parkway	64.9	28	61	132
457	Toledo Way	Alton Parkway to Parker	64.5	27	58	126
458	Trabuco Road	Keystone to Sand Canyon Avenue	67.0	39	85	183
459	Trabuco Road	Jeffrey Road to Keystone	66.9	39	84	181

Table 6

460	Trabuco Road	Culver Drive to I-5 NB Off-Ramp	66.6	37	80	173
461	Trabuco Road	Monroe to Yale Avenue	66.5	37	79	170
462	Trabuco Road	I-5 NB Off-Ramp to Monroe	66.5	37	79	170
463	Trabuco Road	Yale Avenue to Remington	66.0	34	72	156
464	Trabuco Road	Remington to Jeffrey Road	66.0	34	72	156
465	Turtle Ridge Drive	Federation Way to Bonita Canyon	68.8	52	112	241
466	Turtle Rock Drive	Ridgeline to Willowleaf	67.5	26	55	119
467	Turtle Rock Drive	Silkwood to Sunnyhill	67.4	25	54	116
468	Turtle Rock Drive	Canyon Park to Ridgeline	66.8	23	50	107
469	Turtle Rock Drive	Sunnyhill to Southernwood	64.0	15	32	69
470	Turtle Rock Drive	Campus Drive to Hillgate	64.0	25	54	116
471	Turtle Rock Drive	Paseo Segovia to Campus Drive	65.4	20	43	92
472	University Drive	Golden Glow to Yale Avenue	72.6	94	202	435
473	University Drive	Ridgeline to Michelson Drive	72.3	107	231	497
474	University Drive	Culver Drive to Golden Glow	72.5	92	198	427
475	University Drive	Yale Avenue to Ridgeline	72.2	87	188	404
476	University Drive	Michelson Drive to I-405 SB Off-Ramp	72.4	122	262	564
477	University Drive	Mesa to Campus Drive	74.2	115	247	532
478	University Drive	MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	74.2	115	247	533
479	University Drive	California Avenue to Mesa	74.1	113	243	523
480	University Drive	Campus Drive to Harvard Avenue	70.3	88	190	409
481	University Drive	SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	71.3	61	132	284
482	University Drive	SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps	70.0	84	180	389
483	University Drive	San Joaquin to Culver Drive	69.4	76	165	354
484	University Drive	Harvard Avenue to San Joaquin	69.4	76	164	353
485	Valley Oak Drive	Hawkcreek to Barranca Parkway	68.0	46	100	215
486	Valley Oak Drive	Irvine Center Drive to Oak Canyon Drive	67.6	34	74	160
487	Valley Oak Drive	Barranca Parkway to Irvine Center Drive	65.7	32	70	151
488	Valley Oak Drive	Alton Parkway to Hawkcreek	65.0	29	62	134
489	Von Karman Avenue	Marriott to Morse Avenue	70.6	69	148	318
490	Von Karman Avenue	Michelson Drive to Quartz	70.4	66	143	308



Table 6

491	Von Karman Avenue	McGaw Avenue to Alton Parkway	70.1	64	137	296
492	Von Karman Avenue	Alton Parkway to Barranca Parkway	69.7	72	155	334
493	Von Karman Avenue	Main Street to Anchor	69.9	62	134	288
494	Von Karman Avenue	Anchor to McGaw Avenue	69.9	61	132	284
495	Von Karman Avenue	Morse to Main Street	69.9	61	132	285
496	Von Karman Avenue	Martin to Dupont Drive	69.2	55	119	257
497	Von Karman Avenue	Campus Drive to Martin	69.2	55	118	255
498	Von Karman Avenue	Dupont Drive to Michelson Drive	69.2	55	119	255
499	Walnut Avenue	Jeffrey Road to I-5 SB Off-Ramp	70.5	68	146	315
500	Walnut Avenue	Myford Road to Jamboree Road SB Off-Ramp	68.9	53	114	245
501	Walnut Avenue	The Mall Street to Culver Drive	68.5	49	106	229
502	Walnut Avenue	Harvard Avenue to The Mall Street	68.4	49	106	228
503	Walnut Avenue	Franciscan Street to Ravenwood Street	68.1	47	101	217
504	Walnut Avenue	Ravenwood Street to Yale Avenue	68.1	47	101	218
505	Walnut Avenue	Culver Drive to Franciscan Street	68.1	47	101	217
506	Walnut Avenue	Peters Canyon Road to Harvard Avenue	67.6	58	125	270
507	Walnut Avenue	Jamboree Road NB Off-Ramp to Peters Canyon Road	67.5	57	123	266
508	Walnut Avenue	Yale Avenue to Kazan Street	67.0	39	84	182
509	Walnut Avenue	Wisteria to Jeffrey Road	67.0	39	85	183
510	Warner Avenue	Jamboree Road SB Off-ramp to Construction North	70.1	63	136	293
511	Warner Avenue	Construction North to Harvard Avenue	68.4	49	105	227
512	Warner Avenue	Harvard Avenue to Paseo Westpark	66.8	38	82	177
513	Warner Avenue	Santa Ynez to Culver Drive	65.6	32	69	149
514	Warner Avenue	Culver Drive to West Yale Loop	65.1	30	64	137
515	West Yale Loop	Alton Parkway to Blue Lake North	64.0	25	53	115
516	West Yale Loop	Eagle Run to Main Street	63.8	24	52	112
517	West Yale Loop	Thunder Run to Yale Avenue	63.6	23	50	109
518	West Yale Loop	Main Street to Timber Run	62.9	21	45	98
519	West Yale Loop	Yale Avenue to Shorebird	62.1	19	40	87
520	West Yale Loop	Warner Avenue to Stonecreek South	62.4	19	42	90
521	West Yale Loop	Barranca Parkway to Alton Parkway	62.4	19	42	90

Table 6

522	West Yale Loop	Stonecreek North to Warner Avenue	62.0	18	39	85
523	West Yale Loop	Birdsong to Barranca Parkway	62.2	19	41	88
524	Westwood	Yorktown to Bryan Avenue	63.6	14	30	65
525	Westwood	Bryan Avenue to Leaf	61.6	10	22	48
526	Yale Avenue	Deerfield Avenue to Winvale Avenue	68.6	30	65	141
527	Yale Avenue	Hicks Canyon Drive to Meadowood	67.4	25	54	116
528	Yale Avenue	Walnut Avenue to Roosevelt	70.9	46	100	215
529	Yale Avenue	Roosevelt to Trabuco Road	67.1	40	86	185
530	Yale Avenue	Irvine Center Drive to Deerfield Avenue	67.0	40	85	183
531	Yale Avenue	West Yale Loop to Irvine Center Drive	65.8	33	70	152
532	Yale Avenue	Winvale Avenue to Karen Ann Lane	65.7	33	70	151
533	Yale Avenue	Karen Ann Lane to Walnut Avenue	65.7	33	70	151
534	Yale Avenue	Trabuco Road to Southwood	65.6	32	69	148
535	Yale Avenue	Southwood to Bryan Avenue	65.6	32	68	147
536	Yale Avenue	Northwood to Irvine Boulevard	65.3	30	65	141
537	Yale Avenue	Bryan Avenue to Monticello	65.2	30	65	140
538	Yale Avenue	Irvine Boulevard to Park Place	64.3	26	56	121
539	Yale Avenue	University Drive to Royce	63.0	17	37	80
540	Yale Court	Arborwood to Portola Parkway	60.3	8	18	39

<sup>1</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest receiving land use.  
 "RW" = Location of the respective noise contour falls within the right-of-way of the road.

Table 7

Table 7: Conservative Plan Conditions Noise Contours

ID	Road	Segment	CNEL at Nearest Receiving Land Use (dBA) <sup>1</sup>	Distance to Contour from Centerline (Feet)		
				70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Ada	Barranca Parway to Marine Way	70.8	42	91	196
2	Ada	Alton Parkway to Barranca Parkway	69.3	RW	120	259
3	Alton Parkway	Enterprise to I-5 NB Off-Ramp	74.1	159	342	736
4	Alton Parkway	I-5 NB Off-Ramp to Technology Drive West	74.8	167	360	775
5	Alton Parkway	East Yale Loop to Jeffrey Road	71.8	83	178	383
6	Alton Parkway	Gateway Boulevard to Enterprise	72.0	114	245	529
7	Alton Parkway	Jeffrey Road to Royal Oak	70.9	72	154	333
8	Alton Parkway	Daimler Street to Red Hill Avenue	70.7	69	149	322
9	Alton Parkway	Culver Drive to West Yale Loop	70.7	69	149	322
10	Alton Parkway	West Yale Loop to Lake Road	70.7	69	149	321
11	Alton Parkway	Technology Drive West to Ada	72.6	120	258	556
12	Alton Parkway	Creek Road to East Yale Loop	70.6	69	148	319
13	Alton Parkway	Red Hill Avenue to Von Karman Avenue	70.5	68	146	314
14	Alton Parkway	Lake Road to Creek Road	70.4	66	143	308
15	Alton Parkway	Telemetry to Banting	70.4	67	144	309
16	Alton Parkway	Irvine Boulevard to Commercentre	70.8	95	205	441
17	Alton Parkway	Jenner to Telemetry	70.4	66	142	306
18	Alton Parkway	Irvine Center Drive to Gateway Boulevard	71.2	102	219	471
19	Alton Parkway	Sand Canyon Avenue to Hospital	73.7	105	226	488
20	Alton Parkway	Laguna Canyon Road to Jenner	70.3	65	140	302
21	Alton Parkway	Technology Drive East to Barranca Pkwy/Muirlands Blvd	71.2	101	217	468
22	Alton Parkway	Royal Oak to Valley Oak Drive	70.1	63	136	294
23	Alton Parkway	Banting to Pacifica	70.0	63	135	291
24	Alton Parkway	Barranca Pkwy/Muirlands Blvd to Jeronimo Road	70.9	97	209	450
25	Alton Parkway	Ada to Technology Drive East	70.7	93	201	432

Table 7

26	Alton Parkway	Von Karman Avenue to Jamboree Road	69.7	RW	130	279
27	Alton Parkway	Jeronimo Road to Hughes	69.9	RW	178	383
28	Alton Parkway	Hughes to Morgan	69.8	RW	174	376
29	Alton Parkway	Morgan to Toledo Way	69.1	RW	157	338
30	Alton Parkway	San Marino to Culver Drive	69.2	RW	159	343
31	Alton Parkway	Jamboree Road to Murphy Avenue	69.0	RW	156	336
32	Alton Parkway	Hospital to Laguna Canyon Road	72.0	82	177	381
33	Alton Parkway	Valley Oak Drive to Sand Canyon Avenue	71.8	80	171	369
34	Alton Parkway	Murphy Avenue to Harvard Avenue	68.8	RW	151	326
35	Alton Parkway	Foster to Irvine Boulevard	68.7	RW	148	319
36	Alton Parkway	Fairbanks to Foster	68.5	RW	144	311
37	Alton Parkway	Toledo Way to Berteza	68.4	RW	142	306
38	Alton Parkway	Pacifica to Meridian	71.7	77	167	359
39	Alton Parkway	Berteza to Fairbanks	68.3	RW	140	301
40	Alton Parkway	Meridian to Irvine Center Drive	68.3	RW	138	298
41	Alton Parkway	Paseo Westpark to San Marino	68.3	RW	139	298
42	Alton Parkway	Harvard Avenue to Paseo Westpark	67.7	RW	127	274
43	Astor	Lynx to Fairbanks	67.1	RW	52	111
44	Astor	Cadence to Lynx	65.9	RW	43	92
45	Bake Parkway	I-5 NB Off-Ramp to Rockfield Boulevard	76.7	281	606	1306
46	Bake Parkway	Muirlands Boulevard to Jeronimo Road	73.0	134	288	620
47	Bake Parkway	Rockfield Boulevard to Muirlands Boulevard	75.1	219	472	1017
48	Bake Parkway	Jeronimo Road to Toledo Way	72.1	116	251	540
49	Bake Parkway	Toledo Way to Cromwell	71.7	109	235	507
50	Bake Parkway	Cromwell to Irvine Boulevard	71.6	107	230	496
51	Bake Parkway	Research Drive to I-5 SB Off-Ramp	69.6	RW	171	369
52	Bake Parkway	Irvine Center Drive to Research Drive	64.9	RW	RW	178
53	Bake Parkway	Lake Forest Drive to Irvine Center Drive	63.4	RW	RW	141
54	Banting	Alton Parkway to Barranca Parkway	60.3	RW	RW	65
55	Barranca Parkway	Pacifica to Irvine Center Drive	73.3	104	224	482
56	Barranca Parkway	Banting to Pacifica	72.8	96	207	446

Table 7

57	Barranca Parkway	I-5 HOV Ramp to Technology Drive West	73.0	99	213	459
58	Barranca Parkway	Technology Drive West to Ada	72.7	94	203	438
59	Barranca Parkway	Irvine Center Drive to I-5 HOV Ramp	72.6	93	201	433
60	Barranca Parkway	Culver Drive to West Yale Loop	72.3	89	191	411
61	Barranca Parkway	East Yale Loop to Jeffrey Road	72.2	88	189	407
62	Barranca Parkway	West Yale Loop to Lake Road	72.1	86	185	398
63	Barranca Parkway	Ada to Alton Parkway	72.1	87	187	403
64	Barranca Parkway	Lake Road to Creek Road	71.8	82	177	382
65	Barranca Parkway	Red Hill Avenue to Armstrong Avenue	74.7	207	447	962
66	Barranca Parkway	Discovery/Herchel to Banting	71.6	80	173	373
67	Barranca Parkway	Lyon to East Yale Loop	71.6	79	171	369
68	Barranca Parkway	Creek Road to Lyon	71.5	79	169	365
69	Barranca Parkway	Von Karman Avenue to Jamboree Road	72.8	123	264	569
70	Barranca Parkway	Sand Canyon Avenue to Laguna Canyon Road	71.1	74	160	344
71	Barranca Parkway	Armstrong Avenue to Von Karman Avenue	72.5	117	251	541
72	Barranca Parkway	Valley Oak Drive to Sand Canyon Avenue	70.8	70	152	326
73	Barranca Parkway	Jamboree Road to Construction Circle	71.2	100	216	466
74	Barranca Parkway	Santa Rosa to Culver Drive	71.0	98	211	454
75	Barranca Parkway	FedEx to Discovery/Herchel	70.5	68	146	314
76	Barranca Parkway	Jeffrey Road to Valley Oak Drive	70.4	66	143	308
77	Barranca Parkway	Laguna Canyon Road to FedEx	70.4	66	143	308
78	Barranca Parkway	Pullman Street to Red Hill Avenue	73.7	175	378	814
79	Barranca Parkway	Construction Circle to Fire Station	70.6	92	199	429
80	Barranca Parkway	Fire Station to Harvard Avenue	70.6	92	199	429
81	Barranca Parkway	Paseo Westpark to Santa Rosa	70.6	92	197	425
82	Barranca Parkway	Harvard Avenue to Paseo Westpark	70.2	87	187	403
83	Bay Tree	Trabuco Road to Roosevelt	57.1	RW	RW	RW
84	Beacon	Ridge Valley to Benchmark	59.7	RW	RW	RW
85	Benchmark (LN Street)	Ridge Valley (O Street) to Bosque	56.5	RW	RW	RW
86	Bison Avenue	SR-73 NB Off-Ramp to California Avenue	69.6	RW	127	274
87	Bonita Canyon Drive	MacArthur Boulevard to SR-73	70.3	78	169	364

Table 7

88	Bonita Canyon Drive	Turtle Ridge to Shady Canyon Drive	68.6	RW	130	280
89	Bonita Canyon Drive	Newport Coast Drive to Turtle Ridge	68.2	RW	123	265
90	Bonita Canyon Drive	SR-73 NB Off-Ramp to Newport Coast Drive	68.0	RW	119	257
91	Bosque	Cadence to Great Park Boulevard	65.2	RW	39	83
92	Bosque	Irvine Boulevard to Benchmark (LN Street)	63.6	RW	RW	65
93	Bosque	Benchmark to Cadence	63.2	RW	RW	61
94	Bosque	Great Park Boulevard to Beacon	56.8	RW	RW	RW
95	Bosque	Beacon to S 5th Street	56.2	RW	RW	RW
96	Bryan Avenue	Jamboree Road to Market Place	69.0	RW	116	250
97	Bryan Avenue	Market Place to El Camino Real	68.9	RW	114	246
98	Bryan Avenue	Rubicon to Culver Drive	68.8	RW	113	242
99	Bryan Avenue	El Camino Real to Rubicon	68.8	RW	112	241
100	Bryan Avenue	Eastwood to Jeffrey Road	67.1	RW	87	187
101	Bryan Avenue	Westwood to Yale Avenue	66.8	RW	82	176
102	Bryan Avenue	Culver Drive to Westwood	66.7	RW	81	174
103	Bryan Avenue	Yale Avenue to Eastwood	66.7	RW	81	174
104	Cadence	Pusan to Chinon	65.6	RW	41	89
105	Cadence	Bosque to Pusan	65.3	RW	39	85
106	Cadence	Ridge Valley (O Street) to Bosque	64.0	RW	RW	70
107	Cadence	Chinon to Merit	62.3	RW	RW	54
108	Cadence	Merit to Astor	59.4	RW	RW	RW
109	California Avenue	University Drive to Academy Way	66.2	RW	76	163
110	California Avenue	Campus Drive to Harvard Avenue	64.2	RW	RW	119
111	California Avenue	Theory to Bison Avenue	63.9	RW	RW	113
112	Campus Drive	Carlson Avenue to University Drive	73.2	82	177	382
113	Campus Drive	University Drive to Bridge Road	71.8	83	178	384
114	Campus Drive	Jamboree Road to Carlson Avenue	71.5	79	170	366
115	Campus Drive	Stanford Court to Berkeley Avenue	71.1	74	159	343
116	Campus Drive	California Avenue to Culver Drive	70.9	72	155	334
117	Campus Drive	Berkeley Avenue to Cornell	70.0	RW	135	290
118	Campus Drive	Martin to Von Karman Avenue	69.1	RW	117	251

Table 7

119	Campus Drive	Culver Drive to Paseo Montoya (Turtle Rock Drive)	68.7	RW	111	239
120	Campus Drive	Von Karman Avenue to Teller Avenue	68.4	RW	105	227
121	Campus Drive	MacArthur Boulevard to Martin	68.2	RW	103	221
122	Campus Drive	Teller Avenue to Jamboree Road	67.5	RW	92	198
123	Carlson Avenue	Michelson Drive to Campus Drive	67.9	RW	98	210
124	Chinon	Irvine Boulevard to Cadence	58.8	RW	RW	RW
125	Creek Road	Alton Parkway to Barranca Parkway	56.3	RW	RW	RW
126	Culver Drive	Michelson Drive to I-405 SB Off-Ramp	74.0	154	332	715
127	Culver Drive	I-405 SB Off-Ramp to I-405 NB Off Ramp	73.9	152	327	705
128	Culver Drive	I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)	73.9	154	331	713
129	Culver Drive	Scottsdale Drive to I-5 SB Off- Ramp	73.8	151	325	701
130	Culver Drive	I-405 NB Off-Ramp to San Leandro	73.6	146	314	677
131	Culver Drive	San Leandro to Main Street	73.3	140	301	649
132	Culver Drive	Harvard Avenue to University Drive	73.4	141	303	652
133	Culver Drive	Trabuco Road to Farwell Avenue	74.2	153	329	709
134	Culver Drive	Alton Parkway to Barranca Parkway	73.2	137	296	637
135	Culver Drive	Main Street to Alton Parkway	73.1	134	289	623
136	Culver Drive	Warner Avenue to Irvine Center Drive	73.0	133	286	615
137	Culver Drive	Walnut Avenue to Scottsdale Dive	72.9	130	281	605
138	Culver Drive	Barranca Parkway to Warner Avenue	72.8	130	280	604
139	Culver Drive	Shady Canyon Drive to Palo Verde	72.0	84	182	392
140	Culver Drive	Deerfield Avenue to Walnut Avenue	72.5	124	267	574
141	Culver Drive	Sandburg Way to Michelson Drive	72.5	124	267	575
142	Culver Drive	Irvine Center Drive to Deerfield Avenue	72.4	122	262	565
143	Culver Drive	Palo Verde to Campus Drive	71.6	80	172	370
144	Culver Drive	University Drive to Sandburg Way	72.2	118	253	546
145	Culver Drive	Farwell Avenue to Bryan Avenue	73.2	130	281	605
146	Culver Drive	Campus Drive to High School	72.1	116	249	536
147	Culver Drive	High School to Harvard Avenue	72.0	114	246	530
148	Culver Drive	Bryan Avenue to Florence	71.8	110	238	512
149	Culver Drive	Portola Parkway to Settlers	71.2	75	162	348

Table 7

150	Culver Drive	Florence to Irvine Boulevard	71.7	109	234	504
151	Culver Drive	Irvine Boulevard to Viewpark	70.5	91	196	422
152	Culver Drive	Viewpark to Meadowood	70.4	89	191	413
153	Culver Drive	Settlers to Furrow	68.5	RW	107	230
154	Culver Drive	Meadowood to Portola Parkway	69.0	RW	154	332
155	Discovery Drive	Irvine Center Drive to Laguna Canyon Road	65.5	RW	68	146
156	Discovery Drive	Waterworks Way to Irvine Center Drive	63.6	RW	RW	109
157	East Yale Loop	Alton Parkway to Witherspoon	65.6	RW	68	147
158	East Yale Loop	Osborn Street to Barranca Parkway	65.4	RW	66	143
159	East Yale Loop	Yale Avenue to Springbrook South	65.0	RW	63	135
160	East Yale Loop	Springbrook North to Alton Parkway	63.6	RW	RW	108
161	East Yale Loop	Woodspring to Yale Avenue	62.8	RW	RW	97
162	East Yale Loop	Barranca Parkway to Eastshore	62.4	RW	RW	90
163	Eastwood	Bryan Avenue to Monticello	60.8	RW	RW	43
164	Eastwood	Columbus to Bryan Avenue	58.8	RW	RW	RW
165	El Camino Real	Jamboree Road to Alliance (SR-261 Bridge)	67.1	RW	87	187
166	El Camino Real North	El Camino Real to Bryan Avenue	62.4	RW	RW	91
167	Fairbanks	Alton Parkway to Astor	69.8	RW	79	170
168	Fairbanks	Irvine Boulevard to Alton Parkway	66.9	RW	50	108
169	Fairchild Road	MacArthur Boulevard to Jamboree Road	64.0	RW	RW	116
170	Gateway Boulevard	Alton Parkway to Irvine Center Drive	63.5	RW	RW	108
171	Gateway Boulevard	Spectrum Center Drive (Fortune Drive) to Alton Parkway	62.3	RW	RW	88
172	Gateway Boulevard	Irvine Center Drive to Meridian	59.2	RW	RW	RW
173	Great Park Boulevard	Sand Canyon to Ridge Valley	74.6	121	260	561
174	Great Park Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	70.3	66	142	305
175	Great Park Boulevard (EB)	Bosque to Skyhawk	69.0	RW	69	150
176	Great Park Boulevard (WB)	Bosque to Skyhawk	68.4	RW	63	136
177	Harvard Avenue	University Drive to Michelson Drive	72.0	51	110	237
178	Harvard Avenue	Michelson Drive to Coronado	70.4	67	144	311
179	Harvard Avenue	San Marino to Alton Parkway	70.2	64	138	298
180	Harvard Avenue	Coronado to Main Street	70.1	64	137	296



Table 7

181	Harvard Avenue	San Carlo to San Marino	70.1	63	136	293
182	Harvard Avenue	Main Street to San Carlo	70.0	RW	134	290
183	Harvard Avenue	Alton Parkway to San Leon	68.8	RW	111	239
184	Harvard Avenue	San Juan to Barranca Parkway	68.8	RW	111	239
185	Harvard Avenue	San Leon to San Juan	68.6	RW	108	233
186	Harvard Avenue	Irvine Center Drive to Deerfield Avenue	67.5	RW	92	198
187	Harvard Avenue	Deerfield Avenue to Poplar Street	67.4	RW	91	195
188	Harvard Avenue	Barranca Parkway to Warner Avenue	67.9	RW	97	209
189	Harvard Avenue	Bridge Road to University Drive	67.9	RW	97	209
190	Harvard Avenue	Paseo Westpark to Irvine Center Drive	67.8	RW	97	208
191	Harvard Avenue	Poplar Street to Walnut Avenue	68.8	RW	90	194
192	Harvard Avenue	California Avenue to Berkeley Avenue	67.4	RW	90	193
193	Harvard Avenue	Culver Drive to California Avenue	67.3	RW	89	191
194	Harvard Avenue	Berkeley to Bridge Road	67.2	RW	87	187
195	Harvard Avenue	Warner Avenue to Paseo Westpark	66.7	RW	82	176
196	Hicks Canyon Drive	Delamesa to Yale Avenue	58.2	RW	RW	RW
197	Hornet (5th St)	Ridge Valley (O Street) to Bosque	57.5	RW	RW	RW
198	Hubble	Irvine Center Drive to Bunsen	55.9	RW	RW	RW
199	Irvine Boulevard	SR-133 NB Off- Ramp to Ridge Valley (O Street)	72.2	118	255	549
200	Irvine Boulevard	SR-133 SB Off-Ramp to SR-133 NB Off-Ramp	72.2	117	253	545
201	Irvine Boulevard	Sand Canyon to SR-133 SB Off-Ramp	73.0	127	273	587
202	Irvine Boulevard	Merit to Alton	71.6	108	232	500
203	Irvine Boulevard	Journey to Sand Canyon Avenue	71.6	107	230	496
204	Irvine Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	71.1	100	215	464
205	Irvine Boulevard	Pusan Way to Chinon (B Street)	71.0	98	211	455
206	Irvine Boulevard	Palo Lado to Yale Avenue	71.2	102	219	471
207	Irvine Boulevard	Culver Drive to Palo Lado	71.2	101	217	468
208	Irvine Boulevard	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	71.1	99	213	459
209	Irvine Boulevard	Old Myford Road to Market Place	71.1	99	214	461
210	Irvine Boulevard	Bosque (LY Street) to Modjeska	71.1	100	216	465
211	Irvine Boulevard	Jamboree Road to Old Myford Road	71.0	98	211	455

Table 7

212	Irvine Boulevard	Market Place to SR-261 SB Off-Ramp	71.0	98	210	453
213	Irvine Boulevard	Jeffrey Road to Groveland	70.9	96	208	448
214	Irvine Boulevard	Bake Parkway to Lake Forest Drive	70.5	91	196	423
215	Irvine Boulevard	Independence Way (The Groves)/The Groves to Jeffrey Road	70.7	94	202	434
216	Irvine Boulevard	Chinon (B Street) to Merit	70.5	90	194	418
217	Irvine Boulevard	SR-261 NB Off-Ramp to Central Park	70.6	92	198	427
218	Irvine Boulevard	Pueblo Norte to Independence Way (The Groves)/ Parkwood	70.5	90	194	419
219	Irvine Boulevard	Yale Avenue to Pueblo Norte	70.4	90	194	417
220	Irvine Boulevard	Modjeska to Pusan Way	70.2	87	188	404
221	Irvine Boulevard	Central Park Avenue to Culver Drive	70.0	84	180	388
222	Irvine Boulevard	Parker to Bake Parkway	69.6	RW	171	368
223	Irvine Boulevard	Alton Parkway to Fairbanks	68.6	RW	146	315
224	Irvine Center Drive	Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp	72.7	121	260	560
225	Irvine Center Drive	Orange Tree to Valley Oak Drive	72.0	114	246	530
226	Irvine Center Drive	I-405 SB Off-Ramp to Research	72.2	112	241	520
227	Irvine Center Drive	Irvine Valley College to Orange Tree	71.9	113	243	523
228	Irvine Center Drive	Fontaine Avenue to Jeffrey Road	71.7	108	234	503
229	Irvine Center Drive	Culver Drive to Deerwood	71.6	108	232	500
230	Irvine Center Drive	Deerwood to Yale Avenue	71.6	107	231	497
231	Irvine Center Drive	Yale Avenue to Fontaine Avenue	71.6	108	232	500
232	Irvine Center Drive	Jeffrey Road to Irvine Valley College	71.5	106	228	492
233	Irvine Center Drive	Alton Parkway to Spectrum	71.3	103	221	476
234	Irvine Center Drive	Spectrum to Pacifica	71.3	102	219	472
235	Irvine Center Drive	Hearthstone to Culver Drive	71.0	98	211	454
236	Irvine Center Drive	Charter to Barranca Parkway	70.9	97	208	449
237	Irvine Center Drive	Jamboree Road to Harvard Avenue	70.6	92	197	425
238	Irvine Center Drive	Pacifica to Entertainment (Enterprise/Fortune)	70.7	93	201	433
239	Irvine Center Drive	Valley Oak Drive to Sand Canyon Avenue	70.7	93	201	433
240	Irvine Center Drive	Harvard Avenue to Hearthstone	70.3	88	191	410
241	Irvine Center Drive	Research to Hubble	69.8	RW	175	376
242	Irvine Center Drive	Barranca Parkway to Gateway Boulevard	70.1	85	184	396

Table 7

243	Irvine Center Drive	Bake Parkway to Muller	69.7	RW	173	373
244	Irvine Center Drive	Discovery to Charter	70.2	87	186	402
245	Irvine Center Drive	Hubble to Bake Parkway	69.5	RW	167	361
246	Irvine Center Drive	Muller to Tesla	69.3	RW	162	350
247	Irvine Center Drive	Sand Canyon Avenue to Odyssey	69.4	RW	165	355
248	Irvine Center Drive	Tesla to Scientific Way	68.9	RW	153	329
249	Irvine Center Drive	Scientific Way to Lake Forest Drive	68.7	RW	148	319
250	Irvine Center Drive	Gateway Boulevard to Alton Parkway	68.8	RW	151	325
251	Irvine Center Drive	Laguna Canyon Road to Discovery	68.8	RW	151	326
252	Irvine Center Drive	Odyssey to Laguna Canyon Road	68.8	RW	151	326
253	Irvine Center Drive (Edinger)	Redhill Avenue to Jamboree Road	71.0	98	211	454
254	Jamboree Road	I-5 SB Off-Ramp to I-5 NB Off-Ramp	74.5	168	362	780
255	Jamboree Road	I-405 SB Off-Ramp to I-405 NB Off Ramp	75.6	190	409	881
256	Jamboree Road	Walnut Avenue to Michelle Drive	73.9	153	329	709
257	Jamboree Road	I-405 NB Off-Ramp to Main Street	77.0	293	631	1359
258	Jamboree Road	Michelle Drive to I-5 SB Off-Ramp	73.6	146	314	677
259	Jamboree Road	Main Street to Kelvin Avenue	76.4	266	573	1235
260	Jamboree Road	Michelson Drive to I-405 SB Off-Ramp	74.4	216	466	1003
261	Jamboree Road	Kelvin Avenue to McGaw Avenue	76.0	253	545	1174
262	Jamboree Road	McGaw Avenue to Alton Parkway	76.0	251	540	1164
263	Jamboree Road	Birch Street to Campus Drive	73.0	134	288	621
264	Jamboree Road	Dupont Drive to Michelson Drive	73.9	146	316	680
265	Jamboree Road	Alton Parkway to Beckman	75.6	236	508	1094
266	Jamboree Road	Fairchild Road to Birch Street	73.5	138	297	640
267	Jamboree Road	Beckman to Barranca Parkway	75.3	224	483	1040
268	Jamboree Road	I-5 NB Off-Ramp to El Camino Real	75.1	218	470	1013
269	Jamboree Road	Campus Drive to Dupont Drive	73.2	130	280	603
270	Jamboree Road	El Camino Real to West Drive	75.0	214	461	993
271	Jamboree Road	West Drive to Bryan Avenue	74.9	214	461	992
272	Jamboree Road	Bryan Avenue to Irvine Boulevard	74.6	204	438	945
273	Jamboree Road	Koll Center to Fairchild Road	72.8	124	266	574

Table 7

274	Jamboree Road	MacArthur Boulevard to Koll Center	72.8	123	265	571
275	Jamboree Road	Irvine Boulevard to Portola Parkway	70.7	94	202	434
276	Jamboree Road	Warner Avenue to Edinger Avenue	79.2	261	563	1212
277	Jamboree Road	Barranca Parkway to Warner Avenue	78.3	230	495	1066
278	Jamboree Road	Edinger Avenue to Walnut Avenue	78.0	218	469	1010
279	Jeffrey Road	Walnut Avenue to I-5 NB Off-Ramp	71.4	104	224	483
280	Jeffrey Road	I-5 NB Off-Ramp to Roosevelt	72.3	114	245	529
281	Jeffrey Road	Poplar (Meadows) to Walnut Avenue	70.9	97	209	450
282	Jeffrey Road	Alton Parkway to Barranca Parkway	70.9	97	209	450
283	Jeffrey Road	Irvine Center Drive to Poplar (Meadows)	70.7	94	203	437
284	Jeffrey Road	I-405 NB Off-Ramp to Quail Creek	70.9	97	209	450
285	Jeffrey Road	Barranca Parkway to Irvine Valley College	70.7	93	201	434
286	Jeffrey Road	Quail Creek to Alton Parkway	70.8	95	204	439
287	Jeffrey Road	Irvine Valley College to Irvine Center Drive	70.5	90	194	418
288	Jeffrey Road	Trabuco Road to Hideaway	69.6	RW	171	369
289	Jeffrey Road	Hideaway to Bryan Avenue	69.6	RW	171	369
290	Jeffrey Road	Roosevelt to Grove	70.4	85	184	396
291	Jeffrey Road	Grove to Trabuco Road	70.2	82	177	382
292	Jeffrey Road	Bryan Avenue to Irvine Boulevard	68.5	RW	143	309
293	Jeffrey Road	Encore to Portola Parkway	65.8	RW	94	203
294	Jeffrey Road	Irvine Boulevard to Encore	65.5	RW	90	195
295	Jeronimo Road	Goodyear to Bake Parkway	64.6	RW	RW	127
296	Jeronimo Road	Alton Parkway to Goodyear	64.3	RW	RW	121
297	Laguna Canyon Road	Old Laguna Canyon Road to Lake Forest Drive	73.3	139	299	645
298	Laguna Canyon Road	Laguna Canyon Freeway to Quail Hill Parkway	69.9	RW	133	287
299	Laguna Canyon Road	Discovery to Sand Canyon Avenue	69.5	RW	125	270
300	Laguna Canyon Road	I-405 Overcrossing to Pasteur	67.9	RW	79	169
301	Laguna Canyon Road	Irvine Center Drive to Discovery	69.0	RW	115	249
302	Laguna Canyon Road	Quail Hill Parkway to I-405 Overcrossing	67.9	RW	79	169
303	Laguna Canyon Road	Pasteur to Alton Parkway	67.0	RW	85	184
304	Laguna Canyon Road	Waterworks to Irvine Center Drive	67.5	RW	92	198

Table 7

305	Laguna Canyon Road	Alton Parkway to Barranca Parkway	66.3	RW	77	166
306	Laguna Canyon Road	Barranca Parkway to Waterworks	66.2	RW	75	162
307	Lake Forest Drive	Hidden Canyon to Laguna Canyon Road	69.4	RW	122	264
308	Lake Forest Drive	Bake Parkway to Hidden Canyon (Romano)	69.3	RW	122	262
309	Lake Forest Drive	Tesla to Bake Parkway	66.4	RW	104	225
310	Lake Road	Alton Parkway to Barranca Parkway	59.2	RW	RW	RW
311	Lynx	Irvine Boulevard to Astor	53.2	RW	RW	RW
312	MacArthur Boulevard	I-405 SB Off-Ramp to Michelson Drive	76.7	282	607	1308
313	MacArthur Boulevard	Main Street to I-405 NB Off-Ramp	76.7	278	599	1291
314	MacArthur Boulevard	I-405 NB Off-Ramp and I-405 SB Off-Ramp	76.6	276	594	1279
315	MacArthur Boulevard	Jamboree Road to Fairchild Road	69.9	RW	178	382
316	MacArthur Boulevard	Fairchild Road to University Drive	69.8	RW	176	380
317	MacArthur Boulevard	Fitch to Red Hill Avenue	70.5	87	187	403
318	MacArthur Boulevard	Michelson Drive to Douglas	72.2	140	302	650
319	MacArthur Boulevard	Douglas to Campus Drive	72.1	139	299	644
320	MacArthur Boulevard	Skypark to Main Street	69.5	RW	159	343
321	MacArthur Boulevard	Redhill Avenue to Skypark	68.3	RW	140	302
322	MacArthur Boulevard	Birch Street to Jamboree Road	67.1	RW	115	248
323	MacArthur Boulevard	Campus Drive to Birch Street	69.3	RW	194	418
324	Main Street	Gillette Avenue to Von Karman Avenue	70.9	92	197	425
325	Main Street	MacArthur Boulevard to Mercantile	70.3	84	180	388
326	Main Street	Executive Park to MacArthur Boulevard	68.4	RW	142	307
327	Main Street	Von Karman Avenue to Cartwright	68.5	RW	143	308
328	Main Street	McDurmott to Red Hill Avenue	68.1	RW	135	291
329	Main Street	Red Hill Avenue to Executive Circle	68.0	RW	133	287
330	Main Street	Jamboree Road to Union	67.8	RW	130	280
331	Main Street	Culver Drive to West Yale Loop	67.2	RW	87	188
332	Main Street	Siglo to Jamboree Road	67.7	RW	128	275
333	Main Street	Veneto to Harvard Avenue	67.5	RW	124	268
334	Main Street	Paseo Westpark to Culver Drive	66.3	RW	77	165
335	Main Street	Harvard Avenue to San Mateo	66.3	RW	76	164

Table 7

336	Marine Way	Sand Canyon Avenue to Ridge Valley (O Street)	72.3	71	154	332
337	Marine Way	Alton Parkway to Bake Parkway	69.4	RW	124	266
338	Marine Way	Lynx to Barranca Parkway	69.3	RW	121	261
339	Marine Way	County Access to Treble	68.5	RW	106	229
340	Marine Way	Ridge Valley (O Street) to Skyhawk	68.3	RW	104	224
341	Marine Way	Skyhawk to County Access	67.4	RW	90	194
342	Marine Way	Barranca Parkway to Alton Parkway	66.8	RW	82	177
343	Marine Way	Treble to Lynx	66.5	RW	79	170
344	McGaw Avenue	Von Karman Avenue to Jamboree Road	64.5	RW	RW	124
345	McGaw Avenue	Red Hill Avenue to Von Karman Avenue	64.3	RW	RW	122
346	McGaw Avenue	Daimler to Red Hill Avenue	62.4	RW	RW	91
347	McGaw Avenue	Jamboree Road to Murphy Avenue	59.6	RW	RW	RW
348	Meadowood	Culver Drive to Canyonwood	59.8	RW	RW	RW
349	Meridian	Spectrum to Alton Parkway	55.6	RW	RW	RW
350	Meridian	Alton Parkway to Gateway Boulevard	54.7	RW	RW	RW
351	Merit	Irvine Boulevard to Cadence	58.0	RW	RW	RW
352	Michelson Drive	Riparian to Harvard Avenue	68.3	RW	104	223
353	Michelson Drive	Almond Tree Lane to Yale Avenue	67.2	RW	52	113
354	Michelson Drive	Von Karman Avenue to Obsidian	68.2	RW	101	218
355	Michelson Drive	Parkside to Culver Drive	67.8	RW	96	206
356	Michelson Drive	Gillman to Seton/Sandburg Way	66.9	RW	50	108
357	Michelson Drive	Carlson to Prince	67.3	RW	107	231
358	Michelson Drive	MacArthur Boulevard to Dupont Drive	67.5	RW	92	197
359	Michelson Drive	Harvard Avenue to Parkside	66.8	RW	83	178
360	Michelson Drive	Bixby to Von Karman Avenue	66.8	RW	83	179
361	Michelson Drive	Jamboree Road to Carlson	69.6	RW	122	263
362	Michelson Drive	Teller to Jamboree Road	69.6	RW	122	262
363	Michelson Drive	Jordan East to University Drive	67.1	RW	41	89
364	Michelson Drive	Culver Drive to Angell	66.3	RW	49	105
365	Modjeska (A Street)	Portola Springs to Irvine Boulevard	71.7	39	84	181
366	Modjeska (A Street)	South of Irvine Boulevard	61.1	RW	RW	44

Table 7

367	Muirlands Boulevard	Bake Parkway to City Limits	67.2	RW	88	189
368	Muirlands Boulevard	Alton Parkway to Sterling	66.3	RW	76	165
369	Muirlands Boulevard	Wrigley to Bake Parkway	66.3	RW	76	165
370	Newport Coast Drive	SR-73 NB Off-Ramp to Turtle Ridge	66.6	RW	80	173
371	Newport Coast Drive	Turtle Crest to Bonita Canyon Drive	65.1	RW	63	137
372	Nightmist	Sand Canyon Avenue to Tulip (Road C)	61.8	RW	RW	82
373	Northwood	Yale Avenue to Savannah	62.5	RW	RW	55
374	Northwood	Goldrush to Yale Avenue	61.5	RW	RW	47
375	Oak Canyon Drive	Valley Oak Drive to Sand Canyon Avenue	69.7	RW	77	165
376	Pacifica	Gateway to Barranca Parkway	65.3	RW	65	140
377	Pacifica	Alton Parkway to Gateway	64.1	RW	RW	117
378	Pacifica	Irvine Center Drive to Fortune Drive (Spectrum Center Drive)	62.7	RW	RW	94
379	Pacifica	Meridian to Alton Parkway	60.9	RW	RW	71
380	Park Place	Christamon South to Yale Avenue	57.0	RW	RW	RW
381	Portola Parkway	Bee Canyon Access Road to Sand Canyon Avenue	71.7	81	175	377
382	Portola Parkway	Jeffrey Road to Bee Canyon Access Road	71.7	81	175	376
383	Portola Parkway	Arrowhead to Ridge Valley Parkway	71.4	78	168	361
384	Portola Parkway	Sand Canyon Avenue to Arrowhead	71.1	73	158	341
385	Portola Parkway	Portola Springs to SR-241 SB Off-Ramp	70.1	63	136	293
386	Portola Parkway	Gatepark to Culver Drive	70.7	94	203	437
387	Portola Parkway	ETC-6 (SR-261) NB Off-Ramp to Gatepark	70.7	93	201	433
388	Portola Parkway	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.6	91	197	424
389	Portola Parkway	Jamboree Road to Bellevue	70.5	91	195	421
390	Portola Parkway	Bellevue to ETC-6 (SR-261) SB Off-Ramp	70.5	90	194	418
391	Portola Parkway	Yale Avenue to Jeffrey Road	70.2	87	188	405
392	Portola Parkway	Culver Drive to Yale Avenue	69.7	RW	172	371
393	Portola Parkway	Silverado to Portola Springs	68.6	RW	108	233
394	Pusan	Irvine Boulevard to Cadence	56.2	RW	RW	RW
395	Quail Hill Parkway	Shady Canyon Drive to Passage	67.5	RW	91	197
396	Quail Hill Parkway	East Knollcrest to Laguna Canyon Road	65.4	RW	67	143
397	Quassar Drive (Spectrum)	Irvine Center Drive to Spectrum Center Drive (Fortune)	54.9	RW	RW	RW

Table 7

398	Red Hill Avenue	MacArthur Boulevard to McGaw Avenue	71.6	107	230	495
399	Red Hill Avenue	I-405 Over Crossing to Main Street	70.2	65	139	300
400	Red Hill Avenue	Alton Parkway to Deere Avenue	70.1	85	183	394
401	Red Hill Avenue	McGaw Avenue to Alton Parkway	69.9	RW	180	387
402	Red Hill Avenue	Deere Avenue to Barranca Parkway	69.8	RW	175	377
403	Red Hill Avenue	Skypark East to MacArthur Boulevard	71.4	74	160	345
404	Red Hill Avenue	Main Street to Skypark East	70.8	67	145	313
405	Research Drive	Hubble to Bake Parkway	69.6	RW	127	273
406	Research Drive	Scientific to Lake Forest Drive	67.4	RW	90	194
407	Research Drive	Bake Parkway to Muller	66.7	RW	81	173
408	Research Drive	Irvine Center Drive to Bunsen	65.7	RW	70	150
409	Ridge Valley (O Street)	Irvine Boulevard to Trabuco Road (Great Park Boulevard)	67.3	RW	89	192
410	Ridge Valley (O Street)	Portola Parkway to Irvine Boulevard	66.4	RW	77	166
411	Ridge Valley (O Street)	Trabuco Road (Great Park Boulevard) to Marine Way	66.0	RW	73	157
412	Ridge Valley (O Street)	Ranchland to Portola Parkway	58.1	RW	RW	RW
413	Ridgeline Drive	Concordia East to University Drive	68.8	RW	71	154
414	Ridgeline Drive	Turtle Rock Drive to San Simeon	68.5	RW	68	146
415	Rockfield Avenue	Whatney to McLaren	67.7	RW	95	204
416	Rockfield Avenue	Bake Parkway to Whatney	64.3	RW	RW	121
417	Rockfield Avenue	Thomas to Bake Parkway	63.1	RW	RW	101
418	Roosevelt	Jeffrey Road to Vision	66.6	RW	80	172
419	Roosevelt	Yale Avenue to Van Buren	68.3	RW	50	107
420	Roosevelt	Vision to Bay Tree	66.3	RW	77	166
421	Roosevelt	Nimitz to Jeffrey Road	65.9	RW	71	154
422	Roosevelt	Tulip (Road C) to Sand Canyon Avenue	65.6	RW	69	148
423	Royal Oak	Alton Parkway to Eaglecreek	64.0	RW	RW	56
424	Sand Canyon Avenue	Oak Canyon Drive to Burt Road	72.2	117	252	543
425	Sand Canyon Avenue	Irvine Center Drive to Oak Canyon Drive	72.0	113	244	526
426	Sand Canyon Avenue	I-405 NB Off-Ramp to Alton Parkway	74.7	123	264	569
427	Sand Canyon Avenue	Burt Road to I-5 SB Off-Ramp	72.7	122	263	566
428	Sand Canyon Avenue	Marine to I-5 NB Off-Ramp	74.6	204	440	947



Table 7

429	Sand Canyon Avenue	Trabuco Road to Towngate	71.0	98	211	454
430	Sand Canyon Avenue	Barranca Parkway to Waterworks	70.9	97	209	450
431	Sand Canyon Avenue	I-5 SB Off-Ramp to Marine	73.9	181	389	838
432	Sand Canyon Avenue	Hospital to Barranca Parkway	70.8	95	205	441
433	Sand Canyon Avenue	Nightmist to Roosevelt	73.5	172	371	799
434	Sand Canyon Avenue	I-405 SB Off-Ramp to I-405 NB Off-Ramp	73.6	104	224	482
435	Sand Canyon Avenue	I-5 NB Off-Ramp to Nightmist	73.5	171	368	793
436	Sand Canyon Avenue	Towngate to Irvine Boulevard	70.3	89	191	411
437	Sand Canyon Avenue	Waterworks to Irvine Center Drive	70.2	87	187	404
438	Sand Canyon Avenue	Irvine Boulevard to Portola Parkway	69.2	RW	118	255
439	Sand Canyon Avenue	Roosevelt to Trabuco Road	72.8	153	331	712
440	Sand Canyon Avenue	Alton Parkway to Hospital	70.8	90	195	420
441	Sand Canyon/Shady Canyon	Quail Hill Parkway to I-405 SB Ramps	71.8	79	170	366
442	Scientific Way	Irvine Center Drive to Wald	55.0	RW	RW	RW
443	Shady Canyon Drive	Culver Drive/Bonita Canyon Drive to Cloverfield	69.3	RW	73	156
444	Shady Canyon Drive	Bommer Canyon Road to Sunnyhill	67.7	RW	76	163
445	Skyhawk	Great Park Boulevard to Marine Way	59.6	13	27	58
446	Southwood	Yale Avenue to Colt	60.6	9	19	41
447	Southwood	Challenger to Yale Avenue	60.4	9	18	40
448	Spectrum Center Drive (Fortune Drive)	Pacifica to Quassar Drive (Spectrum )	62.0	18	39	85
449	Spectrum Center Drive (FortuneDrive)	Quassar Drive (Spectrum ) to Gatewayb	62.5	20	42	91
450	Sunnyhill	Shady Canyon Drive to Turtle Rock Drive	57.7	9	20	44
451	Technology Drive	Barranca Parkway to Alton Parkway	70.8	71	152	327
452	Technology Drive	Old Laguna Canyon Road to I-5/SR-133 Undercrossing	69.6	59	126	272
453	Technology Drive	I-5/SR-133 to Barranca Parkway	69.4	57	123	265
454	Technology Drive	Ada to Alton Parkway	63.7	24	51	110
455	Toledo Way	Bake Parkway to City Limits	65.6	32	69	148
456	Toledo Way	Goodyear to Bake Parkway	64.7	28	60	129
457	Toledo Way	Alton Parkway to Parker	64.5	27	57	124
458	Trabuco Road	Keystone to Sand Canyon Avenue	67.2	41	88	189
459	Trabuco Road	Jeffrey Road to Keystone	67.1	40	86	185

Table 7

460	Trabuco Road	Culver Drive to I-5 NB Off-Ramp	66.8	38	83	178
461	Trabuco Road	Monroe to Yale Avenue	66.8	38	83	178
462	Trabuco Road	I-5 NB Off-Ramp to Monroe	66.7	38	81	175
463	Trabuco Road	Yale Avenue to Remington	66.4	36	78	167
464	Trabuco Road	Remington to Jeffrey Road	66.1	35	74	160
465	Turtle Ridge Drive	Federation Way to Bonita Canyon	68.7	51	111	239
466	Turtle Rock Drive	Ridgeline to Willowleaf	67.9	27	58	125
467	Turtle Rock Drive	Silkwood to Sunnyhill	67.8	27	58	124
468	Turtle Rock Drive	Canyon Park to Ridgeline	67.1	24	52	111
469	Turtle Rock Drive	Sunnyhill to Southernwood	64.0	15	32	70
470	Turtle Rock Drive	Campus Drive to Hillgate	64.1	25	55	118
471	Turtle Rock Drive	Paseo Segovia to Campus Drive	65.5	20	43	92
472	University Drive	Golden Glow to Yale Avenue	73.0	99	214	461
473	University Drive	Ridgeline to Michelson Drive	72.6	112	240	518
474	University Drive	Culver Drive to Golden Glow	72.9	97	210	452
475	University Drive	Yale Avenue to Ridgeline	72.4	90	194	418
476	University Drive	Michelson Drive to I-405 SB Off-Ramp	72.7	128	276	594
477	University Drive	Mesa to Campus Drive	74.5	120	259	559
478	University Drive	MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	74.4	119	255	550
479	University Drive	California Avenue to Mesa	74.4	119	256	551
480	University Drive	Campus Drive to Harvard Avenue	70.7	94	202	436
481	University Drive	SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	71.6	64	137	295
482	University Drive	SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps	70.2	87	187	402
483	University Drive	San Joaquin to Culver Drive	69.8	82	177	381
484	University Drive	Harvard Avenue to San Joaquin	69.8	82	176	380
485	Valley Oak Drive	Hawkcreek to Barranca Parkway	68.1	47	101	217
486	Valley Oak Drive	Irvine Center Drive to Oak Canyon Drive	69.6	47	101	217
487	Valley Oak Drive	Barranca Parkway to Irvine Center Drive	67.1	40	87	186
488	Valley Oak Drive	Alton Parkway to Hawkcreek	64.9	29	62	133
489	Von Karman Avenue	Marriott to Morse Avenue	71.0	73	157	338
490	Von Karman Avenue	Michelson Drive to Quartz	70.9	71	153	331

Table 7

491	Von Karman Avenue	McGaw Avenue to Alton Parkway	70.8	70	152	327
492	Von Karman Avenue	Alton Parkway to Barranca Parkway	70.4	80	172	369
493	Von Karman Avenue	Main Street to Anchor	70.7	69	149	322
494	Von Karman Avenue	Anchor to McGaw Avenue	70.5	68	146	314
495	Von Karman Avenue	Morse to Main Street	70.3	65	140	303
496	Von Karman Avenue	Martin to Dupont Drive	69.6	59	127	274
497	Von Karman Avenue	Campus Drive to Martin	69.5	58	125	270
498	Von Karman Avenue	Dupont Drive to Michelson Drive	69.5	58	125	269
499	Walnut Avenue	Jeffrey Road to I-5 SB Off-Ramp	70.9	72	156	335
500	Walnut Avenue	Myford Road to Jamboree Road SB Off-Ramp	69.1	55	118	254
501	Walnut Avenue	The Mall Street to Culver Drive	68.8	52	112	242
502	Walnut Avenue	Harvard Avenue to The Mall Street	68.8	52	112	242
503	Walnut Avenue	Franciscan Street to Ravenwood Street	68.5	49	106	229
504	Walnut Avenue	Ravenwood Street to Yale Avenue	68.5	50	107	230
505	Walnut Avenue	Culver Drive to Franciscan Street	68.4	49	105	225
506	Walnut Avenue	Peters Canyon Road to Harvard Avenue	68.0	62	134	289
507	Walnut Avenue	Jamboree Road NB Off-Ramp to Peters Canyon Road	67.9	61	130	281
508	Walnut Avenue	Yale Avenue to Kazan Street	67.3	41	89	191
509	Walnut Avenue	Wisteria to Jeffrey Road	67.2	41	88	189
510	Warner Avenue	Jamboree Road SB Off-ramp to Construction North	70.2	64	139	299
511	Warner Avenue	Construction North to Harvard Avenue	68.6	51	109	235
512	Warner Avenue	Harvard Avenue to Paseo Westpark	67.1	40	86	185
513	Warner Avenue	Santa Ynez to Culver Drive	66.2	35	75	161
514	Warner Avenue	Culver Drive to West Yale Loop	65.8	33	71	153
515	West Yale Loop	Alton Parkway to Blue Lake North	64.0	25	54	116
516	West Yale Loop	Eagle Run to Main Street	63.9	24	52	113
517	West Yale Loop	Thunder Run to Yale Avenue	64.0	25	53	115
518	West Yale Loop	Main Street to Timber Run	62.8	21	45	97
519	West Yale Loop	Yale Avenue to Shorebird	63.2	22	47	102
520	West Yale Loop	Warner Avenue to Stonecreek South	62.7	20	44	94
521	West Yale Loop	Barranca Parkway to Alton Parkway	62.4	20	42	91

Table 7

522	West Yale Loop	Stonecreek North to Warner Avenue	62.6	20	43	93
523	West Yale Loop	Birdsong to Barranca Parkway	62.4	19	42	90
524	Westwood	Yorktown to Bryan Avenue	63.5	14	30	64
525	Westwood	Bryan Avenue to Leaf	61.6	10	22	48
526	Yale Avenue	Deerfield Avenue to Winvale Avenue	68.6	30	65	141
527	Yale Avenue	Hicks Canyon Drive to Meadowood	67.3	25	54	116
528	Yale Avenue	Walnut Avenue to Roosevelt	71.1	47	102	219
529	Yale Avenue	Roosevelt to Trabuco Road	67.1	40	86	185
530	Yale Avenue	Irvine Center Drive to Deerfield Avenue	66.9	39	83	179
531	Yale Avenue	West Yale Loop to Irvine Center Drive	66.5	36	78	169
532	Yale Avenue	Winvale Avenue to Karen Ann Lane	65.7	32	70	150
533	Yale Avenue	Karen Ann Lane to Walnut Avenue	65.7	32	70	150
534	Yale Avenue	Trabuco Road to Southwood	65.6	32	69	148
535	Yale Avenue	Southwood to Bryan Avenue	65.4	31	66	143
536	Yale Avenue	Northwood to Irvine Boulevard	65.1	30	64	137
537	Yale Avenue	Bryan Avenue to Monticello	65.0	29	62	134
538	Yale Avenue	Irvine Boulevard to Park Place	64.2	26	56	120
539	Yale Avenue	University Drive to Royce	63.6	19	40	87
540	Yale Court	Arborwood to Portola Parkway	60.4	9	18	40

<sup>1</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest receiving land use.

"RW" = Location of the respective noise contour falls within the right-of-way of the road.

Table 8

Table 8: Conservative Cumulative Plan Conditions Noise Contours

ID	Road	Segment	CNEL at Nearest Receiving Land Use (dBA) <sup>1</sup>	Distance to Contour from Centerline (Feet)		
				70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Ada	Barranca Parway to Marine Way	70.8	42	91	196
2	Ada	Alton Parkway to Barranca Parkway	69.3	RW	120	259
3	Alton Parkway	Enterprise to I-5 NB Off-Ramp	74.1	159	342	737
4	Alton Parkway	I-5 NB Off-Ramp to Technology Drive West	74.8	167	360	776
5	Alton Parkway	East Yale Loop to Jeffrey Road	71.8	83	179	385
6	Alton Parkway	Gateway Boulevard to Enterprise	72.0	114	246	529
7	Alton Parkway	Jeffrey Road to Royal Oak	70.9	72	155	335
8	Alton Parkway	Daimler Street to Red Hill Avenue	70.7	69	149	322
9	Alton Parkway	Culver Drive to West Yale Loop	70.7	69	150	322
10	Alton Parkway	West Yale Loop to Lake Road	70.7	70	150	323
11	Alton Parkway	Technology Drive West to Ada	72.6	120	259	558
12	Alton Parkway	Creek Road to East Yale Loop	70.7	69	149	321
13	Alton Parkway	Red Hill Avenue to Von Karman Avenue	70.6	69	148	319
14	Alton Parkway	Lake Road to Creek Road	70.4	67	144	310
15	Alton Parkway	Telemetry to Banting	70.5	67	144	311
16	Alton Parkway	Irvine Boulevard to Commercentre	70.8	96	206	444
17	Alton Parkway	Jenner to Telemetry	70.4	66	143	308
18	Alton Parkway	Irvine Center Drive to Gateway Boulevard	71.3	102	220	475
19	Alton Parkway	Sand Canyon Avenue to Hospital	73.7	106	227	490
20	Alton Parkway	Laguna Canyon Road to Jenner	70.3	65	141	303
21	Alton Parkway	Technology Drive East to Barranca Pkwy/Muirlands Blvd	71.2	101	219	471
22	Alton Parkway	Royal Oak to Valley Oak Drive	70.1	64	137	295
23	Alton Parkway	Banting to Pacifica	70.1	63	136	293
24	Alton Parkway	Barranca Pkwy/Muirlands Blvd to Jeronimo Road	71.0	97	210	452
25	Alton Parkway	Ada to Technology Drive East	70.7	94	202	435

Table 8

26	Alton Parkway	Von Karman Avenue to Jamboree Road	69.8	RW	130	281
27	Alton Parkway	Jeronimo Road to Hughes	69.9	RW	178	384
28	Alton Parkway	Hughes to Morgan	69.8	RW	174	376
29	Alton Parkway	Morgan to Toledo Way	69.1	RW	157	339
30	Alton Parkway	San Marino to Culver Drive	69.2	RW	160	345
31	Alton Parkway	Jamboree Road to Murphy Avenue	69.2	RW	161	347
32	Alton Parkway	Hospital to Laguna Canyon Road	72.1	83	178	384
33	Alton Parkway	Valley Oak Drive to Sand Canyon Avenue	71.9	80	172	371
34	Alton Parkway	Murphy Avenue to Harvard Avenue	69.0	RW	156	335
35	Alton Parkway	Foster to Irvine Boulevard	68.7	RW	149	321
36	Alton Parkway	Fairbanks to Foster	68.6	RW	145	313
37	Alton Parkway	Toledo Way to Berteza	68.4	RW	142	306
38	Alton Parkway	Pacifica to Meridian	71.7	78	169	364
39	Alton Parkway	Berteza to Fairbanks	68.3	RW	140	301
40	Alton Parkway	Meridian to Irvine Center Drive	68.3	RW	139	300
41	Alton Parkway	Paseo Westpark to San Marino	68.3	RW	139	300
42	Alton Parkway	Harvard Avenue to Paseo Westpark	67.9	RW	130	280
43	Astor	Lynx to Fairbanks	67.1	RW	52	112
44	Astor	Cadence to Lynx	65.9	RW	43	93
45	Bake Parkway	I-5 NB Off-Ramp to Rockfield Boulevard	76.7	282	607	1307
46	Bake Parkway	Muirlands Boulevard to Jeronimo Road	73.1	134	289	624
47	Bake Parkway	Rockfield Boulevard to Muirlands Boulevard	75.1	220	474	1020
48	Bake Parkway	Jeronimo Road to Toledo Way	72.2	117	252	543
49	Bake Parkway	Toledo Way to Cromwell	71.7	110	236	509
50	Bake Parkway	Cromwell to Irvine Boulevard	71.6	107	231	498
51	Bake Parkway	Research Drive to I-5 SB Off-Ramp	69.7	RW	173	372
52	Bake Parkway	Irvine Center Drive to Research Drive	65.1	RW	85	184
53	Bake Parkway	Lake Forest Drive to Irvine Center Drive	63.7	RW	RW	149
54	Banting	Alton Parkway to Barranca Parkway	60.3	RW	RW	65
55	Barranca Parkway	Pacifica to Irvine Center Drive	73.3	104	224	483
56	Barranca Parkway	Banting to Pacifica	72.8	97	208	448

Table 8

57	Barranca Parkway	I-5 HOV Ramp to Technology Drive West	73.0	99	213	460
58	Barranca Parkway	Technology Drive West to Ada	72.7	95	204	440
59	Barranca Parkway	Irvine Center Drive to I-5 HOV Ramp	72.6	94	202	434
60	Barranca Parkway	Culver Drive to West Yale Loop	72.3	89	191	412
61	Barranca Parkway	East Yale Loop to Jeffrey Road	72.3	88	190	410
62	Barranca Parkway	West Yale Loop to Lake Road	72.1	86	185	399
63	Barranca Parkway	Ada to Alton Parkway	72.2	87	188	404
64	Barranca Parkway	Lake Road to Creek Road	71.8	83	178	383
65	Barranca Parkway	Red Hill Avenue to Armstrong Avenue	74.8	209	451	972
66	Barranca Parkway	Discovery/Herchel to Banting	71.7	81	174	375
67	Barranca Parkway	Lyon to East Yale Loop	71.6	80	172	371
68	Barranca Parkway	Creek Road to Lyon	71.5	79	170	367
69	Barranca Parkway	Von Karman Avenue to Jamboree Road	72.8	123	264	569
70	Barranca Parkway	Sand Canyon Avenue to Laguna Canyon Road	71.1	75	161	346
71	Barranca Parkway	Armstrong Avenue to Von Karman Avenue	72.5	118	254	546
72	Barranca Parkway	Valley Oak Drive to Sand Canyon Avenue	70.8	71	153	329
73	Barranca Parkway	Jamboree Road to Construction Circle	71.2	101	217	467
74	Barranca Parkway	Santa Rosa to Culver Drive	71.1	99	213	459
75	Barranca Parkway	FedEx to Discovery/Herchel	70.6	68	147	316
76	Barranca Parkway	Jeffrey Road to Valley Oak Drive	70.5	67	145	313
77	Barranca Parkway	Laguna Canyon Road to FedEx	70.4	67	144	310
78	Barranca Parkway	Pullman Street to Red Hill Avenue	73.6	175	377	812
79	Barranca Parkway	Construction Circle to Fire Station	70.6	93	200	430
80	Barranca Parkway	Fire Station to Harvard Avenue	70.6	93	200	430
81	Barranca Parkway	Paseo Westpark to Santa Rosa	70.6	93	200	430
82	Barranca Parkway	Harvard Avenue to Paseo Westpark	70.3	88	191	411
83	Bay Tree	Trabuco Road to Roosevelt	57.1	RW	RW	RW
84	Beacon	Ridge Valley to Benchmark	59.7	RW	RW	RW
85	Benchmark (LN Street)	Ridge Valley (O Street) to Bosque	56.5	RW	RW	RW
86	Bison Avenue	SR-73 NB Off-Ramp to California Avenue	69.7	RW	128	276
87	Bonita Canyon Drive	MacArthur Boulevard to SR-73	70.3	79	169	364

Table 8

88	Bonita Canyon Drive	Turtle Ridge to Shady Canyon Drive	68.6	RW	130	281
89	Bonita Canyon Drive	Newport Coast Drive to Turtle Ridge	68.2	RW	123	266
90	Bonita Canyon Drive	SR-73 NB Off-Ramp to Newport Coast Drive	68.1	RW	120	258
91	Bosque	Cadence to Great Park Boulevard	65.2	RW	39	84
92	Bosque	Irvine Boulevard to Benchmark (LN Street)	63.6	RW	RW	65
93	Bosque	Benchmark to Cadence	63.2	RW	RW	61
94	Bosque	Great Park Boulevard to Beacon	56.8	RW	RW	RW
95	Bosque	Beacon to S 5th Street	56.2	RW	RW	RW
96	Bryan Avenue	Jamboree Road to Market Place	69.1	RW	117	252
97	Bryan Avenue	Market Place to El Camino Real	68.8	RW	113	243
98	Bryan Avenue	Rubicon to Culver Drive	68.9	RW	114	245
99	Bryan Avenue	El Camino Real to Rubicon	68.9	RW	113	243
100	Bryan Avenue	Eastwood to Jeffrey Road	67.2	RW	88	189
101	Bryan Avenue	Westwood to Yale Avenue	66.8	RW	82	178
102	Bryan Avenue	Culver Drive to Westwood	66.7	RW	81	175
103	Bryan Avenue	Yale Avenue to Eastwood	66.8	RW	82	176
104	Cadence	Pusan to Chinon	65.6	RW	41	89
105	Cadence	Bosque to Pusan	65.3	RW	39	85
106	Cadence	Ridge Valley (O Street) to Bosque	64.0	RW	RW	69
107	Cadence	Chinon to Merit	62.4	RW	RW	54
108	Cadence	Merit to Astor	59.4	RW	RW	RW
109	California Avenue	University Drive to Academy Way	67.3	RW	89	191
110	California Avenue	Campus Drive to Harvard Avenue	64.2	RW	RW	119
111	California Avenue	Theory to Bison Avenue	64.0	RW	RW	115
112	Campus Drive	Carlson Avenue to University Drive	73.3	83	180	387
113	Campus Drive	University Drive to Bridge Road	71.8	82	177	381
114	Campus Drive	Jamboree Road to Carlson Avenue	71.6	80	172	371
115	Campus Drive	Stanford Court to Berkeley Avenue	71.1	74	159	342
116	Campus Drive	California Avenue to Culver Drive	70.9	72	155	334
117	Campus Drive	Berkeley Avenue to Cornell	69.9	RW	133	287
118	Campus Drive	Martin to Von Karman Avenue	69.2	RW	120	258



Table 8

119	Campus Drive	Culver Drive to Paseo Montoya (Turtle Rock Drive)	68.7	RW	111	239
120	Campus Drive	Von Karman Avenue to Teller Avenue	68.5	RW	107	231
121	Campus Drive	MacArthur Boulevard to Martin	68.3	RW	104	224
122	Campus Drive	Teller Avenue to Jamboree Road	67.6	RW	93	201
123	Carlson Avenue	Michelson Drive to Campus Drive	67.9	RW	98	211
124	Chinon	Irvine Boulevard to Cadence	58.8	RW	RW	RW
125	Creek Road	Alton Parkway to Barranca Parkway	56.3	RW	RW	RW
126	Culver Drive	Michelson Drive to I-405 SB Off-Ramp	73.9	154	331	713
127	Culver Drive	I-405 SB Off-Ramp to I-405 NB Off Ramp	73.8	151	326	703
128	Culver Drive	I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)	73.9	154	331	714
129	Culver Drive	Scottsdale Drive to I-5 SB Off- Ramp	73.8	151	325	701
130	Culver Drive	I-405 NB Off-Ramp to San Leandro	73.6	146	315	679
131	Culver Drive	San Leandro to Main Street	73.3	140	301	649
132	Culver Drive	Harvard Avenue to University Drive	73.4	140	303	652
133	Culver Drive	Trabuco Road to Farwell Avenue	74.2	153	329	708
134	Culver Drive	Alton Parkway to Barranca Parkway	73.2	137	295	637
135	Culver Drive	Main Street to Alton Parkway	73.1	135	290	625
136	Culver Drive	Warner Avenue to Irvine Center Drive	73.0	133	287	618
137	Culver Drive	Walnut Avenue to Scottsdale Dive	72.8	130	280	604
138	Culver Drive	Barranca Parkway to Warner Avenue	72.9	131	282	607
139	Culver Drive	Shady Canyon Drive to Palo Verde	72.0	84	182	392
140	Culver Drive	Deerfield Avenue to Walnut Avenue	72.5	124	267	574
141	Culver Drive	Sandburg Way to Michelson Drive	72.5	124	267	575
142	Culver Drive	Irvine Center Drive to Deerfield Avenue	72.4	122	263	567
143	Culver Drive	Palo Verde to Campus Drive	71.6	80	172	370
144	Culver Drive	University Drive to Sandburg Way	72.2	118	253	545
145	Culver Drive	Farwell Avenue to Bryan Avenue	73.2	131	281	606
146	Culver Drive	Campus Drive to High School	72.1	116	250	539
147	Culver Drive	High School to Harvard Avenue	72.0	114	246	530
148	Culver Drive	Bryan Avenue to Florence	71.8	111	238	513
149	Culver Drive	Portola Parkway to Settlers	71.2	76	163	350

Table 8

150	Culver Drive	Florence to Irvine Boulevard	71.7	109	235	505
151	Culver Drive	Irvine Boulevard to Viewpark	70.5	91	196	422
152	Culver Drive	Viewpark to Meadowood	70.4	89	191	412
153	Culver Drive	Settlers to Furrow	68.6	RW	108	233
154	Culver Drive	Meadowood to Portola Parkway	69.0	RW	154	333
155	Discovery Drive	Irvine Center Drive to Laguna Canyon Road	65.5	RW	68	146
156	Discovery Drive	Waterworks Way to Irvine Center Drive	63.6	RW	RW	109
157	East Yale Loop	Alton Parkway to Witherspoon	65.6	RW	69	148
158	East Yale Loop	Osborn Street to Barranca Parkway	65.4	RW	66	143
159	East Yale Loop	Yale Avenue to Springbrook South	65.0	RW	63	136
160	East Yale Loop	Springbrook North to Alton Parkway	63.6	RW	RW	109
161	East Yale Loop	Woodspring to Yale Avenue	62.9	RW	RW	97
162	East Yale Loop	Barranca Parkway to Eastshore	62.5	RW	RW	92
163	Eastwood	Bryan Avenue to Monticello	60.9	RW	RW	43
164	Eastwood	Columbus to Bryan Avenue	58.9	RW	RW	RW
165	El Camino Real	Jamboree Road to Alliance (SR-261 Bridge)	67.2	RW	87	188
166	El Camino Real North	El Camino Real to Bryan Avenue	62.4	RW	RW	90
167	Fairbanks	Alton Parkway to Astor	69.9	RW	79	171
168	Fairbanks	Irvine Boulevard to Alton Parkway	66.9	RW	50	108
169	Fairchild Road	MacArthur Boulevard to Jamboree Road	64.0	RW	RW	116
170	Gateway Boulevard	Alton Parkway to Irvine Center Drive	63.5	RW	RW	107
171	Gateway Boulevard	Spectrum Center Drive (Fortune Drive) to Alton Parkway	62.2	RW	RW	88
172	Gateway Boulevard	Irvine Center Drive to Meridian	59.2	RW	RW	RW
173	Great Park Boulevard	Sand Canyon to Ridge Valley	74.6	121	261	562
174	Great Park Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	70.4	66	143	307
175	Great Park Boulevard (EB)	Bosque to Skyhawk	69.1	RW	71	152
176	Great Park Boulevard (WB)	Bosque to Skyhawk	68.4	RW	63	136
177	Harvard Avenue	University Drive to Michelson Drive	72.1	51	111	239
178	Harvard Avenue	Michelson Drive to Coronado	70.5	67	145	313
179	Harvard Avenue	San Marino to Alton Parkway	70.3	65	140	302
180	Harvard Avenue	Coronado to Main Street	70.2	64	138	298

Table 8

181	Harvard Avenue	San Carlo to San Marino	70.2	64	138	297
182	Harvard Avenue	Main Street to San Carlo	70.1	63	136	293
183	Harvard Avenue	Alton Parkway to San Leon	68.6	RW	109	234
184	Harvard Avenue	San Juan to Barranca Parkway	68.7	RW	110	236
185	Harvard Avenue	San Leon to San Juan	68.6	RW	108	233
186	Harvard Avenue	Irvine Center Drive to Deerfield Avenue	67.5	RW	92	197
187	Harvard Avenue	Deerfield Avenue to Poplar Street	67.4	RW	91	195
188	Harvard Avenue	Barranca Parkway to Warner Avenue	67.9	RW	97	210
189	Harvard Avenue	Bridge Road to University Drive	67.8	RW	97	208
190	Harvard Avenue	Paseo Westpark to Irvine Center Drive	67.8	RW	96	207
191	Harvard Avenue	Poplar Street to Walnut Avenue	68.9	RW	90	195
192	Harvard Avenue	California Avenue to Berkeley Avenue	67.3	RW	89	193
193	Harvard Avenue	Culver Drive to California Avenue	67.3	RW	88	191
194	Harvard Avenue	Berkeley to Bridge Road	67.2	RW	87	188
195	Harvard Avenue	Warner Avenue to Paseo Westpark	66.8	RW	82	176
196	Hicks Canyon Drive	Delamesa to Yale Avenue	58.2	RW	RW	RW
197	Hornet (5th St)	Ridge Valley (O Street) to Bosque	57.5	RW	RW	RW
198	Hubble	Irvine Center Drive to Bunsen	56.1	RW	RW	RW
199	Irvine Boulevard	SR-133 NB Off- Ramp to Ridge Valley (O Street)	72.3	119	256	552
200	Irvine Boulevard	SR-133 SB Off-Ramp to SR-133 NB Off-Ramp	72.2	118	254	547
201	Irvine Boulevard	Sand Canyon to SR-133 SB Off-Ramp	73.0	128	275	592
202	Irvine Boulevard	Merit to Alton	71.6	108	232	500
203	Irvine Boulevard	Journey to Sand Canyon Avenue	71.7	109	236	507
204	Irvine Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	71.2	100	216	466
205	Irvine Boulevard	Pusan Way to Chinon (B Street)	71.0	98	211	455
206	Irvine Boulevard	Palo Lado to Yale Avenue	71.3	103	223	480
207	Irvine Boulevard	Culver Drive to Palo Lado	71.3	103	221	476
208	Irvine Boulevard	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	71.1	100	215	464
209	Irvine Boulevard	Old Myford Road to Market Place	71.2	101	217	467
210	Irvine Boulevard	Bosque (LY Street) to Modjeska	71.2	101	217	468
211	Irvine Boulevard	Jamboree Road to Old Myford Road	71.1	99	214	461

Table 8

212	Irvine Boulevard	Market Place to SR-261 SB Off-Ramp	71.1	99	213	459
213	Irvine Boulevard	Jeffrey Road to Groveland	71.1	100	215	464
214	Irvine Boulevard	Bake Parkway to Lake Forest Drive	70.6	92	198	426
215	Irvine Boulevard	Independence Way (The Groves)/The Groves to Jeffrey Road	70.8	94	204	438
216	Irvine Boulevard	Chinon (B Street) to Merit	70.5	90	194	418
217	Irvine Boulevard	SR-261 NB Off-Ramp to Central Park	70.7	93	200	431
218	Irvine Boulevard	Pueblo Norte to Independence Way (The Groves)/ Parkwood	70.6	92	197	425
219	Irvine Boulevard	Yale Avenue to Pueblo Norte	70.5	91	197	423
220	Irvine Boulevard	Modjeska to Pusan Way	70.2	87	188	404
221	Irvine Boulevard	Central Park Avenue to Culver Drive	70.0	84	182	392
222	Irvine Boulevard	Parker to Bake Parkway	69.7	RW	173	372
223	Irvine Boulevard	Alton Parkway to Fairbanks	68.6	RW	146	315
224	Irvine Center Drive	Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp	72.8	122	263	567
225	Irvine Center Drive	Orange Tree to Valley Oak Drive	72.0	115	247	532
226	Irvine Center Drive	I-405 SB Off-Ramp to Research	72.3	114	246	529
227	Irvine Center Drive	Irvine Valley College to Orange Tree	71.9	113	244	525
228	Irvine Center Drive	Fontaine Avenue to Jeffrey Road	71.7	109	236	507
229	Irvine Center Drive	Culver Drive to Deerwood	71.6	108	233	502
230	Irvine Center Drive	Deerwood to Yale Avenue	71.6	108	232	499
231	Irvine Center Drive	Yale Avenue to Fontaine Avenue	71.7	109	234	504
232	Irvine Center Drive	Jeffrey Road to Irvine Valley College	71.5	106	229	493
233	Irvine Center Drive	Alton Parkway to Spectrum	71.4	103	223	480
234	Irvine Center Drive	Spectrum to Pacifica	71.3	103	221	476
235	Irvine Center Drive	Hearthstone to Culver Drive	71.0	98	211	455
236	Irvine Center Drive	Charter to Barranca Parkway	71.0	97	210	452
237	Irvine Center Drive	Jamboree Road to Harvard Avenue	70.6	92	198	426
238	Irvine Center Drive	Pacifica to Entertainment (Enterprise/Fortune)	70.7	94	203	437
239	Irvine Center Drive	Valley Oak Drive to Sand Canyon Avenue	70.7	94	202	435
240	Irvine Center Drive	Harvard Avenue to Hearthstone	70.3	89	191	411
241	Irvine Center Drive	Research to Hubble	70.0	84	180	389
242	Irvine Center Drive	Barranca Parkway to Gateway Boulevard	70.2	86	185	399

Table 8

243	Irvine Center Drive	Bake Parkway to Muller	69.8	RW	176	380
244	Irvine Center Drive	Discovery to Charter	70.2	87	188	405
245	Irvine Center Drive	Hubble to Bake Parkway	69.6	RW	170	365
246	Irvine Center Drive	Muller to Tesla	69.4	RW	165	355
247	Irvine Center Drive	Sand Canyon Avenue to Odyssey	69.4	RW	165	356
248	Irvine Center Drive	Tesla to Scientific Way	69.1	RW	156	337
249	Irvine Center Drive	Scientific Way to Lake Forest Drive	68.9	RW	152	328
250	Irvine Center Drive	Gateway Boulevard to Alton Parkway	68.9	RW	153	330
251	Irvine Center Drive	Laguna Canyon Road to Discovery	68.9	RW	153	329
252	Irvine Center Drive	Odyssey to Laguna Canyon Road	68.9	RW	152	327
253	Irvine Center Drive (Edinger)	Redhill Avenue to Jamboree Road	71.1	99	213	458
254	Jamboree Road	I-5 SB Off-Ramp to I-5 NB Off-Ramp	74.5	168	362	780
255	Jamboree Road	I-405 SB Off-Ramp to I-405 NB Off Ramp	75.7	191	411	885
256	Jamboree Road	Walnut Avenue to Michelle Drive	73.9	153	329	709
257	Jamboree Road	I-405 NB Off-Ramp to Main Street	77.0	293	632	1362
258	Jamboree Road	Michelle Drive to I-5 SB Off-Ramp	73.6	146	314	676
259	Jamboree Road	Main Street to Kelvin Avenue	76.4	268	577	1244
260	Jamboree Road	Michelson Drive to I-405 SB Off-Ramp	74.4	217	467	1007
261	Jamboree Road	Kelvin Avenue to McGaw Avenue	76.1	255	549	1183
262	Jamboree Road	McGaw Avenue to Alton Parkway	76.0	253	545	1174
263	Jamboree Road	Birch Street to Campus Drive	73.1	135	291	626
264	Jamboree Road	Dupont Drive to Michelson Drive	74.0	148	318	685
265	Jamboree Road	Alton Parkway to Beckman	75.7	238	513	1106
266	Jamboree Road	Fairchild Road to Birch Street	73.6	139	300	646
267	Jamboree Road	Beckman to Barranca Parkway	75.3	226	487	1049
268	Jamboree Road	I-5 NB Off-Ramp to El Camino Real	75.1	218	470	1013
269	Jamboree Road	Campus Drive to Dupont Drive	73.2	131	283	610
270	Jamboree Road	El Camino Real to West Drive	74.9	213	458	988
271	Jamboree Road	West Drive to Bryan Avenue	74.9	213	460	991
272	Jamboree Road	Bryan Avenue to Irvine Boulevard	74.6	202	436	939
273	Jamboree Road	Koll Center to Fairchild Road	72.9	125	269	580

Table 8

274	Jamboree Road	MacArthur Boulevard to Koll Center	72.8	124	267	575
275	Jamboree Road	Irvine Boulevard to Portola Parkway	70.7	93	201	433
276	Jamboree Road	Warner Avenue to Edinger Avenue	79.2	261	563	1213
277	Jamboree Road	Barranca Parkway to Warner Avenue	78.4	231	497	1072
278	Jamboree Road	Edinger Avenue to Walnut Avenue	78.0	218	470	1012
279	Jeffrey Road	Walnut Avenue to I-5 NB Off-Ramp	71.4	104	225	485
280	Jeffrey Road	I-5 NB Off-Ramp to Roosevelt	72.3	115	247	532
281	Jeffrey Road	Poplar (Meadows) to Walnut Avenue	71.0	97	210	452
282	Jeffrey Road	Alton Parkway to Barranca Parkway	70.9	97	209	451
283	Jeffrey Road	Irvine Center Drive to Poplar (Meadows)	70.8	94	203	438
284	Jeffrey Road	I-405 NB Off-Ramp to Quail Creek	71.0	97	210	452
285	Jeffrey Road	Barranca Parkway to Irvine Valley College	70.7	93	201	434
286	Jeffrey Road	Quail Creek to Alton Parkway	70.8	95	205	442
287	Jeffrey Road	Irvine Valley College to Irvine Center Drive	70.5	90	194	419
288	Jeffrey Road	Trabuco Road to Hideaway	69.7	RW	173	372
289	Jeffrey Road	Hideaway to Bryan Avenue	69.7	RW	173	372
290	Jeffrey Road	Roosevelt to Grove	70.4	85	184	396
291	Jeffrey Road	Grove to Trabuco Road	70.2	82	177	382
292	Jeffrey Road	Bryan Avenue to Irvine Boulevard	68.6	RW	145	312
293	Jeffrey Road	Encore to Portola Parkway	65.5	RW	91	196
294	Jeffrey Road	Irvine Boulevard to Encore	65.4	RW	89	191
295	Jeronimo Road	Goodyear to Bake Parkway	64.6	RW	RW	127
296	Jeronimo Road	Alton Parkway to Goodyear	64.3	RW	RW	121
297	Laguna Canyon Road	Old Laguna Canyon Road to Lake Forest Drive	73.4	141	304	655
298	Laguna Canyon Road	Laguna Canyon Freeway to Quail Hill Parkway	70.0	RW	134	289
299	Laguna Canyon Road	Discovery to Sand Canyon Avenue	69.5	RW	125	270
300	Laguna Canyon Road	I-405 Overcrossing to Pasteur	68.0	RW	79	171
301	Laguna Canyon Road	Irvine Center Drive to Discovery	69.0	RW	115	248
302	Laguna Canyon Road	Quail Hill Parkway to I-405 Overcrossing	68.0	RW	79	171
303	Laguna Canyon Road	Pasteur to Alton Parkway	67.1	RW	86	185
304	Laguna Canyon Road	Waterworks to Irvine Center Drive	67.5	RW	92	197

Table 8

305	Laguna Canyon Road	Alton Parkway to Barranca Parkway	66.4	RW	77	166
306	Laguna Canyon Road	Barranca Parkway to Waterworks	66.3	RW	76	164
307	Lake Forest Drive	Hidden Canyon to Laguna Canyon Road	69.6	RW	126	271
308	Lake Forest Drive	Bake Parkway to Hidden Canyon (Romano)	69.5	RW	125	269
309	Lake Forest Drive	Tesla to Bake Parkway	66.6	RW	108	233
310	Lake Road	Alton Parkway to Barranca Parkway	59.2	RW	RW	RW
311	Lynx	Irvine Boulevard to Astor	53.2	RW	RW	RW
312	MacArthur Boulevard	I-405 SB Off-Ramp to Michelson Drive	76.8	284	612	1318
313	MacArthur Boulevard	Main Street to I-405 NB Off-Ramp	76.7	280	603	1299
314	MacArthur Boulevard	I-405 NB Off-Ramp and I-405 SB Off-Ramp	76.6	277	597	1287
315	MacArthur Boulevard	Jamboree Road to Fairchild Road	69.9	RW	178	382
316	MacArthur Boulevard	Fairchild Road to University Drive	69.8	RW	176	379
317	MacArthur Boulevard	Fitch to Red Hill Avenue	70.5	87	187	403
318	MacArthur Boulevard	Michelson Drive to Douglas	72.3	143	308	664
319	MacArthur Boulevard	Douglas to Campus Drive	72.3	141	305	656
320	MacArthur Boulevard	Skypark to Main Street	69.5	RW	160	346
321	MacArthur Boulevard	Redhill Avenue to Skypark	68.4	RW	141	304
322	MacArthur Boulevard	Birch Street to Jamboree Road	67.2	RW	118	254
323	MacArthur Boulevard	Campus Drive to Birch Street	69.5	RW	200	430
324	Main Street	Gillette Avenue to Von Karman Avenue	70.9	92	199	428
325	Main Street	MacArthur Boulevard to Mercantile	70.3	84	181	391
326	Main Street	Executive Park to MacArthur Boulevard	68.5	RW	143	308
327	Main Street	Von Karman Avenue to Cartwright	68.5	RW	143	308
328	Main Street	McDermott to Red Hill Avenue	68.1	RW	135	292
329	Main Street	Red Hill Avenue to Executive Circle	68.0	RW	134	288
330	Main Street	Jamboree Road to Union	67.9	RW	131	282
331	Main Street	Culver Drive to West Yale Loop	67.2	RW	87	188
332	Main Street	Siglo to Jamboree Road	67.7	RW	128	275
333	Main Street	Veneto to Harvard Avenue	67.6	RW	125	269
334	Main Street	Paseo Westpark to Culver Drive	66.4	RW	77	166
335	Main Street	Harvard Avenue to San Mateo	66.3	RW	76	165

Table 8

336	Marine Way	Sand Canyon Avenue to Ridge Valley (O Street)	72.3	72	154	332
337	Marine Way	Alton Parkway to Bake Parkway	69.5	RW	124	267
338	Marine Way	Lynx to Barranca Parkway	69.3	RW	122	262
339	Marine Way	County Access to Treble	68.5	RW	107	230
340	Marine Way	Ridge Valley (O Street) to Skyhawk	68.3	RW	104	224
341	Marine Way	Skyhawk to County Access	67.4	RW	90	194
342	Marine Way	Barranca Parkway to Alton Parkway	66.8	RW	82	177
343	Marine Way	Treble to Lynx	66.6	RW	79	171
344	McGaw Avenue	Von Karman Avenue to Jamboree Road	64.5	RW	RW	125
345	McGaw Avenue	Red Hill Avenue to Von Karman Avenue	64.4	RW	RW	123
346	McGaw Avenue	Daimler to Red Hill Avenue	62.4	RW	RW	91
347	McGaw Avenue	Jamboree Road to Murphy Avenue	59.5	RW	RW	RW
348	Meadowood	Culver Drive to Canyonwood	59.6	RW	RW	RW
349	Meridian	Spectrum to Alton Parkway	55.7	RW	RW	RW
350	Meridian	Alton Parkway to Gateway Boulevard	54.8	RW	RW	RW
351	Merit	Irvine Boulevard to Cadence	58.0	RW	RW	RW
352	Michelson Drive	Riparian to Harvard Avenue	68.3	RW	104	224
353	Michelson Drive	Almond Tree Lane to Yale Avenue	67.2	RW	53	113
354	Michelson Drive	Von Karman Avenue to Obsidian	68.1	RW	101	218
355	Michelson Drive	Parkside to Culver Drive	67.8	RW	96	206
356	Michelson Drive	Gillman to Seton/Sandburg Way	66.9	RW	50	108
357	Michelson Drive	Carlson to Prince	67.3	RW	107	231
358	Michelson Drive	MacArthur Boulevard to Dupont Drive	67.5	RW	92	198
359	Michelson Drive	Harvard Avenue to Parkside	66.8	RW	83	178
360	Michelson Drive	Bixby to Von Karman Avenue	66.9	RW	83	179
361	Michelson Drive	Jamboree Road to Carlson	69.6	RW	122	262
362	Michelson Drive	Teller to Jamboree Road	69.6	RW	122	263
363	Michelson Drive	Jordan East to University Drive	67.1	RW	41	89
364	Michelson Drive	Culver Drive to Angell	66.3	RW	49	105
365	Modjeska (A Street)	Portola Springs to Irvine Boulevard	71.7	39	84	182
366	Modjeska (A Street)	South of Irvine Boulevard	61.0	RW	RW	44



Table 8

367	Muirlands Boulevard	Bake Parkway to City Limits	67.3	RW	89	192
368	Muirlands Boulevard	Alton Parkway to Sterling	66.2	RW	75	162
369	Muirlands Boulevard	Wrigley to Bake Parkway	66.3	RW	76	165
370	Newport Coast Drive	SR-73 NB Off-Ramp to Turtle Ridge	66.7	RW	81	174
371	Newport Coast Drive	Turtle Crest to Bonita Canyon Drive	65.1	RW	64	137
372	Nightmist	Sand Canyon Avenue to Tulip (Road C)	61.7	RW	RW	81
373	Northwood	Yale Avenue to Savannah	62.5	RW	RW	55
374	Northwood	Goldrush to Yale Avenue	61.6	RW	RW	48
375	Oak Canyon Drive	Valley Oak Drive to Sand Canyon Avenue	69.7	RW	77	165
376	Pacifica	Gateway to Barranca Parkway	65.3	RW	66	142
377	Pacifica	Alton Parkway to Gateway	64.2	RW	RW	118
378	Pacifica	Irvine Center Drive to Fortune Drive (Spectrum Center Drive)	62.7	RW	RW	95
379	Pacifica	Meridian to Alton Parkway	60.9	RW	RW	71
380	Park Place	Christamon South to Yale Avenue	57.0	RW	RW	RW
381	Portola Parkway	Bee Canyon Access Road to Sand Canyon Avenue	71.8	83	179	385
382	Portola Parkway	Jeffrey Road to Bee Canyon Access Road	71.8	83	178	384
383	Portola Parkway	Arrowhead to Ridge Valley Parkway	71.5	79	170	366
384	Portola Parkway	Sand Canyon Avenue to Arrowhead	71.1	74	160	346
385	Portola Parkway	Portola Springs to SR-241 SB Off-Ramp	70.1	64	137	296
386	Portola Parkway	Gatepark to Culver Drive	70.9	96	207	445
387	Portola Parkway	ETC-6 (SR-261) NB Off-Ramp to Gatepark	70.8	95	205	441
388	Portola Parkway	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.7	93	201	432
389	Portola Parkway	Jamboree Road to Bellevue	70.6	93	199	430
390	Portola Parkway	Bellevue to ETC-6 (SR-261) SB Off-Ramp	70.6	92	198	427
391	Portola Parkway	Yale Avenue to Jeffrey Road	70.4	89	193	415
392	Portola Parkway	Culver Drive to Yale Avenue	69.8	RW	175	377
393	Portola Parkway	Silverado to Portola Springs	68.7	RW	110	236
394	Pusan	Irvine Boulevard to Cadence	56.1	RW	RW	RW
395	Quail Hill Parkway	Shady Canyon Drive to Passage	67.5	RW	92	198
396	Quail Hill Parkway	East Knollcrest to Laguna Canyon Road	65.4	RW	67	144
397	Quassar Drive (Spectrum)	Irvine Center Drive to Spectrum Center Drive (Fortune)	55.0	RW	RW	RW

Table 8

398	Red Hill Avenue	MacArthur Boulevard to McGaw Avenue	71.7	108	233	503
399	Red Hill Avenue	I-405 Over Crossing to Main Street	70.3	65	141	303
400	Red Hill Avenue	Alton Parkway to Deere Avenue	70.1	86	185	398
401	Red Hill Avenue	McGaw Avenue to Alton Parkway	70.1	85	183	394
402	Red Hill Avenue	Deere Avenue to Barranca Parkway	69.9	RW	177	382
403	Red Hill Avenue	Skypark East to MacArthur Boulevard	71.5	76	163	352
404	Red Hill Avenue	Main Street to Skypark East	70.9	69	148	320
405	Research Drive	Hubble to Bake Parkway	69.7	RW	128	276
406	Research Drive	Scientific to Lake Forest Drive	67.8	RW	95	206
407	Research Drive	Bake Parkway to Muller	66.8	RW	82	177
408	Research Drive	Irvine Center Drive to Bunsen	65.8	RW	70	151
409	Ridge Valley (O Street)	Irvine Boulevard to Trabuco Road (Great Park Boulevard)	67.3	RW	89	191
410	Ridge Valley (O Street)	Portola Parkway to Irvine Boulevard	66.4	RW	78	167
411	Ridge Valley (O Street)	Trabuco Road (Great Park Boulevard) to Marine Way	66.0	RW	73	157
412	Ridge Valley (O Street)	Ranchland to Portola Parkway	58.1	RW	RW	RW
413	Ridgeline Drive	Concordia East to University Drive	68.8	RW	71	154
414	Ridgeline Drive	Turtle Rock Drive to San Simeon	68.5	RW	68	147
415	Rockfield Avenue	Whatney to McLaren	67.8	RW	96	206
416	Rockfield Avenue	Bake Parkway to Whatney	64.4	RW	RW	122
417	Rockfield Avenue	Thomas to Bake Parkway	63.2	RW	RW	101
418	Roosevelt	Jeffrey Road to Vision	66.7	RW	81	175
419	Roosevelt	Yale Avenue to Van Buren	68.3	RW	50	108
420	Roosevelt	Vision to Bay Tree	66.5	RW	79	170
421	Roosevelt	Nimitz to Jeffrey Road	65.9	RW	72	155
422	Roosevelt	Tulip (Road C) to Sand Canyon Avenue	65.7	RW	70	150
423	Royal Oak	Alton Parkway to Eaglecreek	64.0	RW	RW	56
424	Sand Canyon Avenue	Oak Canyon Drive to Burt Road	72.2	118	254	547
425	Sand Canyon Avenue	Irvine Center Drive to Oak Canyon Drive	72.0	115	247	532
426	Sand Canyon Avenue	I-405 NB Off-Ramp to Alton Parkway	74.7	123	265	571
427	Sand Canyon Avenue	Burt Road to I-5 SB Off-Ramp	72.8	123	265	571
428	Sand Canyon Avenue	Marine to I-5 NB Off-Ramp	74.8	208	448	965

Table 8

429	Sand Canyon Avenue	Trabuco Road to Towngate	71.2	101	217	468
430	Sand Canyon Avenue	Barranca Parkway to Waterworks	71.0	98	211	454
431	Sand Canyon Avenue	I-5 SB Off-Ramp to Marine	74.0	184	396	854
432	Sand Canyon Avenue	Hospital to Barranca Parkway	70.9	96	207	445
433	Sand Canyon Avenue	Nightmist to Roosevelt	73.6	173	372	801
434	Sand Canyon Avenue	I-405 SB Off-Ramp to I-405 NB Off-Ramp	73.6	104	224	483
435	Sand Canyon Avenue	I-5 NB Off-Ramp to Nightmist	73.6	174	375	808
436	Sand Canyon Avenue	Towngate to Irvine Boulevard	70.6	92	199	429
437	Sand Canyon Avenue	Waterworks to Irvine Center Drive	70.3	88	189	408
438	Sand Canyon Avenue	Irvine Boulevard to Portola Parkway	70.3	66	141	304
439	Sand Canyon Avenue	Roosevelt to Trabuco Road	72.8	153	331	712
440	Sand Canyon Avenue	Alton Parkway to Hospital	70.9	91	197	424
441	Sand Canyon/Shady Canyon	Quail Hill Parkway to I-405 SB Ramps	71.8	79	170	366
442	Scientific Way	Irvine Center Drive to Wald	55.0	RW	RW	RW
443	Shady Canyon Drive	Culver Drive/Bonita Canyon Drive to Cloverfield	69.4	RW	73	158
444	Shady Canyon Drive	Bommer Canyon Road to Sunnyhill	67.8	RW	77	165
445	Skyhawk	Great Park Boulevard to Marine Way	59.5	13	27	58
446	Southwood	Yale Avenue to Colt	60.6	9	19	41
447	Southwood	Challenger to Yale Avenue	60.4	9	18	40
448	Spectrum Center Drive (Fortune Drive)	Pacifica to Quassar Drive (Spectrum )	61.9	18	39	84
449	Spectrum Center Drive (FortuneDrive)	Quassar Drive (Spectrum ) to Gatewayb	62.5	20	42	92
450	Sunnyhill	Shady Canyon Drive to Turtle Rock Drive	57.8	10	21	44
451	Technology Drive	Barranca Parkway to Alton Parkway	70.8	71	152	327
452	Technology Drive	Old Laguna Canyon Road to I-5/SR-133 Undercrossing	69.6	59	127	273
453	Technology Drive	I-5/SR-133 to Barranca Parkway	69.4	57	123	266
454	Technology Drive	Ada to Alton Parkway	63.7	24	51	111
455	Toledo Way	Bake Parkway to City Limits	65.6	32	69	149
456	Toledo Way	Goodyear to Bake Parkway	64.7	28	60	129
457	Toledo Way	Alton Parkway to Parker	64.5	27	58	124
458	Trabuco Road	Keystone to Sand Canyon Avenue	67.3	41	88	191
459	Trabuco Road	Jeffrey Road to Keystone	67.1	40	87	186

Table 8

460	Trabuco Road	Culver Drive to I-5 NB Off-Ramp	66.9	39	83	179
461	Trabuco Road	Monroe to Yale Avenue	66.9	39	84	181
462	Trabuco Road	I-5 NB Off-Ramp to Monroe	66.8	38	82	178
463	Trabuco Road	Yale Avenue to Remington	66.5	37	79	170
464	Trabuco Road	Remington to Jeffrey Road	66.2	35	76	163
465	Turtle Ridge Drive	Federation Way to Bonita Canyon	68.7	52	111	239
466	Turtle Rock Drive	Ridgeline to Willowleaf	67.9	27	58	126
467	Turtle Rock Drive	Silkwood to Sunnyhill	67.8	27	58	125
468	Turtle Rock Drive	Canyon Park to Ridgeline	67.1	24	52	111
469	Turtle Rock Drive	Sunnyhill to Southernwood	64.0	15	32	70
470	Turtle Rock Drive	Campus Drive to Hillgate	64.2	26	55	118
471	Turtle Rock Drive	Paseo Segovia to Campus Drive	65.4	20	43	92
472	University Drive	Golden Glow to Yale Avenue	73.1	100	215	464
473	University Drive	Ridgeline to Michelson Drive	72.6	113	243	522
474	University Drive	Culver Drive to Golden Glow	72.9	98	211	455
475	University Drive	Yale Avenue to Ridgeline	72.4	91	196	422
476	University Drive	Michelson Drive to I-405 SB Off-Ramp	72.8	129	278	599
477	University Drive	Mesa to Campus Drive	74.6	122	263	567
478	University Drive	MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	74.7	123	266	572
479	University Drive	California Avenue to Mesa	74.5	120	259	558
480	University Drive	Campus Drive to Harvard Avenue	70.8	95	205	443
481	University Drive	SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	71.8	65	141	304
482	University Drive	SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps	70.4	89	193	415
483	University Drive	San Joaquin to Culver Drive	69.9	83	178	384
484	University Drive	Harvard Avenue to San Joaquin	69.9	82	178	383
485	Valley Oak Drive	Hawkcreek to Barranca Parkway	68.1	47	100	216
486	Valley Oak Drive	Irvine Center Drive to Oak Canyon Drive	69.5	47	100	216
487	Valley Oak Drive	Barranca Parkway to Irvine Center Drive	67.2	41	88	189
488	Valley Oak Drive	Alton Parkway to Hawkcreek	64.9	28	61	132
489	Von Karman Avenue	Marriott to Morse Avenue	71.0	73	158	340
490	Von Karman Avenue	Michelson Drive to Quartz	70.9	72	154	332

Table 8

491	Von Karman Avenue	McGaw Avenue to Alton Parkway	70.8	71	152	328
492	Von Karman Avenue	Alton Parkway to Barranca Parkway	70.4	80	173	373
493	Von Karman Avenue	Main Street to Anchor	70.7	70	150	324
494	Von Karman Avenue	Anchor to McGaw Avenue	70.6	68	147	316
495	Von Karman Avenue	Morse to Main Street	70.3	66	141	304
496	Von Karman Avenue	Martin to Dupont Drive	69.7	59	128	276
497	Von Karman Avenue	Campus Drive to Martin	69.6	58	126	271
498	Von Karman Avenue	Dupont Drive to Michelson Drive	69.6	58	126	271
499	Walnut Avenue	Jeffrey Road to I-5 SB Off-Ramp	71.0	72	156	336
500	Walnut Avenue	Myford Road to Jamboree Road SB Off-Ramp	69.2	55	120	258
501	Walnut Avenue	The Mall Street to Culver Drive	68.9	52	113	244
502	Walnut Avenue	Harvard Avenue to The Mall Street	68.8	52	113	243
503	Walnut Avenue	Franciscan Street to Ravenwood Street	68.6	50	108	233
504	Walnut Avenue	Ravenwood Street to Yale Avenue	68.5	49	107	230
505	Walnut Avenue	Culver Drive to Franciscan Street	68.4	49	106	228
506	Walnut Avenue	Peters Canyon Road to Harvard Avenue	68.1	63	135	291
507	Walnut Avenue	Jamboree Road NB Off-Ramp to Peters Canyon Road	67.9	61	131	283
508	Walnut Avenue	Yale Avenue to Kazan Street	67.3	42	90	193
509	Walnut Avenue	Wisteria to Jeffrey Road	67.2	41	88	190
510	Warner Avenue	Jamboree Road SB Off-ramp to Construction North	70.1	64	138	297
511	Warner Avenue	Construction North to Harvard Avenue	68.6	50	108	233
512	Warner Avenue	Harvard Avenue to Paseo Westpark	67.1	40	86	185
513	Warner Avenue	Santa Ynez to Culver Drive	66.2	35	75	162
514	Warner Avenue	Culver Drive to West Yale Loop	65.9	33	72	155
515	West Yale Loop	Alton Parkway to Blue Lake North	64.0	25	53	115
516	West Yale Loop	Eagle Run to Main Street	63.8	24	52	112
517	West Yale Loop	Thunder Run to Yale Avenue	64.0	25	54	116
518	West Yale Loop	Main Street to Timber Run	62.9	21	45	97
519	West Yale Loop	Yale Avenue to Shorebird	63.3	22	48	104
520	West Yale Loop	Warner Avenue to Stonecreek South	62.7	20	44	95
521	West Yale Loop	Barranca Parkway to Alton Parkway	62.4	20	42	91

Table 8

522	West Yale Loop	Stonecreek North to Warner Avenue	62.6	20	43	94
523	West Yale Loop	Birdsong to Barranca Parkway	62.5	20	42	91
524	Westwood	Yorktown to Bryan Avenue	63.5	14	30	64
525	Westwood	Bryan Avenue to Leaf	61.6	10	22	48
526	Yale Avenue	Deerfield Avenue to Winvale Avenue	68.6	30	65	141
527	Yale Avenue	Hicks Canyon Drive to Meadowood	67.3	25	54	116
528	Yale Avenue	Walnut Avenue to Roosevelt	71.2	48	103	222
529	Yale Avenue	Roosevelt to Trabuco Road	67.1	40	86	185
530	Yale Avenue	Irvine Center Drive to Deerfield Avenue	66.8	38	82	178
531	Yale Avenue	West Yale Loop to Irvine Center Drive	66.6	37	79	171
532	Yale Avenue	Winvale Avenue to Karen Ann Lane	65.8	33	70	151
533	Yale Avenue	Karen Ann Lane to Walnut Avenue	65.8	33	70	151
534	Yale Avenue	Trabuco Road to Southwood	65.7	32	69	149
535	Yale Avenue	Southwood to Bryan Avenue	65.4	31	67	144
536	Yale Avenue	Northwood to Irvine Boulevard	65.2	30	64	138
537	Yale Avenue	Bryan Avenue to Monticello	65.0	29	63	135
538	Yale Avenue	Irvine Boulevard to Park Place	64.2	26	56	120
539	Yale Avenue	University Drive to Royce	63.5	18	40	86
540	Yale Court	Arborwood to Portola Parkway	60.4	9	18	40

<sup>1</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest receiving land use.  
 "RW" = Location of the respective noise contour falls within the right-of-way of the road.

Table 9

Table 9: Preferred Plan Conditions Noise Contours

ID	Road	Segment	CNEL at Nearest Receiving Land Use (dBA) <sup>1</sup>	Distance to Contour from Centerline (Feet)		
				70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Ada	Barranca Parway to Marine Way	70.8	42	91	196
2	Ada	Alton Parkway to Barranca Parkway	69.2	RW	120	258
3	Alton Parkway	Enterprise to I-5 NB Off-Ramp	73.9	152	328	706
4	Alton Parkway	I-5 NB Off-Ramp to Technology Drive West	74.5	160	345	742
5	Alton Parkway	East Yale Loop to Jeffrey Road	71.8	82	176	380
6	Alton Parkway	Gateway Boulevard to Enterprise	71.7	109	235	507
7	Alton Parkway	Jeffrey Road to Royal Oak	70.7	70	151	324
8	Alton Parkway	Daimler Street to Red Hill Avenue	70.6	69	148	320
9	Alton Parkway	Culver Drive to West Yale Loop	70.6	68	147	318
10	Alton Parkway	West Yale Loop to Lake Road	70.6	68	147	317
11	Alton Parkway	Technology Drive West to Ada	72.4	116	250	539
12	Alton Parkway	Creek Road to East Yale Loop	70.5	68	146	314
13	Alton Parkway	Red Hill Avenue to Von Karman Avenue	70.4	66	143	308
14	Alton Parkway	Lake Road to Creek Road	70.3	65	141	303
15	Alton Parkway	Telemetry to Banting	70.3	66	142	305
16	Alton Parkway	Irvine Boulevard to Commercentre	70.8	95	205	443
17	Alton Parkway	Jenner to Telemetry	70.3	65	140	302
18	Alton Parkway	Irvine Center Drive to Gateway Boulevard	71.0	97	210	452
19	Alton Parkway	Sand Canyon Avenue to Hospital	73.7	105	227	489
20	Alton Parkway	Laguna Canyon Road to Jenner	70.2	64	138	298
21	Alton Parkway	Technology Drive East to Barranca Pkwy/Muirlands Blvd	70.8	95	205	441
22	Alton Parkway	Royal Oak to Valley Oak Drive	70.0	RW	134	288
23	Alton Parkway	Banting to Pacifica	69.9	RW	133	286
24	Alton Parkway	Barranca Pkwy/Muirlands Blvd to Jeronimo Road	70.3	88	189	407
25	Alton Parkway	Ada to Technology Drive East	70.3	88	191	411

Table 9

26	Alton Parkway	Von Karman Avenue to Jamboree Road	69.6	RW	127	273
27	Alton Parkway	Jeronimo Road to Hughes	70.0	84	181	390
28	Alton Parkway	Hughes to Morgan	69.8	RW	174	376
29	Alton Parkway	Morgan to Toledo Way	69.0	RW	156	336
30	Alton Parkway	San Marino to Culver Drive	69.1	RW	157	338
31	Alton Parkway	Jamboree Road to Murphy Avenue	68.9	RW	154	332
32	Alton Parkway	Hospital to Laguna Canyon Road	71.9	81	174	374
33	Alton Parkway	Valley Oak Drive to Sand Canyon Avenue	71.8	79	169	364
34	Alton Parkway	Murphy Avenue to Harvard Avenue	68.7	RW	149	322
35	Alton Parkway	Foster to Irvine Boulevard	68.7	RW	148	318
36	Alton Parkway	Fairbanks to Foster	68.4	RW	142	307
37	Alton Parkway	Toledo Way to Berteza	68.4	RW	142	306
38	Alton Parkway	Pacifica to Meridian	71.5	76	164	353
39	Alton Parkway	Berteza to Fairbanks	68.3	RW	140	301
40	Alton Parkway	Meridian to Irvine Center Drive	68.2	RW	137	294
41	Alton Parkway	Paseo Westpark to San Marino	68.1	RW	136	293
42	Alton Parkway	Harvard Avenue to Paseo Westpark	67.5	RW	124	268
43	Astor	Lynx to Fairbanks	67.0	RW	51	110
44	Astor	Cadence to Lynx	65.8	RW	42	91
45	Bake Parkway	I-5 NB Off-Ramp to Rockfield Boulevard	76.6	276	595	1282
46	Bake Parkway	Muirlands Boulevard to Jeronimo Road	72.9	131	283	609
47	Bake Parkway	Rockfield Boulevard to Muirlands Boulevard	75.0	216	466	1004
48	Bake Parkway	Jeronimo Road to Toledo Way	72.0	114	245	528
49	Bake Parkway	Toledo Way to Cromwell	71.6	108	232	501
50	Bake Parkway	Cromwell to Irvine Boulevard	71.6	107	232	499
51	Bake Parkway	Research Drive to I-5 SB Off-Ramp	69.5	RW	168	362
52	Bake Parkway	Irvine Center Drive to Research Drive	64.8	RW	RW	176
53	Bake Parkway	Lake Forest Drive to Irvine Center Drive	63.4	RW	RW	141
54	Banting	Alton Parkway to Barranca Parkway	60.2	RW	RW	64
55	Barranca Parkway	Pacifica to Irvine Center Drive	73.1	100	216	465
56	Barranca Parkway	Banting to Pacifica	72.7	94	203	438



Table 9

57	Barranca Parkway	I-5 HOV Ramp to Technology Drive West	72.6	94	202	436
58	Barranca Parkway	Technology Drive West to Ada	72.6	93	199	430
59	Barranca Parkway	Irvine Center Drive to I-5 HOV Ramp	72.3	90	193	416
60	Barranca Parkway	Culver Drive to West Yale Loop	72.2	87	188	406
61	Barranca Parkway	East Yale Loop to Jeffrey Road	72.1	86	186	400
62	Barranca Parkway	West Yale Loop to Lake Road	72.0	85	183	394
63	Barranca Parkway	Ada to Alton Parkway	72.0	85	184	396
64	Barranca Parkway	Lake Road to Creek Road	71.7	81	175	376
65	Barranca Parkway	Red Hill Avenue to Armstrong Avenue	74.7	204	440	949
66	Barranca Parkway	Discovery/Herchel to Banting	71.6	79	171	368
67	Barranca Parkway	Lyon to East Yale Loop	71.5	78	168	363
68	Barranca Parkway	Creek Road to Lyon	71.4	77	166	358
69	Barranca Parkway	Von Karman Avenue to Jamboree Road	72.7	120	259	559
70	Barranca Parkway	Sand Canyon Avenue to Laguna Canyon Road	70.8	70	152	327
71	Barranca Parkway	Armstrong Avenue to Von Karman Avenue	72.3	115	247	532
72	Barranca Parkway	Valley Oak Drive to Sand Canyon Avenue	70.6	69	149	320
73	Barranca Parkway	Jamboree Road to Construction Circle	71.0	98	212	457
74	Barranca Parkway	Santa Rosa to Culver Drive	70.9	96	207	446
75	Barranca Parkway	FedEx to Discovery/Herchel	70.2	64	139	299
76	Barranca Parkway	Jeffrey Road to Valley Oak Drive	70.2	64	138	298
77	Barranca Parkway	Laguna Canyon Road to FedEx	70.1	63	136	294
78	Barranca Parkway	Pullman Street to Red Hill Avenue	73.6	174	374	807
79	Barranca Parkway	Construction Circle to Fire Station	70.5	90	194	418
80	Barranca Parkway	Fire Station to Harvard Avenue	70.5	90	194	418
81	Barranca Parkway	Paseo Westpark to Santa Rosa	70.4	90	193	416
82	Barranca Parkway	Harvard Avenue to Paseo Westpark	70.1	85	183	394
83	Bay Tree	Trabuco Road to Roosevelt	57.2	RW	RW	RW
84	Beacon	Ridge Valley to Benchmark	59.6	RW	RW	RW
85	Benchmark (LN Street)	Ridge Valley (O Street) to Bosque	56.5	RW	RW	RW
86	Bison Avenue	SR-73 NB Off-Ramp to California Avenue	69.6	RW	127	274
87	Bonita Canyon Drive	MacArthur Boulevard to SR-73	70.3	78	168	363

Table 9

88	Bonita Canyon Drive	Turtle Ridge to Shady Canyon Drive	68.6	RW	129	279
89	Bonita Canyon Drive	Newport Coast Drive to Turtle Ridge	68.2	RW	123	264
90	Bonita Canyon Drive	SR-73 NB Off-Ramp to Newport Coast Drive	68.0	RW	118	255
91	Bosque	Cadence to Great Park Boulevard	65.2	RW	39	83
92	Bosque	Irvine Boulevard to Benchmark (LN Street)	63.5	RW	RW	64
93	Bosque	Benchmark to Cadence	63.1	RW	RW	60
94	Bosque	Great Park Boulevard to Beacon	56.7	RW	RW	RW
95	Bosque	Beacon to S 5th Street	56.1	RW	RW	RW
96	Bryan Avenue	Jamboree Road to Market Place	68.9	RW	115	247
97	Bryan Avenue	Market Place to El Camino Real	68.9	RW	113	244
98	Bryan Avenue	Rubicon to Culver Drive	68.9	RW	113	244
99	Bryan Avenue	El Camino Real to Rubicon	68.8	RW	113	243
100	Bryan Avenue	Eastwood to Jeffrey Road	66.9	RW	84	181
101	Bryan Avenue	Westwood to Yale Avenue	66.6	RW	80	173
102	Bryan Avenue	Culver Drive to Westwood	66.6	RW	79	171
103	Bryan Avenue	Yale Avenue to Eastwood	66.4	RW	77	167
104	Cadence	Pusan to Chinon	65.6	RW	41	88
105	Cadence	Bosque to Pusan	65.3	RW	39	85
106	Cadence	Ridge Valley (O Street) to Bosque	63.9	RW	RW	68
107	Cadence	Chinon to Merit	62.2	RW	RW	52
108	Cadence	Merit to Astor	59.4	RW	RW	RW
109	California Avenue	University Drive to Academy Way	66.2	RW	76	163
110	California Avenue	Campus Drive to Harvard Avenue	64.2	RW	RW	120
111	California Avenue	Theory to Bison Avenue	63.9	RW	RW	114
112	Campus Drive	Carlson Avenue to University Drive	73.2	82	176	379
113	Campus Drive	University Drive to Bridge Road	71.8	82	177	380
114	Campus Drive	Jamboree Road to Carlson Avenue	71.5	78	169	363
115	Campus Drive	Stanford Court to Berkeley Avenue	71.1	74	159	342
116	Campus Drive	California Avenue to Culver Drive	70.9	72	155	334
117	Campus Drive	Berkeley Avenue to Cornell	70.0	RW	134	288
118	Campus Drive	Martin to Von Karman Avenue	69.0	RW	115	247

Table 9

119	Campus Drive	Culver Drive to Paseo Montoya (Turtle Rock Drive)	68.7	RW	110	238
120	Campus Drive	Von Karman Avenue to Teller Avenue	68.3	RW	104	224
121	Campus Drive	MacArthur Boulevard to Martin	68.2	RW	102	220
122	Campus Drive	Teller Avenue to Jamboree Road	67.5	RW	91	196
123	Carlson Avenue	Michelson Drive to Campus Drive	67.9	RW	97	210
124	Chinon	Irvine Boulevard to Cadence	59.0	RW	RW	RW
125	Creek Road	Alton Parkway to Barranca Parkway	56.1	RW	RW	RW
126	Culver Drive	Michelson Drive to I-405 SB Off-Ramp	73.9	154	331	713
127	Culver Drive	I-405 SB Off-Ramp to I-405 NB Off Ramp	73.8	151	326	703
128	Culver Drive	I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)	73.9	153	330	711
129	Culver Drive	Scottsdale Drive to I-5 SB Off- Ramp	73.9	152	327	704
130	Culver Drive	I-405 NB Off-Ramp to San Leandro	73.6	146	315	678
131	Culver Drive	San Leandro to Main Street	73.3	140	302	650
132	Culver Drive	Harvard Avenue to University Drive	73.3	140	302	651
133	Culver Drive	Trabuco Road to Farwell Avenue	74.3	154	331	713
134	Culver Drive	Alton Parkway to Barranca Parkway	73.2	137	295	637
135	Culver Drive	Main Street to Alton Parkway	73.1	135	290	625
136	Culver Drive	Warner Avenue to Irvine Center Drive	73.0	133	286	615
137	Culver Drive	Walnut Avenue to Scottsdale Dive	72.9	131	283	609
138	Culver Drive	Barranca Parkway to Warner Avenue	72.8	130	280	603
139	Culver Drive	Shady Canyon Drive to Palo Verde	72.0	85	183	394
140	Culver Drive	Deerfield Avenue to Walnut Avenue	72.5	124	268	577
141	Culver Drive	Sandburg Way to Michelson Drive	72.5	124	267	575
142	Culver Drive	Irvine Center Drive to Deerfield Avenue	72.4	122	262	564
143	Culver Drive	Palo Verde to Campus Drive	71.6	80	172	370
144	Culver Drive	University Drive to Sandburg Way	72.2	118	253	546
145	Culver Drive	Farwell Avenue to Bryan Avenue	73.2	131	282	607
146	Culver Drive	Campus Drive to High School	72.1	116	249	537
147	Culver Drive	High School to Harvard Avenue	72.0	114	247	531
148	Culver Drive	Bryan Avenue to Florence	71.8	110	238	513
149	Culver Drive	Portola Parkway to Settlers	71.1	74	161	346

Table 9

150	Culver Drive	Florence to Irvine Boulevard	71.7	109	235	505
151	Culver Drive	Irvine Boulevard to Viewpark	70.5	91	196	423
152	Culver Drive	Viewpark to Meadowood	70.4	90	193	415
153	Culver Drive	Settlers to Furrow	68.4	RW	106	228
154	Culver Drive	Meadowood to Portola Parkway	69.0	RW	154	333
155	Discovery Drive	Irvine Center Drive to Laguna Canyon Road	64.0	RW	RW	115
156	Discovery Drive	Waterworks Way to Irvine Center Drive	61.2	RW	RW	75
157	East Yale Loop	Alton Parkway to Witherspoon	65.5	RW	67	145
158	East Yale Loop	Osborn Street to Barranca Parkway	65.3	RW	65	140
159	East Yale Loop	Yale Avenue to Springbrook South	64.8	RW	RW	131
160	East Yale Loop	Springbrook North to Alton Parkway	63.5	RW	RW	108
161	East Yale Loop	Woodspring to Yale Avenue	62.7	RW	RW	95
162	East Yale Loop	Barranca Parkway to Eastshore	62.4	RW	RW	91
163	Eastwood	Bryan Avenue to Monticello	60.8	RW	RW	42
164	Eastwood	Columbus to Bryan Avenue	58.7	RW	RW	RW
165	El Camino Real	Jamboree Road to Alliance (SR-261 Bridge)	67.1	RW	86	186
166	El Camino Real North	El Camino Real to Bryan Avenue	62.4	RW	RW	90
167	Fairbanks	Alton Parkway to Astor	69.7	RW	77	167
168	Fairbanks	Irvine Boulevard to Alton Parkway	66.9	RW	50	108
169	Fairchild Road	MacArthur Boulevard to Jamboree Road	64.1	RW	RW	117
170	Gateway Boulevard	Alton Parkway to Irvine Center Drive	63.3	RW	RW	103
171	Gateway Boulevard	Spectrum Center Drive (Fortune Drive) to Alton Parkway	62.1	RW	RW	86
172	Gateway Boulevard	Irvine Center Drive to Meridian	59.1	RW	RW	RW
173	Great Park Boulevard	Sand Canyon to Ridge Valley	74.4	119	256	551
174	Great Park Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	70.2	64	139	299
175	Great Park Boulevard (EB)	Bosque to Skyhawk	68.8	RW	67	144
176	Great Park Boulevard (WB)	Bosque to Skyhawk	68.3	RW	62	134
177	Harvard Avenue	University Drive to Michelson Drive	72.0	51	109	236
178	Harvard Avenue	Michelson Drive to Coronado	70.4	67	144	310
179	Harvard Avenue	San Marino to Alton Parkway	70.1	64	138	297
180	Harvard Avenue	Coronado to Main Street	70.1	64	137	295

Table 9

181	Harvard Avenue	San Carlo to San Marino	70.0	63	136	292
182	Harvard Avenue	Main Street to San Carlo	70.0	RW	134	289
183	Harvard Avenue	Alton Parkway to San Leon	68.8	RW	111	239
184	Harvard Avenue	San Juan to Barranca Parkway	68.8	RW	111	239
185	Harvard Avenue	San Leon to San Juan	68.6	RW	108	233
186	Harvard Avenue	Irvine Center Drive to Deerfield Avenue	67.4	RW	91	195
187	Harvard Avenue	Deerfield Avenue to Poplar Street	67.3	RW	90	193
188	Harvard Avenue	Barranca Parkway to Warner Avenue	67.8	RW	97	208
189	Harvard Avenue	Bridge Road to University Drive	67.8	RW	96	207
190	Harvard Avenue	Paseo Westpark to Irvine Center Drive	67.8	RW	96	208
191	Harvard Avenue	Poplar Street to Walnut Avenue	68.7	RW	88	191
192	Harvard Avenue	California Avenue to Berkeley Avenue	67.2	RW	88	190
193	Harvard Avenue	Culver Drive to California Avenue	67.2	RW	88	189
194	Harvard Avenue	Berkeley to Bridge Road	67.1	RW	87	187
195	Harvard Avenue	Warner Avenue to Paseo Westpark	66.8	RW	82	176
196	Hicks Canyon Drive	Delamesa to Yale Avenue	58.2	RW	RW	RW
197	Hornet (5th St)	Ridge Valley (O Street) to Bosque	57.5	RW	RW	RW
198	Hubble	Irvine Center Drive to Bunsen	55.9	RW	RW	RW
199	Irvine Boulevard	SR-133 NB Off- Ramp to Ridge Valley (O Street)	72.3	120	258	557
200	Irvine Boulevard	SR-133 SB Off-Ramp to SR-133 NB Off-Ramp	72.2	118	254	547
201	Irvine Boulevard	Sand Canyon to SR-133 SB Off-Ramp	73.1	128	277	596
202	Irvine Boulevard	Merit to Alton	71.6	108	232	500
203	Irvine Boulevard	Journey to Sand Canyon Avenue	71.6	107	231	497
204	Irvine Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	71.2	100	216	466
205	Irvine Boulevard	Pusan Way to Chinon (B Street)	71.0	98	211	455
206	Irvine Boulevard	Palo Lado to Yale Avenue	71.1	99	213	459
207	Irvine Boulevard	Culver Drive to Palo Lado	71.0	98	212	457
208	Irvine Boulevard	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.9	97	209	451
209	Irvine Boulevard	Old Myford Road to Market Place	71.0	97	210	452
210	Irvine Boulevard	Bosque (LY Street) to Modjeska	70.9	97	209	450
211	Irvine Boulevard	Jamboree Road to Old Myford Road	70.9	96	207	445

Table 9

212	Irvine Boulevard	Market Place to SR-261 SB Off-Ramp	70.9	96	206	444
213	Irvine Boulevard	Jeffrey Road to Groveland	70.8	94	203	438
214	Irvine Boulevard	Bake Parkway to Lake Forest Drive	70.6	92	199	429
215	Irvine Boulevard	Independence Way (The Groves)/The Groves to Jeffrey Road	70.6	92	199	429
216	Irvine Boulevard	Chinon (B Street) to Merit	70.5	90	194	418
217	Irvine Boulevard	SR-261 NB Off-Ramp to Central Park	70.5	90	195	420
218	Irvine Boulevard	Pueblo Norte to Independence Way (The Groves)/ Parkwood	70.3	89	191	411
219	Irvine Boulevard	Yale Avenue to Pueblo Norte	70.3	88	190	410
220	Irvine Boulevard	Modjeska to Pusan Way	70.2	87	188	404
221	Irvine Boulevard	Central Park Avenue to Culver Drive	69.9	RW	178	383
222	Irvine Boulevard	Parker to Bake Parkway	69.5	RW	169	364
223	Irvine Boulevard	Alton Parkway to Fairbanks	68.6	RW	146	315
224	Irvine Center Drive	Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp	72.6	119	256	550
225	Irvine Center Drive	Orange Tree to Valley Oak Drive	71.8	111	239	515
226	Irvine Center Drive	I-405 SB Off-Ramp to Research	72.1	111	239	515
227	Irvine Center Drive	Irvine Valley College to Orange Tree	71.7	109	235	507
228	Irvine Center Drive	Fontaine Avenue to Jeffrey Road	71.5	105	227	489
229	Irvine Center Drive	Culver Drive to Deerwood	71.4	105	226	486
230	Irvine Center Drive	Deerwood to Yale Avenue	71.4	104	224	483
231	Irvine Center Drive	Yale Avenue to Fontaine Avenue	71.4	104	225	484
232	Irvine Center Drive	Jeffrey Road to Irvine Valley College	71.3	103	222	479
233	Irvine Center Drive	Alton Parkway to Spectrum	71.0	98	211	456
234	Irvine Center Drive	Spectrum to Pacifica	71.0	97	210	452
235	Irvine Center Drive	Hearthstone to Culver Drive	70.9	96	207	446
236	Irvine Center Drive	Charter to Barranca Parkway	70.6	93	200	430
237	Irvine Center Drive	Jamboree Road to Harvard Avenue	70.5	90	195	419
238	Irvine Center Drive	Pacifica to Entertainment (Enterprise/Fortune)	70.5	90	195	419
239	Irvine Center Drive	Valley Oak Drive to Sand Canyon Avenue	70.5	90	195	419
240	Irvine Center Drive	Harvard Avenue to Hearthstone	70.2	87	187	403
241	Irvine Center Drive	Research to Hubble	69.7	RW	174	375
242	Irvine Center Drive	Barranca Parkway to Gateway Boulevard	69.8	RW	176	378

Table 9

243	Irvine Center Drive	Bake Parkway to Muller	69.7	RW	173	373
244	Irvine Center Drive	Discovery to Charter	69.8	RW	176	380
245	Irvine Center Drive	Hubble to Bake Parkway	69.5	RW	167	360
246	Irvine Center Drive	Muller to Tesla	69.3	RW	162	349
247	Irvine Center Drive	Sand Canyon Avenue to Odyssey	69.2	RW	159	343
248	Irvine Center Drive	Tesla to Scientific Way	68.9	RW	154	331
249	Irvine Center Drive	Scientific Way to Lake Forest Drive	68.7	RW	149	321
250	Irvine Center Drive	Gateway Boulevard to Alton Parkway	68.6	RW	146	314
251	Irvine Center Drive	Laguna Canyon Road to Discovery	68.6	RW	146	315
252	Irvine Center Drive	Odyssey to Laguna Canyon Road	68.5	RW	145	312
253	Irvine Center Drive (Edinger)	Redhill Avenue to Jamboree Road	70.9	97	208	448
254	Jamboree Road	I-5 SB Off-Ramp to I-5 NB Off-Ramp	74.5	168	362	780
255	Jamboree Road	I-405 SB Off-Ramp to I-405 NB Off Ramp	75.6	188	405	873
256	Jamboree Road	Walnut Avenue to Michelle Drive	73.9	152	328	707
257	Jamboree Road	I-405 NB Off-Ramp to Main Street	77.0	291	628	1353
258	Jamboree Road	Michelle Drive to I-5 SB Off-Ramp	73.6	146	314	676
259	Jamboree Road	Main Street to Kelvin Avenue	76.3	264	569	1226
260	Jamboree Road	Michelson Drive to I-405 SB Off-Ramp	74.3	214	460	992
261	Jamboree Road	Kelvin Avenue to McGaw Avenue	76.0	251	541	1166
262	Jamboree Road	McGaw Avenue to Alton Parkway	75.9	249	537	1157
263	Jamboree Road	Birch Street to Campus Drive	72.9	132	283	611
264	Jamboree Road	Dupont Drive to Michelson Drive	73.8	144	310	668
265	Jamboree Road	Alton Parkway to Beckman	75.5	234	504	1086
266	Jamboree Road	Fairchild Road to Birch Street	73.4	136	292	629
267	Jamboree Road	Beckman to Barranca Parkway	75.2	223	481	1036
268	Jamboree Road	I-5 NB Off-Ramp to El Camino Real	75.1	218	470	1013
269	Jamboree Road	Campus Drive to Dupont Drive	73.1	128	276	595
270	Jamboree Road	El Camino Real to West Drive	75.0	215	463	997
271	Jamboree Road	West Drive to Bryan Avenue	75.0	214	462	995
272	Jamboree Road	Bryan Avenue to Irvine Boulevard	74.7	204	440	948
273	Jamboree Road	Koll Center to Fairchild Road	72.7	121	260	561

Table 9

274	Jamboree Road	MacArthur Boulevard to Koll Center	72.6	120	258	557
275	Jamboree Road	Irvine Boulevard to Portola Parkway	70.7	94	202	436
276	Jamboree Road	Warner Avenue to Edinger Avenue	79.1	260	561	1208
277	Jamboree Road	Barranca Parkway to Warner Avenue	78.3	228	492	1059
278	Jamboree Road	Edinger Avenue to Walnut Avenue	78.0	217	468	1009
279	Jeffrey Road	Walnut Avenue to I-5 NB Off-Ramp	71.3	103	223	479
280	Jeffrey Road	I-5 NB Off-Ramp to Roosevelt	72.2	113	243	523
281	Jeffrey Road	Poplar (Meadows) to Walnut Avenue	70.9	97	208	448
282	Jeffrey Road	Alton Parkway to Barranca Parkway	70.8	95	204	441
283	Jeffrey Road	Irvine Center Drive to Poplar (Meadows)	70.7	94	202	435
284	Jeffrey Road	I-405 NB Off-Ramp to Quail Creek	70.7	94	203	436
285	Jeffrey Road	Barranca Parkway to Irvine Valley College	70.6	92	199	428
286	Jeffrey Road	Quail Creek to Alton Parkway	70.6	92	199	429
287	Jeffrey Road	Irvine Valley College to Irvine Center Drive	70.4	89	191	412
288	Jeffrey Road	Trabuco Road to Hideaway	69.6	RW	171	369
289	Jeffrey Road	Hideaway to Bryan Avenue	69.6	RW	171	369
290	Jeffrey Road	Roosevelt to Grove	70.4	85	182	392
291	Jeffrey Road	Grove to Trabuco Road	70.2	83	178	383
292	Jeffrey Road	Bryan Avenue to Irvine Boulevard	68.5	RW	143	308
293	Jeffrey Road	Encore to Portola Parkway	65.8	RW	95	205
294	Jeffrey Road	Irvine Boulevard to Encore	65.5	RW	91	196
295	Jeronimo Road	Goodyear to Bake Parkway	64.6	RW	RW	127
296	Jeronimo Road	Alton Parkway to Goodyear	64.3	RW	RW	121
297	Laguna Canyon Road	Old Laguna Canyon Road to Lake Forest Drive	73.3	139	300	645
298	Laguna Canyon Road	Laguna Canyon Freeway to Quail Hill Parkway	69.9	RW	134	288
299	Laguna Canyon Road	Discovery to Sand Canyon Avenue	69.1	RW	118	254
300	Laguna Canyon Road	I-405 Overcrossing to Pasteur	67.9	RW	78	169
301	Laguna Canyon Road	Irvine Center Drive to Discovery	67.5	RW	92	198
302	Laguna Canyon Road	Quail Hill Parkway to I-405 Overcrossing	67.9	RW	78	169
303	Laguna Canyon Road	Pasteur to Alton Parkway	66.9	RW	84	182
304	Laguna Canyon Road	Waterworks to Irvine Center Drive	66.4	RW	78	167



Table 9

305	Laguna Canyon Road	Alton Parkway to Barranca Parkway	66.1	RW	74	159
306	Laguna Canyon Road	Barranca Parkway to Waterworks	65.6	RW	69	149
307	Lake Forest Drive	Hidden Canyon to Laguna Canyon Road	69.3	RW	121	261
308	Lake Forest Drive	Bake Parkway to Hidden Canyon (Romano)	69.3	RW	121	260
309	Lake Forest Drive	Tesla to Bake Parkway	66.3	RW	103	222
310	Lake Road	Alton Parkway to Barranca Parkway	59.2	RW	RW	RW
311	Lynx	Irvine Boulevard to Astor	53.2	RW	RW	RW
312	MacArthur Boulevard	I-405 SB Off-Ramp to Michelson Drive	76.7	278	599	1291
313	MacArthur Boulevard	Main Street to I-405 NB Off-Ramp	76.6	277	596	1284
314	MacArthur Boulevard	I-405 NB Off-Ramp and I-405 SB Off-Ramp	76.6	274	590	1271
315	MacArthur Boulevard	Jamboree Road to Fairchild Road	69.9	RW	178	382
316	MacArthur Boulevard	Fairchild Road to University Drive	69.9	RW	177	382
317	MacArthur Boulevard	Fitch to Red Hill Avenue	70.5	87	187	402
318	MacArthur Boulevard	Michelson Drive to Douglas	72.1	137	296	637
319	MacArthur Boulevard	Douglas to Campus Drive	72.1	137	296	637
320	MacArthur Boulevard	Skypark to Main Street	69.5	RW	159	343
321	MacArthur Boulevard	Redhill Avenue to Skypark	68.3	RW	140	302
322	MacArthur Boulevard	Birch Street to Jamboree Road	67.0	RW	114	245
323	MacArthur Boulevard	Campus Drive to Birch Street	69.3	RW	193	415
324	Main Street	Gillette Avenue to Von Karman Avenue	70.7	90	193	416
325	Main Street	MacArthur Boulevard to Mercantile	70.2	83	178	384
326	Main Street	Executive Park to MacArthur Boulevard	68.4	RW	141	304
327	Main Street	Von Karman Avenue to Cartwright	68.3	RW	140	302
328	Main Street	McDermott to Red Hill Avenue	68.1	RW	134	290
329	Main Street	Red Hill Avenue to Executive Circle	68.0	RW	133	286
330	Main Street	Jamboree Road to Union	67.8	RW	129	279
331	Main Street	Culver Drive to West Yale Loop	67.1	RW	87	187
332	Main Street	Siglo to Jamboree Road	67.7	RW	126	272
333	Main Street	Veneto to Harvard Avenue	67.5	RW	124	267
334	Main Street	Paseo Westpark to Culver Drive	66.4	RW	77	167
335	Main Street	Harvard Avenue to San Mateo	66.4	RW	77	166

Table 9

336	Marine Way	Sand Canyon Avenue to Ridge Valley (O Street)	72.3	71	153	329
337	Marine Way	Alton Parkway to Bake Parkway	69.3	RW	120	259
338	Marine Way	Lynx to Barranca Parkway	69.3	RW	122	262
339	Marine Way	County Access to Treble	68.4	RW	105	227
340	Marine Way	Ridge Valley (O Street) to Skyhawk	68.2	RW	102	220
341	Marine Way	Skyhawk to County Access	67.1	RW	86	186
342	Marine Way	Barranca Parkway to Alton Parkway	66.8	RW	82	177
343	Marine Way	Treble to Lynx	66.4	RW	77	167
344	McGaw Avenue	Von Karman Avenue to Jamboree Road	64.3	RW	RW	120
345	McGaw Avenue	Red Hill Avenue to Von Karman Avenue	64.1	RW	RW	118
346	McGaw Avenue	Daimler to Red Hill Avenue	62.4	RW	RW	90
347	McGaw Avenue	Jamboree Road to Murphy Avenue	59.3	RW	RW	RW
348	Meadowood	Culver Drive to Canyonwood	59.8	RW	RW	RW
349	Meridian	Spectrum to Alton Parkway	55.3	RW	RW	RW
350	Meridian	Alton Parkway to Gateway Boulevard	54.6	RW	RW	RW
351	Merit	Irvine Boulevard to Cadence	57.9	RW	RW	RW
352	Michelson Drive	Riparian to Harvard Avenue	68.3	RW	103	223
353	Michelson Drive	Almond Tree Lane to Yale Avenue	67.1	RW	52	112
354	Michelson Drive	Von Karman Avenue to Obsidian	68.0	RW	99	213
355	Michelson Drive	Parkside to Culver Drive	67.8	RW	95	206
356	Michelson Drive	Gillman to Seton/Sandburg Way	66.8	RW	49	106
357	Michelson Drive	Carlson to Prince	67.3	RW	107	230
358	Michelson Drive	MacArthur Boulevard to Dupont Drive	67.3	RW	89	193
359	Michelson Drive	Harvard Avenue to Parkside	66.8	RW	82	177
360	Michelson Drive	Bixby to Von Karman Avenue	66.7	RW	81	175
361	Michelson Drive	Jamboree Road to Carlson	69.6	RW	122	263
362	Michelson Drive	Teller to Jamboree Road	69.6	RW	122	263
363	Michelson Drive	Jordan East to University Drive	66.9	RW	40	87
364	Michelson Drive	Culver Drive to Angell	66.2	RW	48	103
365	Modjeska (A Street)	Portola Springs to Irvine Boulevard	71.7	39	84	181
366	Modjeska (A Street)	South of Irvine Boulevard	61.1	RW	RW	45

Table 9

367	Muirlands Boulevard	Bake Parkway to City Limits	67.1	RW	86	186
368	Muirlands Boulevard	Alton Parkway to Sterling	66.3	RW	76	165
369	Muirlands Boulevard	Wrigley to Bake Parkway	66.3	RW	76	165
370	Newport Coast Drive	SR-73 NB Off-Ramp to Turtle Ridge	66.6	RW	80	173
371	Newport Coast Drive	Turtle Crest to Bonita Canyon Drive	65.1	RW	63	136
372	Nightmist	Sand Canyon Avenue to Tulip (Road C)	61.9	RW	RW	83
373	Northwood	Yale Avenue to Savannah	62.5	RW	RW	55
374	Northwood	Goldrush to Yale Avenue	61.5	RW	RW	47
375	Oak Canyon Drive	Valley Oak Drive to Sand Canyon Avenue	69.2	RW	72	155
376	Pacifica	Gateway to Barranca Parkway	65.2	RW	64	139
377	Pacifica	Alton Parkway to Gateway	64.0	RW	RW	116
378	Pacifica	Irvine Center Drive to Fortune Drive (Spectrum Center Drive)	62.7	RW	RW	94
379	Pacifica	Meridian to Alton Parkway	60.8	RW	RW	70
380	Park Place	Christamon South to Yale Avenue	57.0	RW	RW	RW
381	Portola Parkway	Bee Canyon Access Road to Sand Canyon Avenue	71.5	79	170	367
382	Portola Parkway	Jeffrey Road to Bee Canyon Access Road	71.5	79	170	367
383	Portola Parkway	Arrowhead to Ridge Valley Parkway	71.4	77	166	358
384	Portola Parkway	Sand Canyon Avenue to Arrowhead	71.0	73	157	339
385	Portola Parkway	Portola Springs to SR-241 SB Off-Ramp	70.1	63	136	292
386	Portola Parkway	Gatepark to Culver Drive	70.6	92	198	427
387	Portola Parkway	ETC-6 (SR-261) NB Off-Ramp to Gatepark	70.5	91	197	424
388	Portola Parkway	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.4	89	193	415
389	Portola Parkway	Jamboree Road to Bellevue	70.4	89	191	412
390	Portola Parkway	Bellevue to ETC-6 (SR-261) SB Off-Ramp	70.3	88	190	410
391	Portola Parkway	Yale Avenue to Jeffrey Road	70.1	85	183	394
392	Portola Parkway	Culver Drive to Yale Avenue	69.6	RW	169	364
393	Portola Parkway	Silverado to Portola Springs	68.5	RW	108	232
394	Pusan	Irvine Boulevard to Cadence	56.2	RW	RW	RW
395	Quail Hill Parkway	Shady Canyon Drive to Passage	67.4	RW	91	195
396	Quail Hill Parkway	East Knollcrest to Laguna Canyon Road	65.5	RW	67	145
397	Quassar Drive (Spectrum)	Irvine Center Drive to Spectrum Center Drive (Fortune)	54.8	RW	RW	RW

Table 9

398	Red Hill Avenue	MacArthur Boulevard to McGaw Avenue	71.5	105	227	489
399	Red Hill Avenue	I-405 Over Crossing to Main Street	70.1	64	137	295
400	Red Hill Avenue	Alton Parkway to Deere Avenue	70.0	84	181	390
401	Red Hill Avenue	McGaw Avenue to Alton Parkway	69.9	RW	178	384
402	Red Hill Avenue	Deere Avenue to Barranca Parkway	69.8	RW	174	375
403	Red Hill Avenue	Skypark East to MacArthur Boulevard	71.3	73	157	339
404	Red Hill Avenue	Main Street to Skypark East	70.6	66	142	307
405	Research Drive	Hubble to Bake Parkway	69.5	RW	125	269
406	Research Drive	Scientific to Lake Forest Drive	67.4	RW	90	194
407	Research Drive	Bake Parkway to Muller	66.6	RW	80	172
408	Research Drive	Irvine Center Drive to Bunsen	65.6	RW	69	148
409	Ridge Valley (O Street)	Irvine Boulevard to Trabuco Road (Great Park Boulevard)	67.3	RW	88	190
410	Ridge Valley (O Street)	Portola Parkway to Irvine Boulevard	66.4	RW	78	167
411	Ridge Valley (O Street)	Trabuco Road (Great Park Boulevard) to Marine Way	66.0	RW	73	157
412	Ridge Valley (O Street)	Ranchland to Portola Parkway	58.1	RW	RW	RW
413	Ridgeline Drive	Concordia East to University Drive	68.7	RW	71	152
414	Ridgeline Drive	Turtle Rock Drive to San Simeon	68.4	RW	67	145
415	Rockfield Avenue	Whatney to McLaren	67.6	RW	93	201
416	Rockfield Avenue	Bake Parkway to Whatney	64.1	RW	RW	118
417	Rockfield Avenue	Thomas to Bake Parkway	63.1	RW	RW	100
418	Roosevelt	Jeffrey Road to Vision	66.5	RW	78	169
419	Roosevelt	Yale Avenue to Van Buren	68.2	RW	49	105
420	Roosevelt	Vision to Bay Tree	66.2	RW	76	163
421	Roosevelt	Nimitz to Jeffrey Road	65.9	RW	71	154
422	Roosevelt	Tulip (Road C) to Sand Canyon Avenue	65.6	RW	69	148
423	Royal Oak	Alton Parkway to Eaglecreek	64.0	RW	RW	56
424	Sand Canyon Avenue	Oak Canyon Drive to Burt Road	72.1	115	248	535
425	Sand Canyon Avenue	Irvine Center Drive to Oak Canyon Drive	71.9	113	244	525
426	Sand Canyon Avenue	I-405 NB Off-Ramp to Alton Parkway	74.6	121	260	561
427	Sand Canyon Avenue	Burt Road to I-5 SB Off-Ramp	72.7	121	260	560
428	Sand Canyon Avenue	Marine to I-5 NB Off-Ramp	74.6	204	440	947

Table 9

429	Sand Canyon Avenue	Trabuco Road to Towngate	71.1	99	213	459
430	Sand Canyon Avenue	Barranca Parkway to Waterworks	70.8	95	206	443
431	Sand Canyon Avenue	I-5 SB Off-Ramp to Marine	73.8	181	389	838
432	Sand Canyon Avenue	Hospital to Barranca Parkway	70.6	92	198	426
433	Sand Canyon Avenue	Nightmist to Roosevelt	73.5	172	371	799
434	Sand Canyon Avenue	I-405 SB Off-Ramp to I-405 NB Off-Ramp	73.5	102	220	474
435	Sand Canyon Avenue	I-5 NB Off-Ramp to Nightmist	73.5	171	369	795
436	Sand Canyon Avenue	Towngate to Irvine Boulevard	70.4	89	193	415
437	Sand Canyon Avenue	Waterworks to Irvine Center Drive	70.2	87	187	403
438	Sand Canyon Avenue	Irvine Boulevard to Portola Parkway	69.2	RW	119	257
439	Sand Canyon Avenue	Roosevelt to Trabuco Road	72.8	153	331	712
440	Sand Canyon Avenue	Alton Parkway to Hospital	70.6	88	189	407
441	Sand Canyon/Shady Canyon	Quail Hill Parkway to I-405 SB Ramps	71.7	78	169	364
442	Scientific Way	Irvine Center Drive to Wald	55.0	RW	RW	RW
443	Shady Canyon Drive	Culver Drive/Bonita Canyon Drive to Cloverfield	69.2	RW	71	153
444	Shady Canyon Drive	Bommer Canyon Road to Sunnyhill	67.5	RW	74	159
445	Skyhawk	Great Park Boulevard to Marine Way	59.6	13	27	59
446	Southwood	Yale Avenue to Colt	60.5	9	19	41
447	Southwood	Challenger to Yale Avenue	60.2	8	18	39
448	Spectrum Center Drive (Fortune Drive)	Pacifica to Quassar Drive (Spectrum )	61.9	18	39	84
449	Spectrum Center Drive (FortuneDrive)	Quassar Drive (Spectrum ) to Gatewayb	62.4	19	42	90
450	Sunnyhill	Shady Canyon Drive to Turtle Rock Drive	57.6	9	20	43
451	Technology Drive	Barranca Parkway to Alton Parkway	70.6	68	147	317
452	Technology Drive	Old Laguna Canyon Road to I-5/SR-133 Undercrossing	69.2	56	120	258
453	Technology Drive	I-5/SR-133 to Barranca Parkway	69.1	54	117	251
454	Technology Drive	Ada to Alton Parkway	63.0	21	46	98
455	Toledo Way	Bake Parkway to City Limits	65.7	32	69	149
456	Toledo Way	Goodyear to Bake Parkway	64.7	28	60	128
457	Toledo Way	Alton Parkway to Parker	64.3	26	56	122
458	Trabuco Road	Keystone to Sand Canyon Avenue	67.1	40	87	187
459	Trabuco Road	Jeffrey Road to Keystone	66.9	39	84	180

Table 9

460	Trabuco Road	Culver Drive to I-5 NB Off-Ramp	66.7	38	82	176
461	Trabuco Road	Monroe to Yale Avenue	66.6	37	80	173
462	Trabuco Road	I-5 NB Off-Ramp to Monroe	66.5	37	79	170
463	Trabuco Road	Yale Avenue to Remington	66.2	35	75	161
464	Trabuco Road	Remington to Jeffrey Road	66.0	34	73	156
465	Turtle Ridge Drive	Federation Way to Bonita Canyon	68.8	52	111	240
466	Turtle Rock Drive	Ridgeline to Willowleaf	67.8	27	58	125
467	Turtle Rock Drive	Silkwood to Sunnyhill	67.7	27	57	123
468	Turtle Rock Drive	Canyon Park to Ridgeline	67.0	24	51	110
469	Turtle Rock Drive	Sunnyhill to Southernwood	64.0	15	32	69
470	Turtle Rock Drive	Campus Drive to Hillgate	64.1	25	54	116
471	Turtle Rock Drive	Paseo Segovia to Campus Drive	65.4	20	43	92
472	University Drive	Golden Glow to Yale Avenue	72.9	98	211	455
473	University Drive	Ridgeline to Michelson Drive	72.5	111	239	514
474	University Drive	Culver Drive to Golden Glow	72.8	96	207	446
475	University Drive	Yale Avenue to Ridgeline	72.3	89	192	414
476	University Drive	Michelson Drive to I-405 SB Off-Ramp	72.7	126	272	587
477	University Drive	Mesa to Campus Drive	74.5	119	256	552
478	University Drive	MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	74.4	117	253	545
479	University Drive	California Avenue to Mesa	74.3	117	252	543
480	University Drive	Campus Drive to Harvard Avenue	70.6	93	200	430
481	University Drive	SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	71.5	63	136	292
482	University Drive	SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps	70.1	86	185	399
483	University Drive	San Joaquin to Culver Drive	69.7	81	174	375
484	University Drive	Harvard Avenue to San Joaquin	69.7	80	173	374
485	Valley Oak Drive	Hawkcreek to Barranca Parkway	68.0	46	99	213
486	Valley Oak Drive	Irvine Center Drive to Oak Canyon Drive	69.0	43	93	201
487	Valley Oak Drive	Barranca Parkway to Irvine Center Drive	66.7	38	82	176
488	Valley Oak Drive	Alton Parkway to Hawkcreek	64.8	28	61	131
489	Von Karman Avenue	Marriott to Morse Avenue	70.9	72	155	333
490	Von Karman Avenue	Michelson Drive to Quartz	70.7	70	151	324

Table 9

491	Von Karman Avenue	McGaw Avenue to Alton Parkway	70.7	69	149	321
492	Von Karman Avenue	Alton Parkway to Barranca Parkway	70.3	79	170	366
493	Von Karman Avenue	Main Street to Anchor	70.6	68	147	317
494	Von Karman Avenue	Anchor to McGaw Avenue	70.4	67	144	310
495	Von Karman Avenue	Morse to Main Street	70.2	65	139	300
496	Von Karman Avenue	Martin to Dupont Drive	69.5	58	125	270
497	Von Karman Avenue	Campus Drive to Martin	69.5	57	124	267
498	Von Karman Avenue	Dupont Drive to Michelson Drive	69.5	57	124	267
499	Walnut Avenue	Jeffrey Road to I-5 SB Off-Ramp	70.9	71	154	331
500	Walnut Avenue	Myford Road to Jamboree Road SB Off-Ramp	69.1	54	117	251
501	Walnut Avenue	The Mall Street to Culver Drive	68.7	51	110	237
502	Walnut Avenue	Harvard Avenue to The Mall Street	68.7	51	110	237
503	Walnut Avenue	Franciscan Street to Ravenwood Street	68.4	49	105	225
504	Walnut Avenue	Ravenwood Street to Yale Avenue	68.4	49	105	225
505	Walnut Avenue	Culver Drive to Franciscan Street	68.3	48	104	223
506	Walnut Avenue	Peters Canyon Road to Harvard Avenue	67.9	61	131	283
507	Walnut Avenue	Jamboree Road NB Off-Ramp to Peters Canyon Road	67.8	59	128	276
508	Walnut Avenue	Yale Avenue to Kazan Street	67.1	40	86	186
509	Walnut Avenue	Wisteria to Jeffrey Road	67.1	40	86	185
510	Warner Avenue	Jamboree Road SB Off-ramp to Construction North	70.2	64	138	297
511	Warner Avenue	Construction North to Harvard Avenue	68.6	50	108	233
512	Warner Avenue	Harvard Avenue to Paseo Westpark	67.0	39	85	183
513	Warner Avenue	Santa Ynez to Culver Drive	66.0	34	73	157
514	Warner Avenue	Culver Drive to West Yale Loop	65.7	32	69	149
515	West Yale Loop	Alton Parkway to Blue Lake North	64.0	25	54	115
516	West Yale Loop	Eagle Run to Main Street	63.8	24	52	113
517	West Yale Loop	Thunder Run to Yale Avenue	63.9	24	53	113
518	West Yale Loop	Main Street to Timber Run	62.9	21	45	98
519	West Yale Loop	Yale Avenue to Shorebird	62.9	21	45	97
520	West Yale Loop	Warner Avenue to Stonecreek South	62.6	20	43	93
521	West Yale Loop	Barranca Parkway to Alton Parkway	62.4	20	42	91

Table 9

522	West Yale Loop	Stonecreek North to Warner Avenue	62.4	19	42	90
523	West Yale Loop	Birdsong to Barranca Parkway	62.3	19	41	89
524	Westwood	Yorktown to Bryan Avenue	63.6	14	30	65
525	Westwood	Bryan Avenue to Leaf	61.5	10	22	47
526	Yale Avenue	Deerfield Avenue to Winvale Avenue	68.6	30	65	141
527	Yale Avenue	Hicks Canyon Drive to Meadowood	67.3	25	54	116
528	Yale Avenue	Walnut Avenue to Roosevelt	71.0	46	100	216
529	Yale Avenue	Roosevelt to Trabuco Road	67.0	40	85	184
530	Yale Avenue	Irvine Center Drive to Deerfield Avenue	66.9	39	84	180
531	Yale Avenue	West Yale Loop to Irvine Center Drive	66.3	35	76	164
532	Yale Avenue	Winvale Avenue to Karen Ann Lane	65.7	32	69	149
533	Yale Avenue	Karen Ann Lane to Walnut Avenue	65.7	32	69	149
534	Yale Avenue	Trabuco Road to Southwood	65.6	32	68	147
535	Yale Avenue	Southwood to Bryan Avenue	65.4	31	67	144
536	Yale Avenue	Northwood to Irvine Boulevard	65.1	30	64	138
537	Yale Avenue	Bryan Avenue to Monticello	65.0	29	63	135
538	Yale Avenue	Irvine Boulevard to Park Place	64.3	26	56	120
539	Yale Avenue	University Drive to Royce	63.4	18	39	85
540	Yale Court	Arborwood to Portola Parkway	60.3	8	18	39

<sup>1</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest receiving land use.  
 "RW" = Location of the respective noise contour falls within the right-of-way of the road.



Table 10

Table 10: Preferred Cumulative Plan Conditions Noise Contours

ID	Road	Segment	CNEL at Nearest Receiving Land Use (dBA) <sup>1</sup>	Distance to Contour from Centerline (Feet)		
				70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Ada	Barranca Parway to Marine Way	70.8	42	91	196
2	Ada	Alton Parkway to Barranca Parkway	69.2	RW	119	257
3	Alton Parkway	Enterprise to I-5 NB Off-Ramp	73.9	152	328	707
4	Alton Parkway	I-5 NB Off-Ramp to Technology Drive West	74.5	160	345	743
5	Alton Parkway	East Yale Loop to Jeffrey Road	71.8	82	177	380
6	Alton Parkway	Gateway Boulevard to Enterprise	71.7	110	236	508
7	Alton Parkway	Jeffrey Road to Royal Oak	70.8	70	152	327
8	Alton Parkway	Daimler Street to Red Hill Avenue	70.6	69	149	320
9	Alton Parkway	Culver Drive to West Yale Loop	70.6	69	148	319
10	Alton Parkway	West Yale Loop to Lake Road	70.6	69	148	318
11	Alton Parkway	Technology Drive West to Ada	72.4	116	250	539
12	Alton Parkway	Creek Road to East Yale Loop	70.6	68	147	316
13	Alton Parkway	Red Hill Avenue to Von Karman Avenue	70.5	67	145	313
14	Alton Parkway	Lake Road to Creek Road	70.3	66	141	305
15	Alton Parkway	Telemetry to Banting	70.4	66	142	307
16	Alton Parkway	Irvine Boulevard to Commercentre	70.9	96	207	446
17	Alton Parkway	Jenner to Telemetry	70.3	65	141	303
18	Alton Parkway	Irvine Center Drive to Gateway Boulevard	71.0	98	210	453
19	Alton Parkway	Sand Canyon Avenue to Hospital	73.7	106	228	491
20	Alton Parkway	Laguna Canyon Road to Jenner	70.2	64	139	299
21	Alton Parkway	Technology Drive East to Barranca Pkwy/Muirlands Blvd	70.8	96	206	444
22	Alton Parkway	Royal Oak to Valley Oak Drive	70.0	63	135	291
23	Alton Parkway	Banting to Pacifica	69.9	RW	133	287
24	Alton Parkway	Barranca Pkwy/Muirlands Blvd to Jeronimo Road	70.3	88	190	409
25	Alton Parkway	Ada to Technology Drive East	70.3	88	191	411

Table 10

26	Alton Parkway	Von Karman Avenue to Jamboree Road	69.7	RW	128	275
27	Alton Parkway	Jeronimo Road to Hughes	70.0	84	181	390
28	Alton Parkway	Hughes to Morgan	69.8	RW	174	376
29	Alton Parkway	Morgan to Toledo Way	69.0	RW	156	336
30	Alton Parkway	San Marino to Culver Drive	69.1	RW	158	341
31	Alton Parkway	Jamboree Road to Murphy Avenue	69.1	RW	159	342
32	Alton Parkway	Hospital to Laguna Canyon Road	72.0	81	175	376
33	Alton Parkway	Valley Oak Drive to Sand Canyon Avenue	71.8	79	170	366
34	Alton Parkway	Murphy Avenue to Harvard Avenue	68.9	RW	154	332
35	Alton Parkway	Foster to Irvine Boulevard	68.7	RW	149	320
36	Alton Parkway	Fairbanks to Foster	68.5	RW	143	309
37	Alton Parkway	Toledo Way to Berteza	68.4	RW	142	306
38	Alton Parkway	Pacifica to Meridian	71.6	76	165	355
39	Alton Parkway	Berteza to Fairbanks	68.3	RW	140	301
40	Alton Parkway	Meridian to Irvine Center Drive	68.2	RW	137	295
41	Alton Parkway	Paseo Westpark to San Marino	68.2	RW	137	296
42	Alton Parkway	Harvard Avenue to Paseo Westpark	67.7	RW	127	273
43	Astor	Lynx to Fairbanks	67.0	RW	51	110
44	Astor	Cadence to Lynx	65.8	RW	43	92
45	Bake Parkway	I-5 NB Off-Ramp to Rockfield Boulevard	76.6	277	596	1284
46	Bake Parkway	Muirlands Boulevard to Jeronimo Road	72.9	132	284	612
47	Bake Parkway	Rockfield Boulevard to Muirlands Boulevard	75.0	217	468	1008
48	Bake Parkway	Jeronimo Road to Toledo Way	72.0	114	246	530
49	Bake Parkway	Toledo Way to Cromwell	71.7	108	233	503
50	Bake Parkway	Cromwell to Irvine Boulevard	71.6	108	232	500
51	Bake Parkway	Research Drive to I-5 SB Off-Ramp	69.6	RW	170	366
52	Bake Parkway	Irvine Center Drive to Research Drive	65.0	RW	84	181
53	Bake Parkway	Lake Forest Drive to Irvine Center Drive	63.7	RW	RW	148
54	Banting	Alton Parkway to Barranca Parkway	60.1	RW	RW	64
55	Barranca Parkway	Pacifica to Irvine Center Drive	73.1	101	217	467
56	Barranca Parkway	Banting to Pacifica	72.7	95	204	440

Table 10

57	Barranca Parkway	I-5 HOV Ramp to Technology Drive West	72.7	94	203	437
58	Barranca Parkway	Technology Drive West to Ada	72.6	93	201	433
59	Barranca Parkway	Irvine Center Drive to I-5 HOV Ramp	72.4	90	194	417
60	Barranca Parkway	Culver Drive to West Yale Loop	72.2	88	190	409
61	Barranca Parkway	East Yale Loop to Jeffrey Road	72.1	87	187	402
62	Barranca Parkway	West Yale Loop to Lake Road	72.0	85	184	396
63	Barranca Parkway	Ada to Alton Parkway	72.0	86	184	397
64	Barranca Parkway	Lake Road to Creek Road	71.7	82	176	378
65	Barranca Parkway	Red Hill Avenue to Armstrong Avenue	74.7	206	444	957
66	Barranca Parkway	Discovery/Herchel to Banting	71.6	80	172	371
67	Barranca Parkway	Lyon to East Yale Loop	71.5	78	169	364
68	Barranca Parkway	Creek Road to Lyon	71.4	78	167	360
69	Barranca Parkway	Von Karman Avenue to Jamboree Road	72.7	121	261	561
70	Barranca Parkway	Sand Canyon Avenue to Laguna Canyon Road	70.8	71	153	329
71	Barranca Parkway	Armstrong Avenue to Von Karman Avenue	72.4	116	249	537
72	Barranca Parkway	Valley Oak Drive to Sand Canyon Avenue	70.7	70	150	323
73	Barranca Parkway	Jamboree Road to Construction Circle	71.1	99	213	459
74	Barranca Parkway	Santa Rosa to Culver Drive	71.0	97	210	452
75	Barranca Parkway	FedEx to Discovery/Herchel	70.3	65	140	302
76	Barranca Parkway	Jeffrey Road to Valley Oak Drive	70.3	65	140	302
77	Barranca Parkway	Laguna Canyon Road to FedEx	70.1	64	138	297
78	Barranca Parkway	Pullman Street to Red Hill Avenue	73.6	173	373	804
79	Barranca Parkway	Construction Circle to Fire Station	70.5	91	195	420
80	Barranca Parkway	Fire Station to Harvard Avenue	70.5	91	195	420
81	Barranca Parkway	Paseo Westpark to Santa Rosa	70.5	91	197	423
82	Barranca Parkway	Harvard Avenue to Paseo Westpark	70.2	87	186	402
83	Bay Tree	Trabuco Road to Roosevelt	57.2	RW	RW	RW
84	Beacon	Ridge Valley to Benchmark	59.7	RW	RW	RW
85	Benchmark (LN Street)	Ridge Valley (O Street) to Bosque	56.5	RW	RW	RW
86	Bison Avenue	SR-73 NB Off-Ramp to California Avenue	69.7	RW	129	277
87	Bonita Canyon Drive	MacArthur Boulevard to SR-73	70.3	78	169	363

Table 10

88	Bonita Canyon Drive	Turtle Ridge to Shady Canyon Drive	68.6	RW	130	279
89	Bonita Canyon Drive	Newport Coast Drive to Turtle Ridge	68.2	RW	123	264
90	Bonita Canyon Drive	SR-73 NB Off-Ramp to Newport Coast Drive	68.0	RW	119	256
91	Bosque	Cadence to Great Park Boulevard	65.2	RW	39	83
92	Bosque	Irvine Boulevard to Benchmark (LN Street)	63.5	RW	RW	64
93	Bosque	Benchmark to Cadence	63.1	RW	RW	60
94	Bosque	Great Park Boulevard to Beacon	56.7	RW	RW	RW
95	Bosque	Beacon to S 5th Street	56.1	RW	RW	RW
96	Bryan Avenue	Jamboree Road to Market Place	69.0	RW	115	249
97	Bryan Avenue	Market Place to El Camino Real	68.9	RW	114	245
98	Bryan Avenue	Rubicon to Culver Drive	68.9	RW	114	245
99	Bryan Avenue	El Camino Real to Rubicon	68.9	RW	113	243
100	Bryan Avenue	Eastwood to Jeffrey Road	67.0	RW	85	183
101	Bryan Avenue	Westwood to Yale Avenue	66.7	RW	81	174
102	Bryan Avenue	Culver Drive to Westwood	66.6	RW	80	172
103	Bryan Avenue	Yale Avenue to Eastwood	66.5	RW	79	170
104	Cadence	Pusan to Chinon	65.6	RW	41	89
105	Cadence	Bosque to Pusan	65.3	RW	39	85
106	Cadence	Ridge Valley (O Street) to Bosque	63.9	RW	RW	68
107	Cadence	Chinon to Merit	62.2	RW	RW	53
108	Cadence	Merit to Astor	59.4	RW	RW	RW
109	California Avenue	University Drive to Academy Way	67.2	RW	88	190
110	California Avenue	Campus Drive to Harvard Avenue	64.2	RW	RW	119
111	California Avenue	Theory to Bison Avenue	64.0	RW	RW	115
112	Campus Drive	Carlson Avenue to University Drive	73.3	83	178	384
113	Campus Drive	University Drive to Bridge Road	71.7	82	176	378
114	Campus Drive	Jamboree Road to Carlson Avenue	71.5	79	171	367
115	Campus Drive	Stanford Court to Berkeley Avenue	71.0	73	158	341
116	Campus Drive	California Avenue to Culver Drive	70.9	72	154	333
117	Campus Drive	Berkeley Avenue to Cornell	69.9	RW	133	286
118	Campus Drive	Martin to Von Karman Avenue	69.1	RW	118	254

Table 10

119	Campus Drive	Culver Drive to Paseo Montoya (Turtle Rock Drive)	68.7	RW	110	237
120	Campus Drive	Von Karman Avenue to Teller Avenue	68.5	RW	106	229
121	Campus Drive	MacArthur Boulevard to Martin	68.3	RW	103	222
122	Campus Drive	Teller Avenue to Jamboree Road	67.5	RW	92	199
123	Carlson Avenue	Michelson Drive to Campus Drive	67.9	RW	98	211
124	Chinon	Irvine Boulevard to Cadence	59.0	RW	RW	RW
125	Creek Road	Alton Parkway to Barranca Parkway	56.2	RW	RW	RW
126	Culver Drive	Michelson Drive to I-405 SB Off-Ramp	73.9	154	331	713
127	Culver Drive	I-405 SB Off-Ramp to I-405 NB Off Ramp	73.8	152	327	704
128	Culver Drive	I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)	73.9	153	331	712
129	Culver Drive	Scottsdale Drive to I-5 SB Off- Ramp	73.9	152	327	704
130	Culver Drive	I-405 NB Off-Ramp to San Leandro	73.6	146	315	679
131	Culver Drive	San Leandro to Main Street	73.3	140	302	650
132	Culver Drive	Harvard Avenue to University Drive	73.3	140	302	651
133	Culver Drive	Trabuco Road to Farwell Avenue	74.2	153	330	711
134	Culver Drive	Alton Parkway to Barranca Parkway	73.2	137	296	637
135	Culver Drive	Main Street to Alton Parkway	73.1	135	290	625
136	Culver Drive	Warner Avenue to Irvine Center Drive	73.0	133	286	617
137	Culver Drive	Walnut Avenue to Scottsdale Dive	72.9	131	282	608
138	Culver Drive	Barranca Parkway to Warner Avenue	72.9	131	281	606
139	Culver Drive	Shady Canyon Drive to Palo Verde	72.0	85	182	393
140	Culver Drive	Deerfield Avenue to Walnut Avenue	72.5	124	267	576
141	Culver Drive	Sandburg Way to Michelson Drive	72.5	124	266	574
142	Culver Drive	Irvine Center Drive to Deerfield Avenue	72.4	122	263	567
143	Culver Drive	Palo Verde to Campus Drive	71.6	80	172	370
144	Culver Drive	University Drive to Sandburg Way	72.2	117	253	545
145	Culver Drive	Farwell Avenue to Bryan Avenue	73.2	131	281	606
146	Culver Drive	Campus Drive to High School	72.1	116	250	539
147	Culver Drive	High School to Harvard Avenue	72.0	115	247	532
148	Culver Drive	Bryan Avenue to Florence	71.8	111	238	513
149	Culver Drive	Portola Parkway to Settlers	71.2	75	161	348

Table 10

150	Culver Drive	Florence to Irvine Boulevard	71.7	109	235	506
151	Culver Drive	Irvine Boulevard to Viewpark	70.5	91	196	423
152	Culver Drive	Viewpark to Meadowood	70.4	89	192	414
153	Culver Drive	Settlers to Furrow	68.5	RW	107	230
154	Culver Drive	Meadowood to Portola Parkway	69.0	RW	155	333
155	Discovery Drive	Irvine Center Drive to Laguna Canyon Road	64.0	RW	RW	115
156	Discovery Drive	Waterworks Way to Irvine Center Drive	61.2	RW	RW	76
157	East Yale Loop	Alton Parkway to Witherspoon	65.5	RW	68	146
158	East Yale Loop	Osborn Street to Barranca Parkway	65.3	RW	65	141
159	East Yale Loop	Yale Avenue to Springbrook South	64.9	RW	RW	132
160	East Yale Loop	Springbrook North to Alton Parkway	63.6	RW	RW	108
161	East Yale Loop	Woodspring to Yale Avenue	62.7	RW	RW	95
162	East Yale Loop	Barranca Parkway to Eastshore	62.4	RW	RW	91
163	Eastwood	Bryan Avenue to Monticello	60.8	RW	RW	42
164	Eastwood	Columbus to Bryan Avenue	58.8	RW	RW	RW
165	El Camino Real	Jamboree Road to Alliance (SR-261 Bridge)	67.1	RW	87	187
166	El Camino Real North	El Camino Real to Bryan Avenue	62.4	RW	RW	90
167	Fairbanks	Alton Parkway to Astor	69.8	RW	78	168
168	Fairbanks	Irvine Boulevard to Alton Parkway	66.9	RW	50	109
169	Fairchild Road	MacArthur Boulevard to Jamboree Road	64.0	RW	RW	116
170	Gateway Boulevard	Alton Parkway to Irvine Center Drive	63.3	RW	RW	103
171	Gateway Boulevard	Spectrum Center Drive (Fortune Drive) to Alton Parkway	62.1	RW	RW	86
172	Gateway Boulevard	Irvine Center Drive to Meridian	59.2	RW	RW	RW
173	Great Park Boulevard	Sand Canyon to Ridge Valley	74.5	119	257	553
174	Great Park Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	70.2	65	139	300
175	Great Park Boulevard (EB)	Bosque to Skyhawk	68.9	RW	68	146
176	Great Park Boulevard (WB)	Bosque to Skyhawk	68.3	RW	62	135
177	Harvard Avenue	University Drive to Michelson Drive	72.0	51	110	238
178	Harvard Avenue	Michelson Drive to Coronado	70.5	67	145	312
179	Harvard Avenue	San Marino to Alton Parkway	70.2	65	139	300
180	Harvard Avenue	Coronado to Main Street	70.2	64	138	298

Table 10

181	Harvard Avenue	San Carlo to San Marino	70.1	64	137	295
182	Harvard Avenue	Main Street to San Carlo	70.0	63	135	291
183	Harvard Avenue	Alton Parkway to San Leon	68.6	RW	109	234
184	Harvard Avenue	San Juan to Barranca Parkway	68.7	RW	110	237
185	Harvard Avenue	San Leon to San Juan	68.6	RW	108	233
186	Harvard Avenue	Irvine Center Drive to Deerfield Avenue	67.4	RW	91	195
187	Harvard Avenue	Deerfield Avenue to Poplar Street	67.4	RW	90	193
188	Harvard Avenue	Barranca Parkway to Warner Avenue	67.9	RW	97	210
189	Harvard Avenue	Bridge Road to University Drive	67.8	RW	96	206
190	Harvard Avenue	Paseo Westpark to Irvine Center Drive	67.8	RW	96	207
191	Harvard Avenue	Poplar Street to Walnut Avenue	68.8	RW	89	192
192	Harvard Avenue	California Avenue to Berkeley Avenue	67.2	RW	88	190
193	Harvard Avenue	Culver Drive to California Avenue	67.2	RW	87	188
194	Harvard Avenue	Berkeley to Bridge Road	67.1	RW	87	187
195	Harvard Avenue	Warner Avenue to Paseo Westpark	66.8	RW	82	177
196	Hicks Canyon Drive	Delamesa to Yale Avenue	58.2	RW	RW	RW
197	Hornet (5th St)	Ridge Valley (O Street) to Bosque	57.6	RW	RW	RW
198	Hubble	Irvine Center Drive to Bunsen	56.1	RW	RW	RW
199	Irvine Boulevard	SR-133 NB Off- Ramp to Ridge Valley (O Street)	72.3	120	258	557
200	Irvine Boulevard	SR-133 SB Off-Ramp to SR-133 NB Off-Ramp	72.1	116	250	540
201	Irvine Boulevard	Sand Canyon to SR-133 SB Off-Ramp	73.1	128	277	596
202	Irvine Boulevard	Merit to Alton	71.6	108	232	500
203	Irvine Boulevard	Journey to Sand Canyon Avenue	71.7	109	234	505
204	Irvine Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	71.1	99	213	459
205	Irvine Boulevard	Pusan Way to Chinon (B Street)	71.0	98	211	455
206	Irvine Boulevard	Palo Lado to Yale Avenue	71.2	101	217	467
207	Irvine Boulevard	Culver Drive to Palo Lado	71.1	100	216	464
208	Irvine Boulevard	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	71.0	98	211	455
209	Irvine Boulevard	Old Myford Road to Market Place	71.0	98	212	457
210	Irvine Boulevard	Bosque (LY Street) to Modjeska	71.0	97	210	452
211	Irvine Boulevard	Jamboree Road to Old Myford Road	70.9	97	209	451

Table 10

212	Irvine Boulevard	Market Place to SR-261 SB Off-Ramp	70.9	97	209	449
213	Irvine Boulevard	Jeffrey Road to Groveland	71.0	97	210	452
214	Irvine Boulevard	Bake Parkway to Lake Forest Drive	70.7	93	200	431
215	Irvine Boulevard	Independence Way (The Groves)/The Groves to Jeffrey Road	70.6	93	200	431
216	Irvine Boulevard	Chinon (B Street) to Merit	70.5	90	194	418
217	Irvine Boulevard	SR-261 NB Off-Ramp to Central Park	70.5	91	196	423
218	Irvine Boulevard	Pueblo Norte to Independence Way (The Groves)/ Parkwood	70.4	90	193	416
219	Irvine Boulevard	Yale Avenue to Pueblo Norte	70.4	89	192	414
220	Irvine Boulevard	Modjeska to Pusan Way	70.2	87	188	404
221	Irvine Boulevard	Central Park Avenue to Culver Drive	69.9	RW	179	386
222	Irvine Boulevard	Parker to Bake Parkway	69.7	RW	172	370
223	Irvine Boulevard	Alton Parkway to Fairbanks	68.6	RW	146	315
224	Irvine Center Drive	Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp	72.7	121	260	559
225	Irvine Center Drive	Orange Tree to Valley Oak Drive	71.9	112	241	519
226	Irvine Center Drive	I-405 SB Off-Ramp to Research	72.3	113	244	525
227	Irvine Center Drive	Irvine Valley College to Orange Tree	71.8	110	237	511
228	Irvine Center Drive	Fontaine Avenue to Jeffrey Road	71.5	107	229	494
229	Irvine Center Drive	Culver Drive to Deerwood	71.5	106	227	490
230	Irvine Center Drive	Deerwood to Yale Avenue	71.4	105	226	486
231	Irvine Center Drive	Yale Avenue to Fontaine Avenue	71.5	105	227	489
232	Irvine Center Drive	Jeffrey Road to Irvine Valley College	71.4	104	223	481
233	Irvine Center Drive	Alton Parkway to Spectrum	71.1	99	213	459
234	Irvine Center Drive	Spectrum to Pacifica	71.0	98	211	455
235	Irvine Center Drive	Hearthstone to Culver Drive	70.9	96	208	448
236	Irvine Center Drive	Charter to Barranca Parkway	70.7	93	201	433
237	Irvine Center Drive	Jamboree Road to Harvard Avenue	70.5	91	195	420
238	Irvine Center Drive	Pacifica to Entertainment (Enterprise/Fortune)	70.6	91	197	424
239	Irvine Center Drive	Valley Oak Drive to Sand Canyon Avenue	70.5	91	196	422
240	Irvine Center Drive	Harvard Avenue to Hearthstone	70.2	87	187	403
241	Irvine Center Drive	Research to Hubble	70.0	84	181	389
242	Irvine Center Drive	Barranca Parkway to Gateway Boulevard	69.9	RW	177	382



Table 10

243	Irvine Center Drive	Bake Parkway to Muller	69.9	RW	177	381
244	Irvine Center Drive	Discovery to Charter	69.9	RW	178	383
245	Irvine Center Drive	Hubble to Bake Parkway	69.6	RW	170	366
246	Irvine Center Drive	Muller to Tesla	69.4	RW	165	355
247	Irvine Center Drive	Sand Canyon Avenue to Odyssey	69.2	RW	160	344
248	Irvine Center Drive	Tesla to Scientific Way	69.1	RW	158	339
249	Irvine Center Drive	Scientific Way to Lake Forest Drive	68.9	RW	153	329
250	Irvine Center Drive	Gateway Boulevard to Alton Parkway	68.7	RW	148	319
251	Irvine Center Drive	Laguna Canyon Road to Discovery	68.7	RW	147	317
252	Irvine Center Drive	Odyssey to Laguna Canyon Road	68.6	RW	146	314
253	Irvine Center Drive (Edinger)	Redhill Avenue to Jamboree Road	70.9	97	209	451
254	Jamboree Road	I-5 SB Off-Ramp to I-5 NB Off-Ramp	74.5	168	362	780
255	Jamboree Road	I-405 SB Off-Ramp to I-405 NB Off Ramp	75.6	189	408	878
256	Jamboree Road	Walnut Avenue to Michelle Drive	73.9	153	329	708
257	Jamboree Road	I-405 NB Off-Ramp to Main Street	77.0	292	630	1357
258	Jamboree Road	Michelle Drive to I-5 SB Off-Ramp	73.7	148	319	687
259	Jamboree Road	Main Street to Kelvin Avenue	76.4	266	573	1234
260	Jamboree Road	Michelson Drive to I-405 SB Off-Ramp	74.3	214	462	996
261	Jamboree Road	Kelvin Avenue to McGaw Avenue	76.0	253	545	1174
262	Jamboree Road	McGaw Avenue to Alton Parkway	76.0	252	542	1168
263	Jamboree Road	Birch Street to Campus Drive	73.0	132	285	615
264	Jamboree Road	Dupont Drive to Michelson Drive	73.9	145	312	672
265	Jamboree Road	Alton Parkway to Beckman	75.6	237	510	1099
266	Jamboree Road	Fairchild Road to Birch Street	73.5	137	294	634
267	Jamboree Road	Beckman to Barranca Parkway	75.3	226	487	1049
268	Jamboree Road	I-5 NB Off-Ramp to El Camino Real	75.1	218	470	1013
269	Jamboree Road	Campus Drive to Dupont Drive	73.1	129	279	601
270	Jamboree Road	El Camino Real to West Drive	74.9	214	460	992
271	Jamboree Road	West Drive to Bryan Avenue	75.0	214	461	994
272	Jamboree Road	Bryan Avenue to Irvine Boulevard	74.6	203	438	944
273	Jamboree Road	Koll Center to Fairchild Road	72.7	122	263	566

Table 10

274	Jamboree Road	MacArthur Boulevard to Koll Center	72.7	120	259	559
275	Jamboree Road	Irvine Boulevard to Portola Parkway	70.7	94	202	436
276	Jamboree Road	Warner Avenue to Edinger Avenue	79.1	261	562	1210
277	Jamboree Road	Barranca Parkway to Warner Avenue	78.3	230	495	1067
278	Jamboree Road	Edinger Avenue to Walnut Avenue	78.0	218	469	1012
279	Jeffrey Road	Walnut Avenue to I-5 NB Off-Ramp	71.4	104	223	481
280	Jeffrey Road	I-5 NB Off-Ramp to Roosevelt	72.3	114	245	527
281	Jeffrey Road	Poplar (Meadows) to Walnut Avenue	70.9	97	209	449
282	Jeffrey Road	Alton Parkway to Barranca Parkway	70.8	95	205	442
283	Jeffrey Road	Irvine Center Drive to Poplar (Meadows)	70.7	94	203	436
284	Jeffrey Road	I-405 NB Off-Ramp to Quail Creek	70.8	95	204	439
285	Jeffrey Road	Barranca Parkway to Irvine Valley College	70.6	92	199	429
286	Jeffrey Road	Quail Creek to Alton Parkway	70.7	93	200	431
287	Jeffrey Road	Irvine Valley College to Irvine Center Drive	70.4	89	192	413
288	Jeffrey Road	Trabuco Road to Hideaway	69.7	RW	172	372
289	Jeffrey Road	Hideaway to Bryan Avenue	69.7	RW	172	371
290	Jeffrey Road	Roosevelt to Grove	70.4	85	182	393
291	Jeffrey Road	Grove to Trabuco Road	70.2	83	178	384
292	Jeffrey Road	Bryan Avenue to Irvine Boulevard	68.5	RW	145	312
293	Jeffrey Road	Encore to Portola Parkway	65.6	RW	92	197
294	Jeffrey Road	Irvine Boulevard to Encore	65.4	RW	89	192
295	Jeronimo Road	Goodyear to Bake Parkway	64.5	RW	RW	125
296	Jeronimo Road	Alton Parkway to Goodyear	64.3	RW	RW	120
297	Laguna Canyon Road	Old Laguna Canyon Road to Lake Forest Drive	73.4	141	305	656
298	Laguna Canyon Road	Laguna Canyon Freeway to Quail Hill Parkway	70.0	RW	134	289
299	Laguna Canyon Road	Discovery to Sand Canyon Avenue	69.1	RW	118	255
300	Laguna Canyon Road	I-405 Overcrossing to Pasteur	68.0	RW	79	170
301	Laguna Canyon Road	Irvine Center Drive to Discovery	67.5	RW	92	198
302	Laguna Canyon Road	Quail Hill Parkway to I-405 Overcrossing	68.0	RW	79	170
303	Laguna Canyon Road	Pasteur to Alton Parkway	67.0	RW	85	183
304	Laguna Canyon Road	Waterworks to Irvine Center Drive	66.4	RW	77	167

Table 10

305	Laguna Canyon Road	Alton Parkway to Barranca Parkway	66.1	RW	74	160
306	Laguna Canyon Road	Barranca Parkway to Waterworks	65.6	RW	68	148
307	Lake Forest Drive	Hidden Canyon to Laguna Canyon Road	69.5	RW	125	269
308	Lake Forest Drive	Bake Parkway to Hidden Canyon (Romano)	69.5	RW	124	267
309	Lake Forest Drive	Tesla to Bake Parkway	66.6	RW	107	231
310	Lake Road	Alton Parkway to Barranca Parkway	59.2	RW	RW	RW
311	Lynx	Irvine Boulevard to Astor	53.2	RW	RW	RW
312	MacArthur Boulevard	I-405 SB Off-Ramp to Michelson Drive	76.7	281	606	1305
313	MacArthur Boulevard	Main Street to I-405 NB Off-Ramp	76.7	278	599	1291
314	MacArthur Boulevard	I-405 NB Off-Ramp and I-405 SB Off-Ramp	76.6	275	593	1278
315	MacArthur Boulevard	Jamboree Road to Fairchild Road	69.9	RW	178	382
316	MacArthur Boulevard	Fairchild Road to University Drive	69.8	RW	176	380
317	MacArthur Boulevard	Fitch to Red Hill Avenue	70.5	86	185	399
318	MacArthur Boulevard	Michelson Drive to Douglas	72.2	141	303	652
319	MacArthur Boulevard	Douglas to Campus Drive	72.2	140	302	650
320	MacArthur Boulevard	Skypark to Main Street	69.5	RW	160	344
321	MacArthur Boulevard	Redhill Avenue to Skypark	68.4	RW	141	303
322	MacArthur Boulevard	Birch Street to Jamboree Road	67.1	RW	117	251
323	MacArthur Boulevard	Campus Drive to Birch Street	69.4	RW	198	427
324	Main Street	Gillette Avenue to Von Karman Avenue	70.8	90	195	420
325	Main Street	MacArthur Boulevard to Mercantile	70.3	83	179	386
326	Main Street	Executive Park to MacArthur Boulevard	68.4	RW	142	305
327	Main Street	Von Karman Avenue to Cartwright	68.4	RW	141	304
328	Main Street	McDurmott to Red Hill Avenue	68.1	RW	135	290
329	Main Street	Red Hill Avenue to Executive Circle	68.0	RW	133	286
330	Main Street	Jamboree Road to Union	67.8	RW	129	279
331	Main Street	Culver Drive to West Yale Loop	67.2	RW	87	188
332	Main Street	Siglo to Jamboree Road	67.7	RW	127	273
333	Main Street	Veneto to Harvard Avenue	67.5	RW	124	267
334	Main Street	Paseo Westpark to Culver Drive	66.3	RW	77	166
335	Main Street	Harvard Avenue to San Mateo	66.3	RW	76	164

Table 10

336	Marine Way	Sand Canyon Avenue to Ridge Valley (O Street)	72.3	71	153	330
337	Marine Way	Alton Parkway to Bake Parkway	69.3	RW	121	261
338	Marine Way	Lynx to Barranca Parkway	69.3	RW	122	262
339	Marine Way	County Access to Treble	68.4	RW	106	228
340	Marine Way	Ridge Valley (O Street) to Skyhawk	68.2	RW	102	220
341	Marine Way	Skyhawk to County Access	67.2	RW	87	187
342	Marine Way	Barranca Parkway to Alton Parkway	66.8	RW	82	177
343	Marine Way	Treble to Lynx	66.4	RW	78	168
344	McGaw Avenue	Von Karman Avenue to Jamboree Road	64.3	RW	RW	121
345	McGaw Avenue	Red Hill Avenue to Von Karman Avenue	64.2	RW	RW	119
346	McGaw Avenue	Daimler to Red Hill Avenue	62.5	RW	RW	91
347	McGaw Avenue	Jamboree Road to Murphy Avenue	59.4	RW	RW	RW
348	Meadowood	Culver Drive to Canyonwood	59.8	RW	RW	RW
349	Meridian	Spectrum to Alton Parkway	55.5	RW	RW	RW
350	Meridian	Alton Parkway to Gateway Boulevard	54.7	RW	RW	RW
351	Merit	Irvine Boulevard to Cadence	58.0	RW	RW	RW
352	Michelson Drive	Riparian to Harvard Avenue	68.3	RW	103	222
353	Michelson Drive	Almond Tree Lane to Yale Avenue	67.1	RW	52	112
354	Michelson Drive	Von Karman Avenue to Obsidian	68.0	RW	99	214
355	Michelson Drive	Parkside to Culver Drive	67.8	RW	96	206
356	Michelson Drive	Gillman to Seton/Sandburg Way	66.8	RW	49	106
357	Michelson Drive	Carlson to Prince	67.3	RW	107	230
358	Michelson Drive	MacArthur Boulevard to Dupont Drive	67.3	RW	90	193
359	Michelson Drive	Harvard Avenue to Parkside	66.8	RW	83	178
360	Michelson Drive	Bixby to Von Karman Avenue	66.7	RW	81	175
361	Michelson Drive	Jamboree Road to Carlson	69.6	RW	122	262
362	Michelson Drive	Teller to Jamboree Road	69.6	RW	122	264
363	Michelson Drive	Jordan East to University Drive	66.9	RW	40	87
364	Michelson Drive	Culver Drive to Angell	66.2	RW	48	104
365	Modjeska (A Street)	Portola Springs to Irvine Boulevard	71.7	39	84	182
366	Modjeska (A Street)	South of Irvine Boulevard	61.0	RW	RW	44

Table 10

367	Muirlands Boulevard	Bake Parkway to City Limits	67.2	RW	88	190
368	Muirlands Boulevard	Alton Parkway to Sterling	66.3	RW	76	165
369	Muirlands Boulevard	Wrigley to Bake Parkway	66.3	RW	76	165
370	Newport Coast Drive	SR-73 NB Off-Ramp to Turtle Ridge	66.6	RW	80	173
371	Newport Coast Drive	Turtle Crest to Bonita Canyon Drive	65.1	RW	63	137
372	Nightmist	Sand Canyon Avenue to Tulip (Road C)	61.8	RW	RW	83
373	Northwood	Yale Avenue to Savannah	62.5	RW	RW	55
374	Northwood	Goldrush to Yale Avenue	61.5	RW	RW	47
375	Oak Canyon Drive	Valley Oak Drive to Sand Canyon Avenue	69.2	RW	72	155
376	Pacifica	Gateway to Barranca Parkway	65.2	RW	65	140
377	Pacifica	Alton Parkway to Gateway	64.0	RW	RW	116
378	Pacifica	Irvine Center Drive to Fortune Drive (Spectrum Center Drive)	62.8	RW	RW	95
379	Pacifica	Meridian to Alton Parkway	60.8	RW	RW	70
380	Park Place	Christamon South to Yale Avenue	57.0	RW	RW	RW
381	Portola Parkway	Bee Canyon Access Road to Sand Canyon Avenue	71.7	81	174	375
382	Portola Parkway	Jeffrey Road to Bee Canyon Access Road	71.7	81	174	374
383	Portola Parkway	Arrowhead to Ridge Valley Parkway	71.5	78	169	363
384	Portola Parkway	Sand Canyon Avenue to Arrowhead	71.1	74	159	343
385	Portola Parkway	Portola Springs to SR-241 SB Off-Ramp	70.1	64	137	296
386	Portola Parkway	Gatepark to Culver Drive	70.7	94	202	436
387	Portola Parkway	ETC-6 (SR-261) NB Off-Ramp to Gatepark	70.7	93	200	432
388	Portola Parkway	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.5	91	196	423
389	Portola Parkway	Jamboree Road to Bellevue	70.5	91	195	420
390	Portola Parkway	Bellevue to ETC-6 (SR-261) SB Off-Ramp	70.4	90	194	418
391	Portola Parkway	Yale Avenue to Jeffrey Road	70.2	87	187	404
392	Portola Parkway	Culver Drive to Yale Avenue	69.7	RW	172	371
393	Portola Parkway	Silverado to Portola Springs	68.6	RW	109	235
394	Pusan	Irvine Boulevard to Cadence	56.1	RW	RW	RW
395	Quail Hill Parkway	Shady Canyon Drive to Passage	67.4	RW	91	196
396	Quail Hill Parkway	East Knollcrest to Laguna Canyon Road	65.5	RW	67	145
397	Quassar Drive (Spectrum)	Irvine Center Drive to Spectrum Center Drive (Fortune)	54.9	RW	RW	RW

Table 10

398	Red Hill Avenue	MacArthur Boulevard to McGaw Avenue	71.6	107	230	496
399	Red Hill Avenue	I-405 Over Crossing to Main Street	70.2	64	139	299
400	Red Hill Avenue	Alton Parkway to Deere Avenue	70.1	85	184	397
401	Red Hill Avenue	McGaw Avenue to Alton Parkway	70.0	84	181	391
402	Red Hill Avenue	Deere Avenue to Barranca Parkway	69.9	RW	177	382
403	Red Hill Avenue	Skypark East to MacArthur Boulevard	71.4	74	160	345
404	Red Hill Avenue	Main Street to Skypark East	70.8	67	145	313
405	Research Drive	Hubble to Bake Parkway	69.5	RW	125	270
406	Research Drive	Scientific to Lake Forest Drive	67.8	RW	96	207
407	Research Drive	Bake Parkway to Muller	66.7	RW	82	176
408	Research Drive	Irvine Center Drive to Bunsen	65.7	RW	69	149
409	Ridge Valley (O Street)	Irvine Boulevard to Trabuco Road (Great Park Boulevard)	67.3	RW	89	191
410	Ridge Valley (O Street)	Portola Parkway to Irvine Boulevard	66.4	RW	78	168
411	Ridge Valley (O Street)	Trabuco Road (Great Park Boulevard) to Marine Way	66.0	RW	73	157
412	Ridge Valley (O Street)	Ranchland to Portola Parkway	58.1	RW	RW	RW
413	Ridgeline Drive	Concordia East to University Drive	68.7	RW	71	153
414	Ridgeline Drive	Turtle Rock Drive to San Simeon	68.4	RW	67	145
415	Rockfield Avenue	Whatney to McLaren	67.7	RW	95	204
416	Rockfield Avenue	Bake Parkway to Whatney	64.2	RW	RW	119
417	Rockfield Avenue	Thomas to Bake Parkway	63.1	RW	RW	100
418	Roosevelt	Jeffrey Road to Vision	66.6	RW	80	173
419	Roosevelt	Yale Avenue to Van Buren	68.2	RW	49	106
420	Roosevelt	Vision to Bay Tree	66.4	RW	78	167
421	Roosevelt	Nimitz to Jeffrey Road	65.9	RW	72	155
422	Roosevelt	Tulip (Road C) to Sand Canyon Avenue	65.7	RW	70	151
423	Royal Oak	Alton Parkway to Eaglecreek	64.0	RW	RW	56
424	Sand Canyon Avenue	Oak Canyon Drive to Burt Road	72.1	116	250	539
425	Sand Canyon Avenue	Irvine Center Drive to Oak Canyon Drive	72.0	114	247	531
426	Sand Canyon Avenue	I-405 NB Off-Ramp to Alton Parkway	74.6	122	262	564
427	Sand Canyon Avenue	Burt Road to I-5 SB Off-Ramp	72.7	122	262	565
428	Sand Canyon Avenue	Marine to I-5 NB Off-Ramp	74.8	208	448	965

Table 10

429	Sand Canyon Avenue	Trabuco Road to Towngate	71.3	102	220	473
430	Sand Canyon Avenue	Barranca Parkway to Waterworks	70.9	96	207	447
431	Sand Canyon Avenue	I-5 SB Off-Ramp to Marine	74.0	184	396	854
432	Sand Canyon Avenue	Hospital to Barranca Parkway	70.6	92	199	429
433	Sand Canyon Avenue	Nightmist to Roosevelt	73.5	171	369	794
434	Sand Canyon Avenue	I-405 SB Off-Ramp to I-405 NB Off-Ramp	73.5	103	222	479
435	Sand Canyon Avenue	I-5 NB Off-Ramp to Nightmist	73.7	177	382	824
436	Sand Canyon Avenue	Towngate to Irvine Boulevard	70.7	93	201	433
437	Sand Canyon Avenue	Waterworks to Irvine Center Drive	70.3	88	189	408
438	Sand Canyon Avenue	Irvine Boulevard to Portola Parkway	70.4	66	142	306
439	Sand Canyon Avenue	Roosevelt to Trabuco Road	72.8	153	331	712
440	Sand Canyon Avenue	Alton Parkway to Hospital	70.6	88	190	410
441	Sand Canyon/Shady Canyon	Quail Hill Parkway to I-405 SB Ramps	71.8	79	170	366
442	Scientific Way	Irvine Center Drive to Wald	54.9	RW	RW	RW
443	Shady Canyon Drive	Culver Drive/Bonita Canyon Drive to Cloverfield	69.2	RW	72	154
444	Shady Canyon Drive	Bommer Canyon Road to Sunnyhill	67.6	RW	75	161
445	Skyhawk	Great Park Boulevard to Marine Way	59.6	13	27	59
446	Southwood	Yale Avenue to Colt	60.6	9	19	41
447	Southwood	Challenger to Yale Avenue	60.3	8	18	39
448	Spectrum Center Drive (Fortune Drive)	Pacifica to Quassar Drive (Spectrum )	62.0	18	39	85
449	Spectrum Center Drive (FortuneDrive)	Quassar Drive (Spectrum ) to Gatewayb	62.5	20	42	91
450	Sunnyhill	Shady Canyon Drive to Turtle Rock Drive	57.6	9	20	43
451	Technology Drive	Barranca Parkway to Alton Parkway	70.6	68	147	318
452	Technology Drive	Old Laguna Canyon Road to I-5/SR-133 Undercrossing	69.3	56	120	259
453	Technology Drive	I-5/SR-133 to Barranca Parkway	69.1	54	117	252
454	Technology Drive	Ada to Alton Parkway	63.1	22	47	100
455	Toledo Way	Bake Parkway to City Limits	65.7	32	70	151
456	Toledo Way	Goodyear to Bake Parkway	64.7	28	60	129
457	Toledo Way	Alton Parkway to Parker	64.4	26	57	122
458	Trabuco Road	Keystone to Sand Canyon Avenue	67.2	40	87	188
459	Trabuco Road	Jeffrey Road to Keystone	66.9	39	84	181

Table 10

460	Trabuco Road	Culver Drive to I-5 NB Off-Ramp	66.8	38	82	176
461	Trabuco Road	Monroe to Yale Avenue	66.7	38	81	176
462	Trabuco Road	I-5 NB Off-Ramp to Monroe	66.6	37	80	173
463	Trabuco Road	Yale Avenue to Remington	66.3	35	76	164
464	Trabuco Road	Remington to Jeffrey Road	66.1	34	74	158
465	Turtle Ridge Drive	Federation Way to Bonita Canyon	68.7	52	111	239
466	Turtle Rock Drive	Ridgeline to Willowleaf	67.8	27	58	125
467	Turtle Rock Drive	Silkwood to Sunnyhill	67.8	27	57	124
468	Turtle Rock Drive	Canyon Park to Ridgeline	67.0	24	51	109
469	Turtle Rock Drive	Sunnyhill to Southernwood	64.0	15	32	69
470	Turtle Rock Drive	Campus Drive to Hillgate	64.0	25	54	116
471	Turtle Rock Drive	Paseo Segovia to Campus Drive	65.4	20	43	92
472	University Drive	Golden Glow to Yale Avenue	73.0	99	213	458
473	University Drive	Ridgeline to Michelson Drive	72.6	111	240	517
474	University Drive	Culver Drive to Golden Glow	72.9	97	209	450
475	University Drive	Yale Avenue to Ridgeline	72.4	90	193	417
476	University Drive	Michelson Drive to I-405 SB Off-Ramp	72.7	127	274	591
477	University Drive	Mesa to Campus Drive	74.6	121	260	561
478	University Drive	MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	74.6	122	263	567
479	University Drive	California Avenue to Mesa	74.4	119	256	551
480	University Drive	Campus Drive to Harvard Avenue	70.7	94	203	437
481	University Drive	SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	71.7	65	140	301
482	University Drive	SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps	70.3	89	191	411
483	University Drive	San Joaquin to Culver Drive	69.8	81	176	378
484	University Drive	Harvard Avenue to San Joaquin	69.8	81	175	377
485	Valley Oak Drive	Hawkcreek to Barranca Parkway	68.0	46	98	212
486	Valley Oak Drive	Irvine Center Drive to Oak Canyon Drive	69.1	43	93	201
487	Valley Oak Drive	Barranca Parkway to Irvine Center Drive	66.8	38	83	178
488	Valley Oak Drive	Alton Parkway to Hawkcreek	64.8	28	61	131
489	Von Karman Avenue	Marriott to Morse Avenue	70.9	72	155	334
490	Von Karman Avenue	Michelson Drive to Quartz	70.8	70	151	326



Table 10

491	Von Karman Avenue	McGaw Avenue to Alton Parkway	70.7	70	150	324
492	Von Karman Avenue	Alton Parkway to Barranca Parkway	70.4	80	172	370
493	Von Karman Avenue	Main Street to Anchor	70.6	69	149	320
494	Von Karman Avenue	Anchor to McGaw Avenue	70.5	67	145	313
495	Von Karman Avenue	Morse to Main Street	70.2	65	140	301
496	Von Karman Avenue	Martin to Dupont Drive	69.6	59	126	272
497	Von Karman Avenue	Campus Drive to Martin	69.5	58	125	269
498	Von Karman Avenue	Dupont Drive to Michelson Drive	69.5	58	125	268
499	Walnut Avenue	Jeffrey Road to I-5 SB Off-Ramp	70.9	71	154	332
500	Walnut Avenue	Myford Road to Jamboree Road SB Off-Ramp	69.1	54	117	252
501	Walnut Avenue	The Mall Street to Culver Drive	68.8	52	111	240
502	Walnut Avenue	Harvard Avenue to The Mall Street	68.7	51	111	239
503	Walnut Avenue	Franciscan Street to Ravenwood Street	68.5	50	107	230
504	Walnut Avenue	Ravenwood Street to Yale Avenue	68.3	48	104	225
505	Walnut Avenue	Culver Drive to Franciscan Street	68.4	49	105	226
506	Walnut Avenue	Peters Canyon Road to Harvard Avenue	68.0	62	133	286
507	Walnut Avenue	Jamboree Road NB Off-Ramp to Peters Canyon Road	67.8	60	129	278
508	Walnut Avenue	Yale Avenue to Kazan Street	67.2	41	88	189
509	Walnut Avenue	Wisteria to Jeffrey Road	67.2	40	87	188
510	Warner Avenue	Jamboree Road SB Off-ramp to Construction North	70.1	64	137	295
511	Warner Avenue	Construction North to Harvard Avenue	68.5	50	107	231
512	Warner Avenue	Harvard Avenue to Paseo Westpark	67.0	39	85	182
513	Warner Avenue	Santa Ynez to Culver Drive	66.0	34	73	157
514	Warner Avenue	Culver Drive to West Yale Loop	65.7	32	70	150
515	West Yale Loop	Alton Parkway to Blue Lake North	64.0	25	54	116
516	West Yale Loop	Eagle Run to Main Street	63.9	24	52	113
517	West Yale Loop	Thunder Run to Yale Avenue	63.9	25	53	114
518	West Yale Loop	Main Street to Timber Run	62.8	21	45	96
519	West Yale Loop	Yale Avenue to Shorebird	63.0	21	46	100
520	West Yale Loop	Warner Avenue to Stonecreek South	62.6	20	43	93
521	West Yale Loop	Barranca Parkway to Alton Parkway	62.4	20	42	91

Table 10

522	West Yale Loop	Stonecreek North to Warner Avenue	62.5	20	42	91
523	West Yale Loop	Birdsong to Barranca Parkway	62.3	19	42	90
524	Westwood	Yorktown to Bryan Avenue	63.5	14	30	65
525	Westwood	Bryan Avenue to Leaf	61.5	10	22	47
526	Yale Avenue	Deerfield Avenue to Winvale Avenue	68.6	30	66	141
527	Yale Avenue	Hicks Canyon Drive to Meadowood	67.3	25	54	116
528	Yale Avenue	Walnut Avenue to Roosevelt	71.0	47	101	218
529	Yale Avenue	Roosevelt to Trabuco Road	67.1	40	86	185
530	Yale Avenue	Irvine Center Drive to Deerfield Avenue	66.9	39	84	180
531	Yale Avenue	West Yale Loop to Irvine Center Drive	66.4	36	77	166
532	Yale Avenue	Winvale Avenue to Karen Ann Lane	65.7	32	70	151
533	Yale Avenue	Karen Ann Lane to Walnut Avenue	65.7	32	70	151
534	Yale Avenue	Trabuco Road to Southwood	65.7	32	69	149
535	Yale Avenue	Southwood to Bryan Avenue	65.5	31	67	145
536	Yale Avenue	Northwood to Irvine Boulevard	65.1	30	64	138
537	Yale Avenue	Bryan Avenue to Monticello	65.0	29	63	135
538	Yale Avenue	Irvine Boulevard to Park Place	64.3	26	56	120
539	Yale Avenue	University Drive to Royce	63.5	18	40	85
540	Yale Court	Arborwood to Portola Parkway	60.3	9	18	40

<sup>1</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the nearest receiving land use.  
 "RW" = Location of the respective noise contour falls within the right-of-way of the road.

Table 11

Table 11: Existing and Current General Plan Traffic Noise Level Increases

ID	Road	Segment	CNEL at Receiving Land Use (dBA) <sup>2</sup>			Incremental Noise Level Increase Threshold <sup>3</sup>	
			Existing	Current General Plan	Project Addition	Limit	Exceeded?
1	Ada	Barranca Parway to Marine Way	0.0	0.0	0.0	5.0	No
2	Ada	Alton Parkway to Barranca Parkway	60.3	67.1	6.8	3.0	Yes
3	Alton Parkway	Enterprise to I-5 NB Off-Ramp	71.3	72.6	1.3	1.5	No
4	Alton Parkway	I-5 NB Off-Ramp to Technology Drive West	72.1	73.3	1.2	1.5	No
5	Alton Parkway	East Yale Loop to Jeffrey Road	71.3	71.5	0.2	1.5	No
6	Alton Parkway	Gateway Boulevard to Enterprise	69.3	70.5	1.2	1.5	No
7	Alton Parkway	Jeffrey Road to Royal Oak	70.1	70.4	0.3	1.5	No
8	Alton Parkway	Daimler Street to Red Hill Avenue	63.7	70.4	6.7	3.0	Yes
9	Alton Parkway	Culver Drive to West Yale Loop	70.4	70.5	0.1	1.5	No
10	Alton Parkway	West Yale Loop to Lake Road	70.3	70.5	0.2	1.5	No
11	Alton Parkway	Technology Drive West to Ada	70.2	71.4	1.2	1.5	No
12	Alton Parkway	Creek Road to East Yale Loop	70.1	70.3	0.2	1.5	No
13	Alton Parkway	Red Hill Avenue to Von Karman Avenue	68.1	69.9	1.8	1.5	Yes
14	Alton Parkway	Lake Road to Creek Road	70.1	70.3	0.2	1.5	No
15	Alton Parkway	Telemetry to Banting	69.0	69.8	0.8	1.5	No
16	Alton Parkway	Irvine Boulevard to Commercentre	70.3	71.0	0.7	1.5	No
17	Alton Parkway	Jenner to Telemetry	69.0	69.7	0.7	1.5	No
18	Alton Parkway	Irvine Center Drive to Gateway Boulevard	68.6	69.8	1.2	1.5	No
19	Alton Parkway	Sand Canyon Avenue to Hospital	72.1	73.6	1.5	1.5	Yes
20	Alton Parkway	Laguna Canyon Road to Jenner	69.0	69.7	0.7	1.5	No
21	Alton Parkway	Technology Drive East to Barranca Pkwy/Muirlands Blvd	69.1	70.4	1.3	1.5	No
22	Alton Parkway	Royal Oak to Valley Oak Drive	69.4	69.7	0.3	1.5	No
23	Alton Parkway	Banting to Pacifica	68.4	69.3	0.9	1.5	No
24	Alton Parkway	Barranca Pkwy/Muirlands Blvd to Jeronimo Road	70.1	70.3	0.2	1.5	No
25	Alton Parkway	Ada to Technology Drive East	69.2	70.2	1.0	1.5	No
26	Alton Parkway	Von Karman Avenue to Jamboree Road	68.7	69.2	0.5	1.5	No
27	Alton Parkway	Jeronimo Road to Hughes	69.8	69.9	0.1	1.5	No
28	Alton Parkway	Hughes to Morgan	69.5	69.7	0.2	1.5	No

Table 11

29	Alton Parkway	Morgan to Toledo Way	68.8	69.0	0.2	1.5	No
30	Alton Parkway	San Marino to Culver Drive	68.8	69.0	0.2	1.5	No
31	Alton Parkway	Jamboree Road to Murphy Avenue	68.0	68.6	0.6	1.5	No
32	Alton Parkway	Hospital to Laguna Canyon Road	70.7	71.5	0.8	1.5	No
33	Alton Parkway	Valley Oak Drive to Sand Canyon Avenue	71.1	71.4	0.3	1.5	No
34	Alton Parkway	Murphy Avenue to Harvard Avenue	68.1	68.5	0.4	1.5	No
35	Alton Parkway	Foster to Irvine Boulevard	68.0	69.0	1.0	1.5	No
36	Alton Parkway	Fairbanks to Foster	67.5	68.7	1.2	1.5	No
37	Alton Parkway	Toledo Way to Bertea	68.2	68.4	0.2	1.5	No
38	Alton Parkway	Pacifica to Meridian	69.7	70.7	1.0	1.5	No
39	Alton Parkway	Bertea to Fairbanks	68.1	68.3	0.2	1.5	No
40	Alton Parkway	Meridian to Irvine Center Drive	66.6	67.5	0.9	1.5	No
41	Alton Parkway	Paseo Westpark to San Marino	67.9	68.0	0.1	1.5	No
42	Alton Parkway	Harvard Avenue to Paseo Westpark	66.9	67.1	0.2	1.5	No
43	Astor	Lynx to Fairbanks	57.5	66.9	9.4	5.0	Yes
44	Astor	Cadence to Lynx	0.0	66.0	66.0	5.0	Yes
45	Bake Parkway	I-5 NB Off-Ramp to Rockfield Boulevard	75.4	76.4	1.0	1.5	No
46	Bake Parkway	Muirlands Boulevard to Jeronimo Road	72.7	72.9	0.2	1.5	No
47	Bake Parkway	Rockfield Boulevard to Muirlands Boulevard	74.7	75.1	0.4	1.5	No
48	Bake Parkway	Jeronimo Road to Toledo Way	71.9	72.0	0.1	1.5	No
49	Bake Parkway	Toledo Way to Cromwell	71.5	71.6	0.1	1.5	No
50	Bake Parkway	Cromwell to Irvine Boulevard	71.4	71.6	0.2	1.5	No
51	Bake Parkway	Research Drive to I-5 SB Off-Ramp	68.5	69.3	0.8	1.5	No
52	Bake Parkway	Irvine Center Drive to Research Drive	64.1	64.6	0.5	3.0	No
53	Bake Parkway	Lake Forest Drive to Irvine Center Drive	61.9	63.0	1.1	3.0	No
54	Banting	Alton Parkway to Barranca Parkway	57.6	59.3	1.7	5.0	No
55	Barranca Parkway	Pacifica to Irvine Center Drive	70.5	71.7	1.2	1.5	No
56	Barranca Parkway	Banting to Pacifica	70.7	71.8	1.1	1.5	No
57	Barranca Parkway	I-5 HOV Ramp to Technology Drive West	69.8	70.9	1.1	1.5	No
58	Barranca Parkway	Technology Drive West to Ada	70.4	71.5	1.1	1.5	No
59	Barranca Parkway	Irvine Center Drive to I-5 HOV Ramp	69.3	70.8	1.5	1.5	Yes
60	Barranca Parkway	Culver Drive to West Yale Loop	71.9	72.0	0.1	1.5	No
61	Barranca Parkway	East Yale Loop to Jeffrey Road	71.7	71.7	0.0	1.5	No
62	Barranca Parkway	West Yale Loop to Lake Road	71.6	71.8	0.2	1.5	No

Table 11

63	Barranca Parkway	Ada to Alton Parkway	70.2	72.3	2.1	1.5	Yes
64	Barranca Parkway	Lake Road to Creek Road	71.2	71.4	0.2	1.5	No
65	Barranca Parkway	Red Hill Avenue to Armstrong Avenue	73.3	74.4	1.1	1.5	No
66	Barranca Parkway	Discovery/Herchel to Banting	69.7	71.1	1.4	1.5	No
67	Barranca Parkway	Lyon to East Yale Loop	71.0	71.1	0.1	1.5	No
68	Barranca Parkway	Creek Road to Lyon	70.9	71.1	0.2	1.5	No
69	Barranca Parkway	Von Karman Avenue to Jamboree Road	71.5	72.4	0.9	1.5	No
70	Barranca Parkway	Sand Canyon Avenue to Laguna Canyon Road	68.5	70.6	2.1	1.5	Yes
71	Barranca Parkway	Armstrong Avenue to Von Karman Avenue	72.0	72.1	0.1	1.5	No
72	Barranca Parkway	Valley Oak Drive to Sand Canyon Avenue	69.1	70.4	1.3	1.5	No
73	Barranca Parkway	Jamboree Road to Construction Circle	70.1	70.7	0.6	1.5	No
74	Barranca Parkway	Santa Rosa to Culver Drive	69.8	70.6	0.8	1.5	No
75	Barranca Parkway	FedEx to Discovery/Herchel	68.8	69.6	0.8	1.5	No
76	Barranca Parkway	Jeffrey Road to Valley Oak Drive	68.3	69.7	1.4	1.5	No
77	Barranca Parkway	Laguna Canyon Road to FedEx	68.8	69.4	0.6	1.5	No
78	Barranca Parkway	Pullman Street to Red Hill Avenue	72.7	73.4	0.7	1.5	No
79	Barranca Parkway	Construction Circle to Fire Station	69.4	70.1	0.7	1.5	No
80	Barranca Parkway	Fire Station to Harvard Avenue	69.4	70.1	0.7	1.5	No
81	Barranca Parkway	Paseo Westpark to Santa Rosa	69.3	70.1	0.8	1.5	No
82	Barranca Parkway	Harvard Avenue to Paseo Westpark	69.2	69.7	0.5	1.5	No
83	Bay Tree	Trabuco Road to Roosevelt	56.1	57.2	1.1	5.0	No
84	Beacon	Ridge Valley to Benchmark	0.0	59.0	59.0	5.0	Yes
85	Benchmark (LN Street)	Ridge Valley (O Street) to Bosque	0.0	56.7	56.7	5.0	Yes
86	Bison Avenue	SR-73 NB Off-Ramp to California Avenue	68.6	69.7	1.1	1.5	No
87	Bonita Canyon Drive	MacArthur Boulevard to SR-73	70.0	70.2	0.2	1.5	No
88	Bonita Canyon Drive	Turtle Ridge to Shady Canyon Drive	67.5	68.5	1.0	1.5	No
89	Bonita Canyon Drive	Newport Coast Drive to Turtle Ridge	67.5	68.2	0.7	1.5	No
90	Bonita Canyon Drive	SR-73 NB Off-Ramp to Newport Coast Drive	67.5	67.9	0.4	1.5	No
91	Bosque	Cadence to Great Park Boulevard	63.0	64.8	1.8	3.0	No
92	Bosque	Irvine Boulevard to Benchmark (LN Street)	59.7	63.0	3.3	5.0	No
93	Bosque	Benchmark to Cadence	59.7	63.0	3.3	5.0	No
94	Bosque	Great Park Boulevard to Beacon	0.0	56.9	56.9	5.0	Yes
95	Bosque	Beacon to S 5th Street	0.0	55.9	55.9	5.0	Yes
96	Bryan Avenue	Jamboree Road to Market Place	68.7	68.9	0.2	1.5	No

Table 11

97	Bryan Avenue	Market Place to El Camino Real	68.7	68.9	0.2	1.5	No
98	Bryan Avenue	Rubicon to Culver Drive	68.7	68.9	0.2	1.5	No
99	Bryan Avenue	El Camino Real to Rubicon	68.7	68.9	0.2	1.5	No
100	Bryan Avenue	Eastwood to Jeffrey Road	65.8	66.3	0.5	1.5	No
101	Bryan Avenue	Westwood to Yale Avenue	66.3	66.3	0.0	1.5	No
102	Bryan Avenue	Culver Drive to Westwood	66.3	66.4	0.1	1.5	No
103	Bryan Avenue	Yale Avenue to Eastwood	65.8	66.0	0.2	1.5	No
104	Cadence	Pusan to Chinon	64.5	64.1	-0.4	3.0	No
105	Cadence	Bosque to Pusan	65.7	64.2	-1.5	1.5	No
106	Cadence	Ridge Valley (O Street) to Bosque	62.6	64.0	1.4	3.0	No
107	Cadence	Chinon to Merit	62.6	59.1	-3.5	3.0	No
108	Cadence	Merit to Astor	0.0	58.6	58.6	5.0	Yes
109	California Avenue	University Drive to Academy Way	64.3	66.2	1.9	3.0	No
110	California Avenue	Campus Drive to Harvard Avenue	63.2	64.1	0.9	3.0	No
111	California Avenue	Theory to Bison Avenue	63.1	64.0	0.9	3.0	No
112	Campus Drive	Carlson Avenue to University Drive	70.9	73.0	2.1	1.5	Yes
113	Campus Drive	University Drive to Bridge Road	70.1	71.7	1.6	1.5	Yes
114	Campus Drive	Jamboree Road to Carlson Avenue	69.0	71.3	2.3	1.5	Yes
115	Campus Drive	Stanford Court to Berkeley Avenue	70.1	71.0	0.9	1.5	No
116	Campus Drive	California Avenue to Culver Drive	68.9	70.9	2.0	1.5	Yes
117	Campus Drive	Berkeley Avenue to Cornell	68.9	69.9	1.0	1.5	No
118	Campus Drive	Martin to Von Karman Avenue	67.5	68.7	1.2	1.5	No
119	Campus Drive	Culver Drive to Paseo Montoya (Turtle Rock Drive)	68.5	68.6	0.1	1.5	No
120	Campus Drive	Von Karman Avenue to Teller Avenue	66.8	68.1	1.3	1.5	No
121	Campus Drive	MacArthur Boulevard to Martin	67.5	68.1	0.6	1.5	No
122	Campus Drive	Teller Avenue to Jamboree Road	66.8	67.2	0.4	1.5	No
123	Carlson Avenue	Michelson Drive to Campus Drive	64.5	67.8	3.3	3.0	Yes
124	Chinon	Irvine Boulevard to Cadence	56.6	58.3	1.7	5.0	No
125	Creek Road	Alton Parkway to Barranca Parkway	55.3	56.0	0.7	5.0	No
126	Culver Drive	Michelson Drive to I-405 SB Off-Ramp	73.4	73.7	0.3	1.5	No
127	Culver Drive	I-405 SB Off-Ramp to I-405 NB Off Ramp	73.4	73.9	0.5	1.5	No
128	Culver Drive	I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)	73.7	73.9	0.2	1.5	No
129	Culver Drive	Scottsdale Drive to I-5 SB Off- Ramp	73.7	73.9	0.2	1.5	No
130	Culver Drive	I-405 NB Off-Ramp to San Leandro	73.4	73.6	0.2	1.5	No

Table 11

131	Culver Drive	San Leandro to Main Street	73.2	73.3	0.1	1.5	No
132	Culver Drive	Harvard Avenue to University Drive	72.7	73.3	0.6	1.5	No
133	Culver Drive	Trabuco Road to Farwell Avenue	74.1	74.4	0.3	1.5	No
134	Culver Drive	Alton Parkway to Barranca Parkway	72.9	73.2	0.3	1.5	No
135	Culver Drive	Main Street to Alton Parkway	72.7	73.1	0.4	1.5	No
136	Culver Drive	Warner Avenue to Irvine Center Drive	72.7	73.0	0.3	1.5	No
137	Culver Drive	Walnut Avenue to Scottsdale Dive	72.6	72.9	0.3	1.5	No
138	Culver Drive	Barranca Parkway to Warner Avenue	72.6	72.8	0.2	1.5	No
139	Culver Drive	Shady Canyon Drive to Palo Verde	71.4	72.1	0.7	1.5	No
140	Culver Drive	Deerfield Avenue to Walnut Avenue	72.3	72.6	0.3	1.5	No
141	Culver Drive	Sandburg Way to Michelson Drive	71.9	72.5	0.6	1.5	No
142	Culver Drive	Irvine Center Drive to Deerfield Avenue	72.1	72.4	0.3	1.5	No
143	Culver Drive	Palo Verde to Campus Drive	71.4	71.6	0.2	1.5	No
144	Culver Drive	University Drive to Sandburg Way	71.5	72.2	0.7	1.5	No
145	Culver Drive	Farwell Avenue to Bryan Avenue	72.8	73.3	0.5	1.5	No
146	Culver Drive	Campus Drive to High School	71.6	72.1	0.5	1.5	No
147	Culver Drive	High School to Harvard Avenue	71.6	72.0	0.4	1.5	No
148	Culver Drive	Bryan Avenue to Florence	71.5	71.8	0.3	1.5	No
149	Culver Drive	Portola Parkway to Settlers	68.9	71.1	2.2	1.5	Yes
150	Culver Drive	Florence to Irvine Boulevard	71.3	71.7	0.4	1.5	No
151	Culver Drive	Irvine Boulevard to Viewpark	70.0	70.5	0.5	1.5	No
152	Culver Drive	Viewpark to Meadowood	70.0	70.5	0.5	1.5	No
153	Culver Drive	Settlers to Furrow	0.0	68.3	68.3	5.0	Yes
154	Culver Drive	Meadowood to Portola Parkway	68.3	69.0	0.7	1.5	No
155	Discovery Drive	Irvine Center Drive to Laguna Canyon Road	56.6	63.8	7.2	5.0	Yes
156	Discovery Drive	Waterworks Way to Irvine Center Drive	0.0	60.7	60.7	5.0	Yes
157	East Yale Loop	Alton Parkway to Witherspoon	64.6	65.3	0.7	3.0	No
158	East Yale Loop	Osborn Street to Barranca Parkway	64.3	65.0	0.7	3.0	No
159	East Yale Loop	Yale Avenue to Springbrook South	62.3	64.3	2.0	3.0	No
160	East Yale Loop	Springbrook North to Alton Parkway	62.3	63.4	1.1	3.0	No
161	East Yale Loop	Woodspring to Yale Avenue	62.3	62.5	0.2	3.0	No
162	East Yale Loop	Barranca Parkway to Eastshore	62.3	62.5	0.2	3.0	No
163	Eastwood	Bryan Avenue to Monticello	59.5	60.5	1.0	5.0	No
164	Eastwood	Columbus to Bryan Avenue	58.5	58.8	0.3	5.0	No

Table 11

165	El Camino Real	Jamboree Road to Alliance (SR-261 Bridge)	66.9	67.0	0.1	1.5	No
166	El Camino Real North	El Camino Real to Bryan Avenue	62.2	62.4	0.2	3.0	No
167	Fairbanks	Alton Parkway to Astor	61.3	69.7	8.4	3.0	Yes
168	Fairbanks	Irvine Boulevard to Alton Parkway	0.0	66.8	66.8	5.0	Yes
169	Fairchild Road	MacArthur Boulevard to Jamboree Road	63.3	64.0	0.7	3.0	No
170	Gateway Boulevard	Alton Parkway to Irvine Center Drive	57.0	62.8	5.8	5.0	Yes
171	Gateway Boulevard	Spectrum Center Drive (Fortune Drive) to Alton Parkway	59.4	61.6	2.2	5.0	No
172	Gateway Boulevard	Irvine Center Drive to Meridian	56.8	58.4	1.6	5.0	No
173	Great Park Boulevard	Sand Canyon to Ridge Valley	70.5	74.1	3.6	1.5	Yes
174	Great Park Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	64.0	69.7	5.7	3.0	Yes
175	Great Park Boulevard (EB)	Bosque to Skyhawk	0.0	68.0	68.0	5.0	Yes
176	Great Park Boulevard (WB)	Bosque to Skyhawk	0.0	67.6	67.6	5.0	Yes
177	Harvard Avenue	University Drive to Michelson Drive	71.2	71.8	0.6	1.5	No
178	Harvard Avenue	Michelson Drive to Coronado	69.5	70.2	0.7	1.5	No
179	Harvard Avenue	San Marino to Alton Parkway	69.4	70.0	0.6	1.5	No
180	Harvard Avenue	Coronado to Main Street	69.3	70.0	0.7	1.5	No
181	Harvard Avenue	San Carlo to San Marino	69.4	69.9	0.5	1.5	No
182	Harvard Avenue	Main Street to San Carlo	69.3	69.8	0.5	1.5	No
183	Harvard Avenue	Alton Parkway to San Leon	68.5	68.8	0.3	1.5	No
184	Harvard Avenue	San Juan to Barranca Parkway	68.5	68.6	0.1	1.5	No
185	Harvard Avenue	San Leon to San Juan	68.4	68.6	0.2	1.5	No
186	Harvard Avenue	Irvine Center Drive to Deerfield Avenue	65.5	67.4	1.9	1.5	Yes
187	Harvard Avenue	Deerfield Avenue to Poplar Street	65.5	67.4	1.9	1.5	Yes
188	Harvard Avenue	Barranca Parkway to Warner Avenue	67.6	67.9	0.3	1.5	No
189	Harvard Avenue	Bridge Road to University Drive	67.2	67.6	0.4	1.5	No
190	Harvard Avenue	Paseo Westpark to Irvine Center Drive	66.1	67.7	1.6	1.5	Yes
191	Harvard Avenue	Poplar Street to Walnut Avenue	66.8	68.7	1.9	1.5	Yes
192	Harvard Avenue	California Avenue to Berkeley Avenue	66.1	67.0	0.9	1.5	No
193	Harvard Avenue	Culver Drive to California Avenue	66.1	66.9	0.8	1.5	No
194	Harvard Avenue	Berkeley to Bridge Road	66.1	67.0	0.9	1.5	No
195	Harvard Avenue	Warner Avenue to Paseo Westpark	65.9	66.8	0.9	1.5	No
196	Hicks Canyon Drive	Delamesa to Yale Avenue	58.2	58.4	0.2	5.0	No
197	Hornet (5th St)	Ridge Valley (O Street) to Bosque	0.0	57.5	57.5	5.0	Yes
198	Hubble	Irvine Center Drive to Bunsen	55.5	55.7	0.2	5.0	No



Table 11

199	Irvine Boulevard	SR-133 NB Off- Ramp to Ridge Valley (O Street)	72.1	72.3	0.2	1.5	No
200	Irvine Boulevard	SR-133 SB Off-Ramp to SR-133 NB Off-Ramp	72.0	72.2	0.2	1.5	No
201	Irvine Boulevard	Sand Canyon to SR-133 SB Off-Ramp	72.9	73.1	0.2	1.5	No
202	Irvine Boulevard	Merit to Alton	71.4	71.6	0.2	1.5	No
203	Irvine Boulevard	Journey to Sand Canyon Avenue	71.4	71.6	0.2	1.5	No
204	Irvine Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	70.9	71.2	0.3	1.5	No
205	Irvine Boulevard	Pusan Way to Chinon (B Street)	70.8	71.0	0.2	1.5	No
206	Irvine Boulevard	Palo Lado to Yale Avenue	70.4	70.6	0.2	1.5	No
207	Irvine Boulevard	Culver Drive to Palo Lado	70.5	70.6	0.1	1.5	No
208	Irvine Boulevard	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.5	70.6	0.1	1.5	No
209	Irvine Boulevard	Old Myford Road to Market Place	70.3	70.5	0.2	1.5	No
210	Irvine Boulevard	Bosque (LY Street) to Modjeska	70.5	70.7	0.2	1.5	No
211	Irvine Boulevard	Jamboree Road to Old Myford Road	70.3	70.5	0.2	1.5	No
212	Irvine Boulevard	Market Place to SR-261 SB Off-Ramp	70.3	70.4	0.1	1.5	No
213	Irvine Boulevard	Jeffrey Road to Groveland	70.6	70.8	0.2	1.5	No
214	Irvine Boulevard	Bake Parkway to Lake Forest Drive	69.8	70.9	1.1	1.5	No
215	Irvine Boulevard	Independence Way (The Groves)/The Groves to Jeffrey Road	70.2	70.5	0.3	1.5	No
216	Irvine Boulevard	Chinon (B Street) to Merit	70.2	70.5	0.3	1.5	No
217	Irvine Boulevard	SR-261 NB Off-Ramp to Central Park	70.1	70.2	0.1	1.5	No
218	Irvine Boulevard	Pueblo Norte to Independence Way (The Groves)/ Parkwood	69.9	70.1	0.2	1.5	No
219	Irvine Boulevard	Yale Avenue to Pueblo Norte	69.9	70.1	0.2	1.5	No
220	Irvine Boulevard	Modjeska to Pusan Way	70.0	70.2	0.2	1.5	No
221	Irvine Boulevard	Central Park Avenue to Culver Drive	69.5	69.6	0.1	1.5	No
222	Irvine Boulevard	Parker to Bake Parkway	69.0	69.6	0.6	1.5	No
223	Irvine Boulevard	Alton Parkway to Fairbanks	68.4	68.6	0.2	1.5	No
224	Irvine Center Drive	Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp	71.3	72.5	1.2	1.5	No
225	Irvine Center Drive	Orange Tree to Valley Oak Drive	69.7	71.4	1.7	1.5	Yes
226	Irvine Center Drive	I-405 SB Off-Ramp to Research	70.9	72.1	1.2	1.5	No
227	Irvine Center Drive	Irvine Valley College to Orange Tree	69.7	71.3	1.6	1.5	Yes
228	Irvine Center Drive	Fontaine Avenue to Jeffrey Road	69.5	71.0	1.5	1.5	Yes
229	Irvine Center Drive	Culver Drive to Deerwood	69.7	71.0	1.3	1.5	No
230	Irvine Center Drive	Deerwood to Yale Avenue	69.6	71.0	1.4	1.5	No
231	Irvine Center Drive	Yale Avenue to Fontaine Avenue	69.4	70.9	1.5	1.5	Yes
232	Irvine Center Drive	Jeffrey Road to Irvine Valley College	69.7	71.1	1.4	1.5	No

Table 11

233	Irvine Center Drive	Alton Parkway to Spectrum	68.9	70.4	1.5	1.5	Yes
234	Irvine Center Drive	Spectrum to Pacifica	68.9	70.3	1.4	1.5	No
235	Irvine Center Drive	Hearthstone to Culver Drive	69.2	70.6	1.4	1.5	No
236	Irvine Center Drive	Charter to Barranca Parkway	68.1	70.2	2.1	1.5	Yes
237	Irvine Center Drive	Jamboree Road to Harvard Avenue	69.7	70.3	0.6	1.5	No
238	Irvine Center Drive	Pacifica to Entertainment (Enterprise/Fortune)	69.1	70.3	1.2	1.5	No
239	Irvine Center Drive	Valley Oak Drive to Sand Canyon Avenue	68.1	70.0	1.9	1.5	Yes
240	Irvine Center Drive	Harvard Avenue to Hearthstone	69.2	70.0	0.8	1.5	No
241	Irvine Center Drive	Research to Hubble	67.9	69.8	1.9	1.5	Yes
242	Irvine Center Drive	Barranca Parkway to Gateway Boulevard	66.9	69.4	2.5	1.5	Yes
243	Irvine Center Drive	Bake Parkway to Muller	67.9	69.9	2.0	1.5	Yes
244	Irvine Center Drive	Discovery to Charter	67.3	69.3	2.0	1.5	Yes
245	Irvine Center Drive	Hubble to Bake Parkway	67.8	69.7	1.9	1.5	Yes
246	Irvine Center Drive	Muller to Tesla	67.7	69.5	1.8	1.5	Yes
247	Irvine Center Drive	Sand Canyon Avenue to Odyssey	67.6	69.0	1.4	1.5	No
248	Irvine Center Drive	Tesla to Scientific Way	67.1	69.2	2.1	1.5	Yes
249	Irvine Center Drive	Scientific Way to Lake Forest Drive	67.2	68.9	1.7	1.5	Yes
250	Irvine Center Drive	Gateway Boulevard to Alton Parkway	66.7	68.3	1.6	1.5	Yes
251	Irvine Center Drive	Laguna Canyon Road to Discovery	66.8	68.2	1.4	1.5	No
252	Irvine Center Drive	Odyssey to Laguna Canyon Road	66.8	68.3	1.5	1.5	Yes
253	Irvine Center Drive (Edinger)	Redhill Avenue to Jamboree Road	69.6	70.8	1.2	1.5	No
254	Jamboree Road	I-5 SB Off-Ramp to I-5 NB Off-Ramp	74.3	74.5	0.2	1.5	No
255	Jamboree Road	I-405 SB Off-Ramp to I-405 NB Off Ramp	75.1	75.4	0.3	1.5	No
256	Jamboree Road	Walnut Avenue to Michelle Drive	73.5	73.8	0.3	1.5	No
257	Jamboree Road	I-405 NB Off-Ramp to Main Street	76.5	76.9	0.4	1.5	No
258	Jamboree Road	Michelle Drive to I-5 SB Off-Ramp	73.5	73.6	0.1	1.5	No
259	Jamboree Road	Main Street to Kelvin Avenue	75.7	76.2	0.5	1.5	No
260	Jamboree Road	Michelson Drive to I-405 SB Off-Ramp	73.6	74.2	0.6	1.5	No
261	Jamboree Road	Kelvin Avenue to McGaw Avenue	75.5	75.8	0.3	1.5	No
262	Jamboree Road	McGaw Avenue to Alton Parkway	75.4	75.8	0.4	1.5	No
263	Jamboree Road	Birch Street to Campus Drive	72.1	72.6	0.5	1.5	No
264	Jamboree Road	Dupont Drive to Michelson Drive	73.3	73.5	0.2	1.5	No
265	Jamboree Road	Alton Parkway to Beckman	75.2	75.4	0.2	1.5	No
266	Jamboree Road	Fairchild Road to Birch Street	72.2	73.2	1.0	1.5	No

Table 11

267	Jamboree Road	Beckman to Barranca Parkway	75.0	75.2	0.2	1.5	No
268	Jamboree Road	I-5 NB Off-Ramp to El Camino Real	74.9	75.1	0.2	1.5	No
269	Jamboree Road	Campus Drive to Dupont Drive	72.5	72.7	0.2	1.5	No
270	Jamboree Road	El Camino Real to West Drive	74.9	75.1	0.2	1.5	No
271	Jamboree Road	West Drive to Bryan Avenue	74.9	75.1	0.2	1.5	No
272	Jamboree Road	Bryan Avenue to Irvine Boulevard	74.5	74.8	0.3	1.5	No
273	Jamboree Road	Koll Center to Fairchild Road	71.7	72.5	0.8	1.5	No
274	Jamboree Road	MacArthur Boulevard to Koll Center	71.8	72.5	0.7	1.5	No
275	Jamboree Road	Irvine Boulevard to Portola Pakway	70.0	70.8	0.8	1.5	No
276	Jamboree Road	Warner Avenue to Edinger Avenue	79.0	79.1	0.1	1.5	No
277	Jamboree Road	Barranca Parkway to Warner Avenue	78.1	78.2	0.1	1.5	No
278	Jamboree Road	Edinger Avenue to Walnut Avenue	77.8	77.9	0.1	1.5	No
279	Jeffrey Road	Walnut Avenue to I-5 NB Off-Ramp	70.9	71.3	0.4	1.5	No
280	Jeffrey Road	I-5 NB Off-Ramp to Roosevelt	71.8	72.2	0.4	1.5	No
281	Jeffrey Road	Poplar (Meadows) to Walnut Avenue	70.4	70.8	0.4	1.5	No
282	Jeffrey Road	Alton Parkway to Barranca Parkway	70.3	70.5	0.2	1.5	No
283	Jeffrey Road	Irvine Center Drive to Poplar (Meadows)	70.2	70.6	0.4	1.5	No
284	Jeffrey Road	I-405 NB Off-Ramp to Quail Creek	70.4	70.5	0.1	1.5	No
285	Jeffrey Road	Barranca Parkway to Irvine Valley College	70.3	70.4	0.1	1.5	No
286	Jeffrey Road	Quail Creek to Alton Parkway	70.4	70.5	0.1	1.5	No
287	Jeffrey Road	Irvine Valley College to Irvine Center Drive	70.1	70.3	0.2	1.5	No
288	Jeffrey Road	Trabuco Road to Hideaway	69.4	69.7	0.3	1.5	No
289	Jeffrey Road	Hideaway to Bryan Avenue	69.4	69.7	0.3	1.5	No
290	Jeffrey Road	Roosevelt to Grove	70.0	70.4	0.4	1.5	No
291	Jeffrey Road	Grove to Trabuco Road	70.0	70.3	0.3	1.5	No
292	Jeffrey Road	Bryan Avenue to Irvine Boulevard	68.1	68.5	0.4	1.5	No
293	Jeffrey Road	Encore to Portola Parkway	64.0	66.1	2.1	3.0	No
294	Jeffrey Road	Irvine Boulevard to Encore	64.0	65.6	1.6	3.0	No
295	Jeronimo Road	Goodyear to Bake Parkway	64.4	64.8	0.4	3.0	No
296	Jeronimo Road	Alton Parkway to Goodyear	64.1	64.7	0.6	3.0	No
297	Laguna Canyon Road	Old Laguna Canyon Road to Lake Forest Drive	72.6	73.3	0.7	1.5	No
298	Laguna Canyon Road	Laguna Canyon Freeway to Quail Hill Parkway	67.7	70.0	2.3	1.5	Yes
299	Laguna Canyon Road	Discovery to Sand Canyon Avenue	64.8	68.1	3.3	3.0	Yes
300	Laguna Canyon Road	I-405 Overcrossing to Pasteur	66.0	68.0	2.0	1.5	Yes

Table 11

301	Laguna Canyon Road	Irvine Center Drive to Discovery	63.6	67.3	3.7	3.0	Yes
302	Laguna Canyon Road	Quail Hill Parkway to I-405 Overcrossing	66.0	68.0	2.0	1.5	Yes
303	Laguna Canyon Road	Pasteur to Alton Parkway	65.5	66.9	1.4	1.5	No
304	Laguna Canyon Road	Waterworks to Irvine Center Drive	64.5	66.2	1.7	3.0	No
305	Laguna Canyon Road	Alton Parkway to Barranca Parkway	64.8	66.0	1.2	3.0	No
306	Laguna Canyon Road	Barranca Parkway to Waterworks	63.9	65.6	1.7	3.0	No
307	Lake Forest Drive	Hidden Canyon to Laguna Canyon Road	68.3	69.2	0.9	1.5	No
308	Lake Forest Drive	Bake Parkway to Hidden Canyon (Romano)	68.3	69.2	0.9	1.5	No
309	Lake Forest Drive	Tesla to Bake Parkway	65.3	66.2	0.9	1.5	No
310	Lake Road	Alton Parkway to Barranca Parkway	59.0	59.2	0.2	5.0	No
311	Lynx	Irvine Boulevard to Astor	0.0	53.5	53.5	5.0	Yes
312	MacArthur Boulevard	I-405 SB Off-Ramp to Michelson Drive	76.0	76.4	0.4	1.5	No
313	MacArthur Boulevard	Main Street to I-405 NB Off-Ramp	75.8	76.5	0.7	1.5	No
314	MacArthur Boulevard	I-405 NB Off-Ramp and I-405 SB Off-Ramp	75.7	76.4	0.7	1.5	No
315	MacArthur Boulevard	Jamboree Road to Fairchild Road	69.7	69.9	0.2	1.5	No
316	MacArthur Boulevard	Fairchild Road to University Drive	69.7	69.8	0.1	1.5	No
317	MacArthur Boulevard	Fitch to Red Hill Avenue	70.4	70.5	0.1	1.5	No
318	MacArthur Boulevard	Michelson Drive to Douglas	71.3	71.8	0.5	1.5	No
319	MacArthur Boulevard	Douglas to Campus Drive	71.3	71.9	0.6	1.5	No
320	MacArthur Boulevard	Skypark to Main Street	69.0	69.6	0.6	1.5	No
321	MacArthur Boulevard	Redhill Avenue to Skypark	68.0	68.5	0.5	1.5	No
322	MacArthur Boulevard	Birch Street to Jamboree Road	66.5	66.8	0.3	1.5	No
323	MacArthur Boulevard	Campus Drive to Birch Street	68.5	69.1	0.6	1.5	No
324	Main Street	Gillette Avenue to Von Karman Avenue	69.4	70.2	0.8	1.5	No
325	Main Street	MacArthur Boulevard to Mercantile	69.4	69.9	0.5	1.5	No
326	Main Street	Executive Park to MacArthur Boulevard	67.7	68.2	0.5	1.5	No
327	Main Street	Von Karman Avenue to Cartwright	67.2	67.8	0.6	1.5	No
328	Main Street	McDermott to Red Hill Avenue	67.9	68.0	0.1	1.5	No
329	Main Street	Red Hill Avenue to Executive Circle	67.7	67.9	0.2	1.5	No
330	Main Street	Jamboree Road to Union	67.4	67.7	0.3	1.5	No
331	Main Street	Culver Drive to West Yale Loop	67.0	67.2	0.2	1.5	No
332	Main Street	Siglo to Jamboree Road	67.2	67.4	0.2	1.5	No
333	Main Street	Veneto to Harvard Avenue	67.4	67.6	0.2	1.5	No
334	Main Street	Paseo Westpark to Culver Drive	66.2	66.4	0.2	1.5	No

Table 11

335	Main Street	Harvard Avenue to San Mateo	66.2	66.3	0.1	1.5	No
336	Marine Way	Sand Canyon Avenue to Ridge Valley (O Street)	67.8	72.1	4.3	1.5	Yes
337	Marine Way	Alton Parkway to Bake Parkway	0.0	69.0	69.0	5.0	Yes
338	Marine Way	Lynx to Barranca Parkway	0.0	69.4	69.4	5.0	Yes
339	Marine Way	County Access to Treble	59.3	65.3	6.0	5.0	Yes
340	Marine Way	Ridge Valley (O Street) to Skyhawk	62.0	67.6	5.6	3.0	Yes
341	Marine Way	Skyhawk to County Access	59.3	64.9	5.6	5.0	Yes
342	Marine Way	Barranca Parkway to Alton Parkway	52.7	66.3	13.6	5.0	Yes
343	Marine Way	Treble to Lynx	0.0	67.1	67.1	5.0	Yes
344	McGaw Avenue	Von Karman Avenue to Jamboree Road	62.2	63.6	1.4	3.0	No
345	McGaw Avenue	Red Hill Avenue to Von Karman Avenue	62.1	63.6	1.5	3.0	No
346	McGaw Avenue	Daimler to Red Hill Avenue	61.0	62.4	1.4	3.0	No
347	McGaw Avenue	Jamboree Road to Murphy Avenue	57.6	59.2	1.6	5.0	No
348	Meadowood	Culver Drive to Canyonwood	59.5	59.8	0.3	5.0	No
349	Meridian	Spectrum to Alton Parkway	54.7	54.9	0.2	5.0	No
350	Meridian	Alton Parkway to Gateway Boulevard	53.5	54.1	0.6	5.0	No
351	Merit	Irvine Boulevard to Cadence	59.3	57.3	-2.0	5.0	No
352	Michelson Drive	Riparian to Harvard Avenue	66.7	67.8	1.1	1.5	No
353	Michelson Drive	Almond Tree Lane to Yale Avenue	66.3	66.7	0.4	1.5	No
354	Michelson Drive	Von Karman Avenue to Obsidian	66.7	67.8	1.1	1.5	No
355	Michelson Drive	Parkside to Culver Drive	66.2	66.8	0.6	1.5	No
356	Michelson Drive	Gillman to Seton/Sandburg Way	66.3	66.5	0.2	1.5	No
357	Michelson Drive	Carlson to Prince	65.4	67.0	1.6	1.5	Yes
358	Michelson Drive	MacArthur Boulevard to Dupont Drive	66.7	67.0	0.3	1.5	No
359	Michelson Drive	Harvard Avenue to Parkside	66.2	66.8	0.6	1.5	No
360	Michelson Drive	Bixby to Von Karman Avenue	64.9	66.3	1.4	3.0	No
361	Michelson Drive	Jamboree Road to Carlson	68.0	69.5	1.5	1.5	Yes
362	Michelson Drive	Teller to Jamboree Road	68.7	69.5	0.8	1.5	No
363	Michelson Drive	Jordan East to University Drive	66.6	66.8	0.2	1.5	No
364	Michelson Drive	Culver Drive to Angell	65.9	66.1	0.2	1.5	No
365	Modjeska (A Street)	Portola Springs to Irvine Boulevard	70.7	71.7	1.0	1.5	No
366	Modjeska (A Street)	South of Irvine Boulevard	61.4	60.6	-0.8	3.0	No
367	Muirlands Boulevard	Bake Parkway to City Limits	66.4	67.2	0.8	1.5	No
368	Muirlands Boulevard	Alton Parkway to Sterling	66.1	66.3	0.2	1.5	No

Table 11

369	Muirlands Boulevard	Wrigley to Bake Parkway	66.1	66.2	0.1	1.5	No
370	Newport Coast Drive	SR-73 NB Off-Ramp to Turtle Ridge	65.9	66.7	0.8	1.5	No
371	Newport Coast Drive	Turtle Crest to Bonita Canyon Drive	65.0	65.2	0.2	1.5	No
372	Nightmist	Sand Canyon Avenue to Tulip (Road C)	60.8	62.1	1.3	3.0	No
373	Northwood	Yale Avenue to Savannah	62.3	62.4	0.1	3.0	No
374	Northwood	Goldrush to Yale Avenue	60.5	61.3	0.8	3.0	No
375	Oak Canyon Drive	Valley Oak Drive to Sand Canyon Avenue	66.2	67.4	1.2	1.5	No
376	Pacifica	Gateway to Barranca Parkway	63.3	64.6	1.3	3.0	No
377	Pacifica	Alton Parkway to Gateway	61.8	63.2	1.4	3.0	No
378	Pacifica	Irvine Center Drive to Fortune Drive (Spectrum Center Drive)	61.7	63.2	1.5	3.0	No
379	Pacifica	Meridian to Alton Parkway	58.1	60.0	1.9	5.0	No
380	Park Place	Christamon South to Yale Avenue	56.8	57.0	0.2	5.0	No
381	Portola Parkway	Bee Canyon Access Road to Sand Canyon Avenue	70.3	71.3	1.0	1.5	No
382	Portola Parkway	Jeffrey Road to Bee Canyon Access Road	70.3	71.3	1.0	1.5	No
383	Portola Parkway	Arrowhead to Ridge Valley Parkway	69.6	71.3	1.7	1.5	Yes
384	Portola Parkway	Sand Canyon Avenue to Arrowhead	69.6	70.9	1.3	1.5	No
385	Portola Parkway	Portola Springs to SR-241 SB Off-Ramp	65.5	70.0	4.5	1.5	Yes
386	Portola Parkway	Gatepark to Culver Drive	69.6	70.3	0.7	1.5	No
387	Portola Parkway	ETC-6 (SR-261) NB Off-Ramp to Gatepark	69.6	70.2	0.6	1.5	No
388	Portola Parkway	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	69.6	70.1	0.5	1.5	No
389	Portola Parkway	Jamboree Road to Bellevue	69.6	70.1	0.5	1.5	No
390	Portola Parkway	Bellevue to ETC-6 (SR-261) SB Off-Ramp	69.6	70.0	0.4	1.5	No
391	Portola Parkway	Yale Avenue to Jeffrey Road	68.6	69.8	1.2	1.5	No
392	Portola Parkway	Culver Drive to Yale Avenue	68.6	69.4	0.8	1.5	No
393	Portola Parkway	Silverado to Portola Springs	66.5	68.5	2.0	1.5	Yes
394	Pusan	Irvine Boulevard to Cadence	54.0	56.1	2.1	5.0	No
395	Quail Hill Parkway	Shady Canyon Drive to Passage	67.3	67.6	0.3	1.5	No
396	Quail Hill Parkway	East Knollcrest to Laguna Canyon Road	64.8	65.6	0.8	3.0	No
397	Quassar Drive (Spectrum)	Irvine Center Drive to Spectrum Center Drive (Fortune)	54.4	54.9	0.5	5.0	No
398	Red Hill Avenue	MacArthur Boulevard to McGaw Avenue	70.8	71.3	0.5	1.5	No
399	Red Hill Avenue	I-405 Over Crossing to Main Street	69.6	69.9	0.3	1.5	No
400	Red Hill Avenue	Alton Parkway to Deere Avenue	69.5	69.9	0.4	1.5	No
401	Red Hill Avenue	McGaw Avenue to Alton Parkway	69.3	69.7	0.4	1.5	No
402	Red Hill Avenue	Deere Avenue to Barranca Parkway	69.3	69.7	0.4	1.5	No

Table 11

403	Red Hill Avenue	Skypark East to MacArthur Boulevard	70.2	71.0	0.8	1.5	No
404	Red Hill Avenue	Main Street to Skypark East	69.6	70.4	0.8	1.5	No
405	Research Drive	Hubble to Bake Parkway	65.4	69.5	4.1	1.5	Yes
406	Research Drive	Scientific to Lake Forest Drive	65.6	67.6	2.0	1.5	Yes
407	Research Drive	Bake Parkway to Muller	66.2	66.5	0.3	1.5	No
408	Research Drive	Irvine Center Drive to Bunsen	64.9	65.5	0.6	3.0	No
409	Ridge Valley (O Street)	Irvine Boulevard to Trabuco Road (Great Park Boulevard)	65.5	67.4	1.9	1.5	Yes
410	Ridge Valley (O Street)	Portola Parkway to Irvine Boulevard	65.9	66.5	0.6	1.5	No
411	Ridge Valley (O Street)	Trabuco Road (Great Park Boulevard) to Marine Way	65.8	66.0	0.2	1.5	No
412	Ridge Valley (O Street)	Ranchland to Portola Parkway	58.0	58.1	0.1	5.0	No
413	Ridgeline Drive	Concordia East to University Drive	67.7	68.6	0.9	1.5	No
414	Ridgeline Drive	Turtle Rock Drive to San Simeon	67.7	68.2	0.5	1.5	No
415	Rockfield Avenue	Whatney to McLaren	66.3	67.5	1.2	1.5	No
416	Rockfield Avenue	Bake Parkway to Whatney	62.5	63.8	1.3	3.0	No
417	Rockfield Avenue	Thomas to Bake Parkway	62.5	62.6	0.1	3.0	No
418	Roosevelt	Jeffrey Road to Vision	65.2	66.1	0.9	1.5	No
419	Roosevelt	Yale Avenue to Van Buren	67.9	68.1	0.2	1.5	No
420	Roosevelt	Vision to Bay Tree	64.5	65.9	1.4	3.0	No
421	Roosevelt	Nimitz to Jeffrey Road	65.2	65.8	0.6	1.5	No
422	Roosevelt	Tulip (Road C) to Sand Canyon Avenue	63.7	65.6	1.9	3.0	No
423	Royal Oak	Alton Parkway to Eaglecreek	63.8	64.0	0.2	3.0	No
424	Sand Canyon Avenue	Oak Canyon Drive to Burt Road	70.7	71.9	1.2	1.5	No
425	Sand Canyon Avenue	Irvine Center Drive to Oak Canyon Drive	70.6	71.6	1.0	1.5	No
426	Sand Canyon Avenue	I-405 NB Off-Ramp to Alton Parkway	73.6	74.4	0.8	1.5	No
427	Sand Canyon Avenue	Burt Road to I-5 SB Off-Ramp	71.2	72.6	1.4	1.5	No
428	Sand Canyon Avenue	Marine to I-5 NB Off-Ramp	72.7	74.6	1.9	1.5	Yes
429	Sand Canyon Avenue	Trabuco Road to Towngate	70.0	71.3	1.3	1.5	No
430	Sand Canyon Avenue	Barranca Parkway to Waterworks	69.2	70.6	1.4	1.5	No
431	Sand Canyon Avenue	I-5 SB Off-Ramp to Marine	72.7	73.8	1.1	1.5	No
432	Sand Canyon Avenue	Hospital to Barranca Parkway	69.3	70.4	1.1	1.5	No
433	Sand Canyon Avenue	Nightmist to Roosevelt	73.3	73.4	0.1	1.5	No
434	Sand Canyon Avenue	I-405 SB Off-Ramp to I-405 NB Off-Ramp	72.4	73.4	1.0	1.5	No
435	Sand Canyon Avenue	I-5 NB Off-Ramp to Nightmist	73.2	73.5	0.3	1.5	No
436	Sand Canyon Avenue	Towngate to Irvine Boulevard	69.3	70.6	1.3	1.5	No

Table 11

437	Sand Canyon Avenue	Waterworks to Irvine Center Drive	69.2	70.0	0.8	1.5	No
438	Sand Canyon Avenue	Irvine Boulevard to Portola Parkway	68.0	69.3	1.3	1.5	No
439	Sand Canyon Avenue	Roosevelt to Trabuco Road	72.6	72.8	0.2	1.5	No
440	Sand Canyon Avenue	Alton Parkway to Hospital	69.7	70.5	0.8	1.5	No
441	Sand Canyon/Shady Canyon	Quail Hill Parkway to I-405 SB Ramps	71.3	71.6	0.3	1.5	No
442	Scientific Way	Irvine Center Drive to Wald	54.6	54.9	0.3	5.0	No
443	Shady Canyon Drive	Culver Drive/Bonita Canyon Drive to Cloverfield	68.6	68.8	0.2	1.5	No
444	Shady Canyon Drive	Bommer Canyon Road to Sunnyhill	67.1	67.3	0.2	1.5	No
445	Skyhawk	Great Park Boulevard to Marine Way	52.8	60.2	7.4	5.0	Yes
446	Southwood	Yale Avenue to Colt	60.5	60.5	0.0	3.0	No
447	Southwood	Challenger to Yale Avenue	59.9	60.3	0.4	5.0	No
448	Spectrum Center Drive (Fortune Drive)	Pacifica to Quassar Drive (Spectrum )	61.4	61.9	0.5	3.0	No
449	Spectrum Center Drive (Fortune Drive)	Quassar Drive (Spectrum ) to Gatewayb	62.0	62.4	0.4	3.0	No
450	Sunnyhill	Shady Canyon Drive to Turtle Rock Drive	56.9	57.0	0.1	5.0	No
451	Technology Drive	Barranca Parkway to Alton Parkway	67.0	69.9	2.9	1.5	Yes
452	Technology Drive	Old Laguna Canyon Road to I-5/SR-133 Undercrossing	63.2	67.1	3.9	3.0	Yes
453	Technology Drive	I-5/SR-133 to Barranca Parkway	62.8	66.1	3.3	3.0	Yes
454	Technology Drive	Ada to Alton Parkway	57.8	59.9	2.1	5.0	No
455	Toledo Way	Bake Parkway to City Limits	65.5	65.8	0.3	1.5	No
456	Toledo Way	Goodyear to Bake Parkway	64.5	64.9	0.4	3.0	No
457	Toledo Way	Alton Parkway to Parker	63.9	64.5	0.6	3.0	No
458	Trabuco Road	Keystone to Sand Canyon Avenue	66.7	67.0	0.3	1.5	No
459	Trabuco Road	Jeffrey Road to Keystone	66.7	66.9	0.2	1.5	No
460	Trabuco Road	Culver Drive to I-5 NB Off-Ramp	66.3	66.6	0.3	1.5	No
461	Trabuco Road	Monroe to Yale Avenue	66.3	66.5	0.2	1.5	No
462	Trabuco Road	I-5 NB Off-Ramp to Monroe	66.3	66.5	0.2	1.5	No
463	Trabuco Road	Yale Avenue to Remington	65.7	66.0	0.3	1.5	No
464	Trabuco Road	Remington to Jeffrey Road	65.7	66.0	0.3	1.5	No
465	Turtle Ridge Drive	Federation Way to Bonita Canyon	0.0	68.8	68.8	5.0	Yes
466	Turtle Rock Drive	Ridgeline to Willowleaf	66.9	67.5	0.6	1.5	No
467	Turtle Rock Drive	Silkwood to Sunnyhill	67.0	67.4	0.4	1.5	No
468	Turtle Rock Drive	Canyon Park to Ridgeline	66.7	66.8	0.1	1.5	No
469	Turtle Rock Drive	Sunnyhill to Southernwood	63.9	64.0	0.1	3.0	No
470	Turtle Rock Drive	Campus Drive to Hillgate	63.8	64.0	0.2	3.0	No



Table 11

471	Turtle Rock Drive	Paseo Segovia to Campus Drive	65.3	65.4	0.1	1.5	No
472	University Drive	Golden Glow to Yale Avenue	72.2	72.6	0.4	1.5	No
473	University Drive	Ridgeline to Michelson Drive	72.1	72.3	0.2	1.5	No
474	University Drive	Culver Drive to Golden Glow	72.1	72.5	0.4	1.5	No
475	University Drive	Yale Avenue to Ridgeline	72.0	72.2	0.2	1.5	No
476	University Drive	Michelson Drive to I-405 SB Off-Ramp	72.3	72.4	0.1	1.5	No
477	University Drive	Mesa to Campus Drive	73.3	74.2	0.9	1.5	No
478	University Drive	MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	73.3	74.2	0.9	1.5	No
479	University Drive	California Avenue to Mesa	73.3	74.1	0.8	1.5	No
480	University Drive	Campus Drive to Harvard Avenue	69.5	70.3	0.8	1.5	No
481	University Drive	SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	70.4	71.3	0.9	1.5	No
482	University Drive	SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps	69.2	70.0	0.8	1.5	No
483	University Drive	San Joaquin to Culver Drive	68.7	69.4	0.7	1.5	No
484	University Drive	Harvard Avenue to San Joaquin	68.7	69.4	0.7	1.5	No
485	Valley Oak Drive	Hawkcreek to Barranca Parkway	63.0	68.0	5.0	3.0	Yes
486	Valley Oak Drive	Irvine Center Drive to Oak Canyon Drive	65.2	67.6	2.4	1.5	Yes
487	Valley Oak Drive	Barranca Parkway to Irvine Center Drive	62.9	65.7	2.8	3.0	No
488	Valley Oak Drive	Alton Parkway to Hawkcreek	63.8	65.0	1.2	3.0	No
489	Von Karman Avenue	Marriott to Morse Avenue	68.9	70.6	1.7	1.5	Yes
490	Von Karman Avenue	Michelson Drive to Quartz	68.8	70.4	1.6	1.5	Yes
491	Von Karman Avenue	McGaw Avenue to Alton Parkway	69.3	70.1	0.8	1.5	No
492	Von Karman Avenue	Alton Parkway to Barranca Parkway	68.4	69.7	1.3	1.5	No
493	Von Karman Avenue	Main Street to Anchor	69.2	69.9	0.7	1.5	No
494	Von Karman Avenue	Anchor to McGaw Avenue	69.2	69.9	0.7	1.5	No
495	Von Karman Avenue	Morse to Main Street	69.2	69.9	0.7	1.5	No
496	Von Karman Avenue	Martin to Dupont Drive	67.8	69.2	1.4	1.5	No
497	Von Karman Avenue	Campus Drive to Martin	67.8	69.2	1.4	1.5	No
498	Von Karman Avenue	Dupont Drive to Michelson Drive	67.8	69.2	1.4	1.5	No
499	Walnut Avenue	Jeffrey Road to I-5 SB Off-Ramp	68.9	70.5	1.6	1.5	Yes
500	Walnut Avenue	Myford Road to Jamboree Road SB Off-Ramp	68.6	68.9	0.3	1.5	No
501	Walnut Avenue	The Mall Street to Culver Drive	68.2	68.5	0.3	1.5	No
502	Walnut Avenue	Harvard Avenue to The Mall Street	68.2	68.4	0.2	1.5	No
503	Walnut Avenue	Franciscan Street to Ravenwood Street	68.0	68.1	0.1	1.5	No
504	Walnut Avenue	Ravenwood Street to Yale Avenue	68.0	68.1	0.1	1.5	No

Table 11

505	Walnut Avenue	Culver Drive to Franciscan Street	68.0	68.1	0.1	1.5	No
506	Walnut Avenue	Peters Canyon Road to Harvard Avenue	67.0	67.6	0.6	1.5	No
507	Walnut Avenue	Jamboree Road NB Off-Ramp to Peters Canyon Road	67.0	67.5	0.5	1.5	No
508	Walnut Avenue	Yale Avenue to Kazan Street	66.3	67.0	0.7	1.5	No
509	Walnut Avenue	Wisteria to Jeffrey Road	66.3	67.0	0.7	1.5	No
510	Warner Avenue	Jamboree Road SB Off-ramp to Construction North	69.6	70.1	0.5	1.5	No
511	Warner Avenue	Construction North to Harvard Avenue	67.8	68.4	0.6	1.5	No
512	Warner Avenue	Harvard Avenue to Paseo Westpark	66.1	66.8	0.7	1.5	No
513	Warner Avenue	Santa Ynez to Culver Drive	65.1	65.6	0.5	1.5	No
514	Warner Avenue	Culver Drive to West Yale Loop	64.9	65.1	0.2	3.0	No
515	West Yale Loop	Alton Parkway to Blue Lake North	63.3	64.0	0.7	3.0	No
516	West Yale Loop	Eagle Run to Main Street	63.3	63.8	0.5	3.0	No
517	West Yale Loop	Thunder Run to Yale Avenue	62.7	63.6	0.9	3.0	No
518	West Yale Loop	Main Street to Timber Run	62.7	62.9	0.2	3.0	No
519	West Yale Loop	Yale Avenue to Shorebird	61.8	62.1	0.3	3.0	No
520	West Yale Loop	Warner Avenue to Stonecreek South	61.8	62.4	0.6	3.0	No
521	West Yale Loop	Barranca Parkway to Alton Parkway	61.7	62.4	0.7	3.0	No
522	West Yale Loop	Stonecreek North to Warner Avenue	61.8	62.0	0.2	3.0	No
523	West Yale Loop	Birdsong to Barranca Parkway	61.8	62.2	0.4	3.0	No
524	Westwood	Yorktown to Bryan Avenue	63.2	63.6	0.4	3.0	No
525	Westwood	Bryan Avenue to Leaf	61.3	61.6	0.3	3.0	No
526	Yale Avenue	Deerfield Avenue to Winvale Avenue	68.5	68.6	0.1	1.5	No
527	Yale Avenue	Hicks Canyon Drive to Meadowood	67.2	67.4	0.2	1.5	No
528	Yale Avenue	Walnut Avenue to Roosevelt	70.7	70.9	0.2	1.5	No
529	Yale Avenue	Roosevelt to Trabuco Road	66.9	67.1	0.2	1.5	No
530	Yale Avenue	Irvine Center Drive to Deerfield Avenue	66.5	67.0	0.5	1.5	No
531	Yale Avenue	West Yale Loop to Irvine Center Drive	65.0	65.8	0.8	1.5	No
532	Yale Avenue	Winvale Avenue to Karen Ann Lane	65.6	65.7	0.1	1.5	No
533	Yale Avenue	Karen Ann Lane to Walnut Avenue	65.6	65.7	0.1	1.5	No
534	Yale Avenue	Trabuco Road to Southwood	65.1	65.6	0.5	1.5	No
535	Yale Avenue	Southwood to Bryan Avenue	65.1	65.6	0.5	1.5	No
536	Yale Avenue	Northwood to Irvine Boulevard	64.8	65.3	0.5	3.0	No
537	Yale Avenue	Bryan Avenue to Monticello	64.8	65.2	0.4	3.0	No
538	Yale Avenue	Irvine Boulevard to Park Place	64.1	64.3	0.2	3.0	No

Table 11

539	Yale Avenue	University Drive to Royce	57.9	63.0	5.1	5.0	Yes
540	Yale Court	Arborwood to Portola Parkway	60.0	60.3	0.3	1.5	No

<sup>1</sup> Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use.

<sup>3</sup> Does the Project create an incremental noise level increase exceeding the significance criteria?

Table 12

Table 12: Existing and Conservative Plan Traffic Noise Level Increases

ID	Road	Segment	CNEL at Receiving Land Use (dBA) <sup>2</sup>			Incremental Noise Level Increase Threshold <sup>3</sup>	
			Existing	Conservative	Project Addition	Limit	Exceeded?
1	Ada	Barranca Parkway to Marine Way	0.0	70.8	70.8	5.0	Yes
2	Ada	Alton Parkway to Barranca Parkway	60.3	69.3	9.0	3.0	Yes
3	Alton Parkway	Enterprise to I-5 NB Off-Ramp	71.3	74.1	2.8	1.5	Yes
4	Alton Parkway	I-5 NB Off-Ramp to Technology Drive West	72.1	74.8	2.7	1.5	Yes
5	Alton Parkway	East Yale Loop to Jeffrey Road	71.3	71.8	0.5	1.5	No
6	Alton Parkway	Gateway Boulevard to Enterprise	69.3	72.0	2.7	1.5	Yes
7	Alton Parkway	Jeffrey Road to Royal Oak	70.1	70.9	0.8	1.5	No
8	Alton Parkway	Daimler Street to Red Hill Avenue	63.7	70.7	7.0	3.0	Yes
9	Alton Parkway	Culver Drive to West Yale Loop	70.4	70.7	0.3	1.5	No
10	Alton Parkway	West Yale Loop to Lake Road	70.3	70.7	0.4	1.5	No
11	Alton Parkway	Technology Drive West to Ada	70.2	72.6	2.4	1.5	Yes
12	Alton Parkway	Creek Road to East Yale Loop	70.1	70.6	0.5	1.5	No
13	Alton Parkway	Red Hill Avenue to Von Karman Avenue	68.1	70.5	2.4	1.5	Yes
14	Alton Parkway	Lake Road to Creek Road	70.1	70.4	0.3	1.5	No
15	Alton Parkway	Telemetry to Banting	69.0	70.4	1.4	1.5	No
16	Alton Parkway	Irvine Boulevard to Commercentre	70.3	70.8	0.5	1.5	No
17	Alton Parkway	Jenner to Telemetry	69.0	70.4	1.4	1.5	No
18	Alton Parkway	Irvine Center Drive to Gateway Boulevard	68.6	71.2	2.6	1.5	Yes
19	Alton Parkway	Sand Canyon Avenue to Hospital	72.1	73.7	1.6	1.5	Yes
20	Alton Parkway	Laguna Canyon Road to Jenner	69.0	70.3	1.3	1.5	No
21	Alton Parkway	Technology Drive East to Barranca Pkwy/Muirlands Blvd	69.1	71.2	2.1	1.5	Yes
22	Alton Parkway	Royal Oak to Valley Oak Drive	69.4	70.1	0.7	1.5	No
23	Alton Parkway	Banting to Pacifica	68.4	70.0	1.6	1.5	Yes
24	Alton Parkway	Barranca Pkwy/Muirlands Blvd to Jeronimo Road	70.1	70.9	0.8	1.5	No
25	Alton Parkway	Ada to Technology Drive East	69.2	70.7	1.5	1.5	Yes
26	Alton Parkway	Von Karman Avenue to Jamboree Road	68.7	69.7	1.0	1.5	No
27	Alton Parkway	Jeronimo Road to Hughes	69.8	69.9	0.1	1.5	No
28	Alton Parkway	Hughes to Morgan	69.5	69.8	0.3	1.5	No
29	Alton Parkway	Morgan to Toledo Way	68.8	69.1	0.3	1.5	No

Table 12

30	Alton Parkway	San Marino to Culver Drive	68.8	69.2	0.4	1.5	No
31	Alton Parkway	Jamboree Road to Murphy Avenue	68.0	69.0	1.0	1.5	No
32	Alton Parkway	Hospital to Laguna Canyon Road	70.7	72.0	1.3	1.5	No
33	Alton Parkway	Valley Oak Drive to Sand Canyon Avenue	71.1	71.8	0.7	1.5	No
34	Alton Parkway	Murphy Avenue to Harvard Avenue	68.1	68.8	0.7	1.5	No
35	Alton Parkway	Foster to Irvine Boulevard	68.0	68.7	0.7	1.5	No
36	Alton Parkway	Fairbanks to Foster	67.5	68.5	1.0	1.5	No
37	Alton Parkway	Toledo Way to Bertea	68.2	68.4	0.2	1.5	No
38	Alton Parkway	Pacifica to Meridian	69.7	71.7	2.0	1.5	Yes
39	Alton Parkway	Bertea to Fairbanks	68.1	68.3	0.2	1.5	No
40	Alton Parkway	Meridian to Irvine Center Drive	66.6	68.3	1.7	1.5	Yes
41	Alton Parkway	Paseo Westpark to San Marino	67.9	68.3	0.4	1.5	No
42	Alton Parkway	Harvard Avenue to Paseo Westpark	66.9	67.7	0.8	1.5	No
43	Astor	Lynx to Fairbanks	57.5	67.1	9.6	5.0	Yes
44	Astor	Cadence to Lynx	0.0	65.9	65.9	5.0	Yes
45	Bake Parkway	I-5 NB Off-Ramp to Rockfield Boulevard	75.4	76.7	1.3	1.5	No
46	Bake Parkway	Muirlands Boulevard to Jeronimo Road	72.7	73.0	0.3	1.5	No
47	Bake Parkway	Rockfield Boulevard to Muirlands Boulevard	74.7	75.1	0.4	1.5	No
48	Bake Parkway	Jeronimo Road to Toledo Way	71.9	72.1	0.2	1.5	No
49	Bake Parkway	Toledo Way to Cromwell	71.5	71.7	0.2	1.5	No
50	Bake Parkway	Cromwell to Irvine Boulevard	71.4	71.6	0.2	1.5	No
51	Bake Parkway	Research Drive to I-5 SB Off-Ramp	68.5	69.6	1.1	1.5	No
52	Bake Parkway	Irvine Center Drive to Research Drive	64.1	64.9	0.8	3.0	No
53	Bake Parkway	Lake Forest Drive to Irvine Center Drive	61.9	63.4	1.5	3.0	No
54	Banting	Alton Parkway to Barranca Parkway	57.6	60.3	2.7	5.0	No
55	Barranca Parkway	Pacifica to Irvine Center Drive	70.5	73.3	2.8	1.5	Yes
56	Barranca Parkway	Banting to Pacifica	70.7	72.8	2.1	1.5	Yes
57	Barranca Parkway	I-5 HOV Ramp to Technology Drive West	69.8	73.0	3.2	1.5	Yes
58	Barranca Parkway	Technology Drive West to Ada	70.4	72.7	2.3	1.5	Yes
59	Barranca Parkway	Irvine Center Drive to I-5 HOV Ramp	69.3	72.6	3.3	1.5	Yes
60	Barranca Parkway	Culver Drive to West Yale Loop	71.9	72.3	0.4	1.5	No
61	Barranca Parkway	East Yale Loop to Jeffrey Road	71.7	72.2	0.5	1.5	No
62	Barranca Parkway	West Yale Loop to Lake Road	71.6	72.1	0.5	1.5	No
63	Barranca Parkway	Ada to Alton Parkway	70.2	72.1	1.9	1.5	Yes
64	Barranca Parkway	Lake Road to Creek Road	71.2	71.8	0.6	1.5	No

Table 12

65	Barranca Parkway	Red Hill Avenue to Armstrong Avenue	73.3	74.7	1.4	1.5	No
66	Barranca Parkway	Discovery/Herchel to Banting	69.7	71.6	1.9	1.5	Yes
67	Barranca Parkway	Lyon to East Yale Loop	71.0	71.6	0.6	1.5	No
68	Barranca Parkway	Creek Road to Lyon	70.9	71.5	0.6	1.5	No
69	Barranca Parkway	Von Karman Avenue to Jamboree Road	71.5	72.8	1.3	1.5	No
70	Barranca Parkway	Sand Canyon Avenue to Laguna Canyon Road	68.5	71.1	2.6	1.5	Yes
71	Barranca Parkway	Armstrong Avenue to Von Karman Avenue	72.0	72.5	0.5	1.5	No
72	Barranca Parkway	Valley Oak Drive to Sand Canyon Avenue	69.1	70.8	1.7	1.5	Yes
73	Barranca Parkway	Jamboree Road to Construction Circle	70.1	71.2	1.1	1.5	No
74	Barranca Parkway	Santa Rosa to Culver Drive	69.8	71.0	1.2	1.5	No
75	Barranca Parkway	FedEx to Discovery/Herchel	68.8	70.5	1.7	1.5	Yes
76	Barranca Parkway	Jeffrey Road to Valley Oak Drive	68.3	70.4	2.1	1.5	Yes
77	Barranca Parkway	Laguna Canyon Road to FedEx	68.8	70.4	1.6	1.5	Yes
78	Barranca Parkway	Pullman Street to Red Hill Avenue	72.7	73.7	1.0	1.5	No
79	Barranca Parkway	Construction Circle to Fire Station	69.4	70.6	1.2	1.5	No
80	Barranca Parkway	Fire Station to Harvard Avenue	69.4	70.6	1.2	1.5	No
81	Barranca Parkway	Paseo Westpark to Santa Rosa	69.3	70.6	1.3	1.5	No
82	Barranca Parkway	Harvard Avenue to Paseo Westpark	69.2	70.2	1.0	1.5	No
83	Bay Tree	Trabuco Road to Roosevelt	56.1	57.1	1.0	5.0	No
84	Beacon	Ridge Valley to Benchmark	0.0	59.7	59.7	5.0	Yes
85	Benchmark (LN Street)	Ridge Valley (O Street) to Bosque	0.0	56.5	56.5	5.0	Yes
86	Bison Avenue	SR-73 NB Off-Ramp to California Avenue	68.6	69.6	1.0	1.5	No
87	Bonita Canyon Drive	MacArthur Boulevard to SR-73	70.0	70.3	0.3	1.5	No
88	Bonita Canyon Drive	Turtle Ridge to Shady Canyon Drive	67.5	68.6	1.1	1.5	No
89	Bonita Canyon Drive	Newport Coast Drive to Turtle Ridge	67.5	68.2	0.7	1.5	No
90	Bonita Canyon Drive	SR-73 NB Off-Ramp to Newport Coast Drive	67.5	68.0	0.5	1.5	No
91	Bosque	Cadence to Great Park Boulevard	63.0	65.2	2.2	3.0	No
92	Bosque	Irvine Boulevard to Benchmark (LN Street)	59.7	63.6	3.9	5.0	No
93	Bosque	Benchmark to Cadence	59.7	63.2	3.5	5.0	No
94	Bosque	Great Park Boulevard to Beacon	0.0	56.8	56.8	5.0	Yes
95	Bosque	Beacon to S 5th Street	0.0	56.2	56.2	5.0	Yes
96	Bryan Avenue	Jamboree Road to Market Place	68.7	69.0	0.3	1.5	No
97	Bryan Avenue	Market Place to El Camino Real	68.7	68.9	0.2	1.5	No
98	Bryan Avenue	Rubicon to Culver Drive	68.7	68.8	0.1	1.5	No
99	Bryan Avenue	El Camino Real to Rubicon	68.7	68.8	0.1	1.5	No

Table 12

100	Bryan Avenue	Eastwood to Jeffrey Road	65.8	67.1	1.3	1.5	No
101	Bryan Avenue	Westwood to Yale Avenue	66.3	66.8	0.5	1.5	No
102	Bryan Avenue	Culver Drive to Westwood	66.3	66.7	0.4	1.5	No
103	Bryan Avenue	Yale Avenue to Eastwood	65.8	66.7	0.9	1.5	No
104	Cadence	Pusan to Chinon	64.5	65.6	1.1	3.0	No
105	Cadence	Bosque to Pusan	65.7	65.3	-0.4	1.5	No
106	Cadence	Ridge Valley (O Street) to Bosque	62.6	64.0	1.4	3.0	No
107	Cadence	Chinon to Merit	62.6	62.3	-0.3	3.0	No
108	Cadence	Merit to Astor	0.0	59.4	59.4	5.0	Yes
109	California Avenue	University Drive to Academy Way	64.3	66.2	1.9	3.0	No
110	California Avenue	Campus Drive to Harvard Avenue	63.2	64.2	1.0	3.0	No
111	California Avenue	Theory to Bison Avenue	63.1	63.9	0.8	3.0	No
112	Campus Drive	Carlson Avenue to University Drive	70.9	73.2	2.3	1.5	Yes
113	Campus Drive	University Drive to Bridge Road	70.1	71.8	1.7	1.5	Yes
114	Campus Drive	Jamboree Road to Carlson Avenue	69.0	71.5	2.5	1.5	Yes
115	Campus Drive	Stanford Court to Berkeley Avenue	70.1	71.1	1.0	1.5	No
116	Campus Drive	California Avenue to Culver Drive	68.9	70.9	2.0	1.5	Yes
117	Campus Drive	Berkeley Avenue to Cornell	68.9	70.0	1.1	1.5	No
118	Campus Drive	Martin to Von Karman Avenue	67.5	69.1	1.6	1.5	Yes
119	Campus Drive	Culver Drive to Paseo Montoya (Turtle Rock Drive)	68.5	68.7	0.2	1.5	No
120	Campus Drive	Von Karman Avenue to Teller Avenue	66.8	68.4	1.6	1.5	Yes
121	Campus Drive	MacArthur Boulevard to Martin	67.5	68.2	0.7	1.5	No
122	Campus Drive	Teller Avenue to Jamboree Road	66.8	67.5	0.7	1.5	No
123	Carlson Avenue	Michelson Drive to Campus Drive	64.5	67.9	3.4	3.0	Yes
124	Chinon	Irvine Boulevard to Cadence	56.6	58.8	2.2	5.0	No
125	Creek Road	Alton Parkway to Barranca Parkway	55.3	56.3	1.0	5.0	No
126	Culver Drive	Michelson Drive to I-405 SB Off-Ramp	73.4	74.0	0.6	1.5	No
127	Culver Drive	I-405 SB Off-Ramp to I-405 NB Off Ramp	73.4	73.9	0.5	1.5	No
128	Culver Drive	I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)	73.7	73.9	0.2	1.5	No
129	Culver Drive	Scottsdale Drive to I-5 SB Off- Ramp	73.7	73.8	0.1	1.5	No
130	Culver Drive	I-405 NB Off-Ramp to San Leandro	73.4	73.6	0.2	1.5	No
131	Culver Drive	San Leandro to Main Street	73.2	73.3	0.1	1.5	No
132	Culver Drive	Harvard Avenue to University Drive	72.7	73.4	0.7	1.5	No
133	Culver Drive	Trabuco Road to Farwell Avenue	74.1	74.2	0.1	1.5	No
134	Culver Drive	Alton Parkway to Barranca Parkway	72.9	73.2	0.3	1.5	No

Table 12

135	Culver Drive	Main Street to Alton Parkway	72.7	73.1	0.4	1.5	No
136	Culver Drive	Warner Avenue to Irvine Center Drive	72.7	73.0	0.3	1.5	No
137	Culver Drive	Walnut Avenue to Scottsdale Dive	72.6	72.9	0.3	1.5	No
138	Culver Drive	Barranca Parkway to Warner Avenue	72.6	72.8	0.2	1.5	No
139	Culver Drive	Shady Canyon Drive to Palo Verde	71.4	72.0	0.6	1.5	No
140	Culver Drive	Deerfield Avenue to Walnut Avenue	72.3	72.5	0.2	1.5	No
141	Culver Drive	Sandburg Way to Michelson Drive	71.9	72.5	0.6	1.5	No
142	Culver Drive	Irvine Center Drive to Deerfield Avenue	72.1	72.4	0.3	1.5	No
143	Culver Drive	Palo Verde to Campus Drive	71.4	71.6	0.2	1.5	No
144	Culver Drive	University Drive to Sandburg Way	71.5	72.2	0.7	1.5	No
145	Culver Drive	Farwell Avenue to Bryan Avenue	72.8	73.2	0.4	1.5	No
146	Culver Drive	Campus Drive to High School	71.6	72.1	0.5	1.5	No
147	Culver Drive	High School to Harvard Avenue	71.6	72.0	0.4	1.5	No
148	Culver Drive	Bryan Avenue to Florence	71.5	71.8	0.3	1.5	No
149	Culver Drive	Portola Parkway to Settlers	68.9	71.2	2.3	1.5	Yes
150	Culver Drive	Florence to Irvine Boulevard	71.3	71.7	0.4	1.5	No
151	Culver Drive	Irvine Boulevard to Viewpark	70.0	70.5	0.5	1.5	No
152	Culver Drive	Viewpark to Meadowood	70.0	70.4	0.4	1.5	No
153	Culver Drive	Settlers to Furrow	0.0	68.5	68.5	5.0	Yes
154	Culver Drive	Meadowood to Portola Parkway	68.3	69.0	0.7	1.5	No
155	Discovery Drive	Irvine Center Drive to Laguna Canyon Road	56.6	65.5	8.9	5.0	Yes
156	Discovery Drive	Waterworks Way to Irvine Center Drive	0.0	63.6	63.6	5.0	Yes
157	East Yale Loop	Alton Parkway to Witherspoon	64.6	65.6	1.0	3.0	No
158	East Yale Loop	Osborn Street to Barranca Parkway	64.3	65.4	1.1	3.0	No
159	East Yale Loop	Yale Avenue to Springbrook South	62.3	65.0	2.7	3.0	No
160	East Yale Loop	Springbrook North to Alton Parkway	62.3	63.6	1.3	3.0	No
161	East Yale Loop	Woodspring to Yale Avenue	62.3	62.8	0.5	3.0	No
162	East Yale Loop	Barranca Parkway to Eastshore	62.3	62.4	0.1	3.0	No
163	Eastwood	Bryan Avenue to Monticello	59.5	60.8	1.3	5.0	No
164	Eastwood	Columbus to Bryan Avenue	58.5	58.8	0.3	5.0	No
165	El Camino Real	Jamboree Road to Alliance (SR-261 Bridge)	66.9	67.1	0.2	1.5	No
166	El Camino Real North	El Camino Real to Bryan Avenue	62.2	62.4	0.2	3.0	No
167	Fairbanks	Alton Parkway to Astor	61.3	69.8	8.5	3.0	Yes
168	Fairbanks	Irvine Boulevard to Alton Parkway	0.0	66.9	66.9	5.0	Yes
169	Fairchild Road	MacArthur Boulevard to Jamboree Road	63.3	64.0	0.7	3.0	No



Table 12

170	Gateway Boulevard	Alton Parkway to Irvine Center Drive	57.0	63.5	6.5	5.0	Yes
171	Gateway Boulevard	Spectrum Center Drive (Fortune Drive) to Alton Parkway	59.4	62.3	2.9	5.0	No
172	Gateway Boulevard	Irvine Center Drive to Meridian	56.8	59.2	2.4	5.0	No
173	Great Park Boulevard	Sand Canyon to Ridge Valley	70.5	74.6	4.1	1.5	Yes
174	Great Park Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	64.0	70.3	6.3	3.0	Yes
175	Great Park Boulevard (EB)	Bosque to Skyhawk	0.0	69.0	69.0	5.0	Yes
176	Great Park Boulevard (WB)	Bosque to Skyhawk	0.0	68.4	68.4	5.0	Yes
177	Harvard Avenue	University Drive to Michelson Drive	71.2	72.0	0.8	1.5	No
178	Harvard Avenue	Michelson Drive to Coronado	69.5	70.4	0.9	1.5	No
179	Harvard Avenue	San Marino to Alton Parkway	69.4	70.2	0.8	1.5	No
180	Harvard Avenue	Coronado to Main Street	69.3	70.1	0.8	1.5	No
181	Harvard Avenue	San Carlo to San Marino	69.4	70.1	0.7	1.5	No
182	Harvard Avenue	Main Street to San Carlo	69.3	70.0	0.7	1.5	No
183	Harvard Avenue	Alton Parkway to San Leon	68.5	68.8	0.3	1.5	No
184	Harvard Avenue	San Juan to Barranca Parkway	68.5	68.8	0.3	1.5	No
185	Harvard Avenue	San Leon to San Juan	68.4	68.6	0.2	1.5	No
186	Harvard Avenue	Irvine Center Drive to Deerfield Avenue	65.5	67.5	2.0	1.5	Yes
187	Harvard Avenue	Deerfield Avenue to Poplar Street	65.5	67.4	1.9	1.5	Yes
188	Harvard Avenue	Barranca Parkway to Warner Avenue	67.6	67.9	0.3	1.5	No
189	Harvard Avenue	Bridge Road to University Drive	67.2	67.9	0.7	1.5	No
190	Harvard Avenue	Paseo Westpark to Irvine Center Drive	66.1	67.8	1.7	1.5	Yes
191	Harvard Avenue	Poplar Street to Walnut Avenue	66.8	68.8	2.0	1.5	Yes
192	Harvard Avenue	California Avenue to Berkeley Avenue	66.1	67.4	1.3	1.5	No
193	Harvard Avenue	Culver Drive to California Avenue	66.1	67.3	1.2	1.5	No
194	Harvard Avenue	Berkeley to Bridge Road	66.1	67.2	1.1	1.5	No
195	Harvard Avenue	Warner Avenue to Paseo Westpark	65.9	66.7	0.8	1.5	No
196	Hicks Canyon Drive	Delamesa to Yale Avenue	58.2	58.2	0.0	5.0	No
197	Hornet (5th St)	Ridge Valley (O Street) to Bosque	0.0	57.5	57.5	5.0	Yes
198	Hubble	Irvine Center Drive to Bunsen	55.5	55.9	0.4	5.0	No
199	Irvine Boulevard	SR-133 NB Off- Ramp to Ridge Valley (O Street)	72.1	72.2	0.1	1.5	No
200	Irvine Boulevard	SR-133 SB Off-Ramp to SR-133 NB Off-Ramp	72.0	72.2	0.2	1.5	No
201	Irvine Boulevard	Sand Canyon to SR-133 SB Off-Ramp	72.9	73.0	0.1	1.5	No
202	Irvine Boulevard	Merit to Alton	71.4	71.6	0.2	1.5	No
203	Irvine Boulevard	Journey to Sand Canyon Avenue	71.4	71.6	0.2	1.5	No
204	Irvine Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	70.9	71.1	0.2	1.5	No

Table 12

205	Irvine Boulevard	Pusan Way to Chinon (B Street)	70.8	71.0	0.2	1.5	No
206	Irvine Boulevard	Palo Lado to Yale Avenue	70.4	71.2	0.8	1.5	No
207	Irvine Boulevard	Culver Drive to Palo Lado	70.5	71.2	0.7	1.5	No
208	Irvine Boulevard	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.5	71.1	0.6	1.5	No
209	Irvine Boulevard	Old Myford Road to Market Place	70.3	71.1	0.8	1.5	No
210	Irvine Boulevard	Bosque (LY Street) to Modjeska	70.5	71.1	0.6	1.5	No
211	Irvine Boulevard	Jamboree Road to Old Myford Road	70.3	71.0	0.7	1.5	No
212	Irvine Boulevard	Market Place to SR-261 SB Off-Ramp	70.3	71.0	0.7	1.5	No
213	Irvine Boulevard	Jeffrey Road to Groveland	70.6	70.9	0.3	1.5	No
214	Irvine Boulevard	Bake Parkway to Lake Forest Drive	69.8	70.5	0.7	1.5	No
215	Irvine Boulevard	Independence Way (The Groves)/ The Groves to Jeffrey Road	70.2	70.7	0.5	1.5	No
216	Irvine Boulevard	Chinon (B Street) to Merit	70.2	70.5	0.3	1.5	No
217	Irvine Boulevard	SR-261 NB Off-Ramp to Central Park	70.1	70.6	0.5	1.5	No
218	Irvine Boulevard	Pueblo Norte to Independence Way (The Groves)/ Parkwood	69.9	70.5	0.6	1.5	No
219	Irvine Boulevard	Yale Avenue to Pueblo Norte	69.9	70.4	0.5	1.5	No
220	Irvine Boulevard	Modjeska to Pusan Way	70.0	70.2	0.2	1.5	No
221	Irvine Boulevard	Central Park Avenue to Culver Drive	69.5	70.0	0.5	1.5	No
222	Irvine Boulevard	Parker to Bake Parkway	69.0	69.6	0.6	1.5	No
223	Irvine Boulevard	Alton Parkway to Fairbanks	68.4	68.6	0.2	1.5	No
224	Irvine Center Drive	Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp	71.3	72.7	1.4	1.5	No
225	Irvine Center Drive	Orange Tree to Valley Oak Drive	69.7	72.0	2.3	1.5	Yes
226	Irvine Center Drive	I-405 SB Off-Ramp to Research	70.9	72.2	1.3	1.5	No
227	Irvine Center Drive	Irvine Valley College to Orange Tree	69.7	71.9	2.2	1.5	Yes
228	Irvine Center Drive	Fontaine Avenue to Jeffrey Road	69.5	71.7	2.2	1.5	Yes
229	Irvine Center Drive	Culver Drive to Deerwood	69.7	71.6	1.9	1.5	Yes
230	Irvine Center Drive	Deerwood to Yale Avenue	69.6	71.6	2.0	1.5	Yes
231	Irvine Center Drive	Yale Avenue to Fontaine Avenue	69.4	71.6	2.2	1.5	Yes
232	Irvine Center Drive	Jeffrey Road to Irvine Valley College	69.7	71.5	1.8	1.5	Yes
233	Irvine Center Drive	Alton Parkway to Spectrum	68.9	71.3	2.4	1.5	Yes
234	Irvine Center Drive	Spectrum to Pacifica	68.9	71.3	2.4	1.5	Yes
235	Irvine Center Drive	Hearthstone to Culver Drive	69.2	71.0	1.8	1.5	Yes
236	Irvine Center Drive	Charter to Barranca Parkway	68.1	70.9	2.8	1.5	Yes
237	Irvine Center Drive	Jamboree Road to Harvard Avenue	69.7	70.6	0.9	1.5	No
238	Irvine Center Drive	Pacifica to Entertainment (Enterprise/Fortune)	69.1	70.7	1.6	1.5	Yes
239	Irvine Center Drive	Valley Oak Drive to Sand Canyon Avenue	68.1	70.7	2.6	1.5	Yes

Table 12

240	Irvine Center Drive	Harvard Avenue to Hearthstone	69.2	70.3	1.1	1.5	No
241	Irvine Center Drive	Research to Hubble	67.9	69.8	1.9	1.5	Yes
242	Irvine Center Drive	Barranca Parkway to Gateway Boulevard	66.9	70.1	3.2	1.5	Yes
243	Irvine Center Drive	Bake Parkway to Muller	67.9	69.7	1.8	1.5	Yes
244	Irvine Center Drive	Discovery to Charter	67.3	70.2	2.9	1.5	Yes
245	Irvine Center Drive	Hubble to Bake Parkway	67.8	69.5	1.7	1.5	Yes
246	Irvine Center Drive	Muller to Tesla	67.7	69.3	1.6	1.5	Yes
247	Irvine Center Drive	Sand Canyon Avenue to Odyssey	67.6	69.4	1.8	1.5	Yes
248	Irvine Center Drive	Tesla to Scientific Way	67.1	68.9	1.8	1.5	Yes
249	Irvine Center Drive	Scientific Way to Lake Forest Drive	67.2	68.7	1.5	1.5	Yes
250	Irvine Center Drive	Gateway Boulevard to Alton Parkway	66.7	68.8	2.1	1.5	Yes
251	Irvine Center Drive	Laguna Canyon Road to Discovery	66.8	68.8	2.0	1.5	Yes
252	Irvine Center Drive	Odyssey to Laguna Canyon Road	66.8	68.8	2.0	1.5	Yes
253	Irvine Center Drive (Edinger)	Redhill Avenue to Jamboree Road	69.6	71.0	1.4	1.5	No
254	Jamboree Road	I-5 SB Off-Ramp to I-5 NB Off-Ramp	74.3	74.5	0.2	1.5	No
255	Jamboree Road	I-405 SB Off-Ramp to I-405 NB Off Ramp	75.1	75.6	0.5	1.5	No
256	Jamboree Road	Walnut Avenue to Michelle Drive	73.5	73.9	0.4	1.5	No
257	Jamboree Road	I-405 NB Off-Ramp to Main Street	76.5	77.0	0.5	1.5	No
258	Jamboree Road	Michelle Drive to I-5 SB Off-Ramp	73.5	73.6	0.1	1.5	No
259	Jamboree Road	Main Street to Kelvin Avenue	75.7	76.4	0.7	1.5	No
260	Jamboree Road	Michelson Drive to I-405 SB Off-Ramp	73.6	74.4	0.8	1.5	No
261	Jamboree Road	Kelvin Avenue to McGaw Avenue	75.5	76.0	0.5	1.5	No
262	Jamboree Road	McGaw Avenue to Alton Parkway	75.4	76.0	0.6	1.5	No
263	Jamboree Road	Birch Street to Campus Drive	72.1	73.0	0.9	1.5	No
264	Jamboree Road	Dupont Drive to Michelson Drive	73.3	73.9	0.6	1.5	No
265	Jamboree Road	Alton Parkway to Beckman	75.2	75.6	0.4	1.5	No
266	Jamboree Road	Fairchild Road to Birch Street	72.2	73.5	1.3	1.5	No
267	Jamboree Road	Beckman to Barranca Parkway	75.0	75.3	0.3	1.5	No
268	Jamboree Road	I-5 NB Off-Ramp to El Camino Real	74.9	75.1	0.2	1.5	No
269	Jamboree Road	Campus Drive to Dupont Drive	72.5	73.2	0.7	1.5	No
270	Jamboree Road	El Camino Real to West Drive	74.9	75.0	0.1	1.5	No
271	Jamboree Road	West Drive to Bryan Avenue	74.9	74.9	0.0	1.5	No
272	Jamboree Road	Bryan Avenue to Irvine Boulevard	74.5	74.6	0.1	1.5	No
273	Jamboree Road	Koll Center to Fairchild Road	71.7	72.8	1.1	1.5	No
274	Jamboree Road	MacArthur Boulevard to Koll Center	71.8	72.8	1.0	1.5	No

Table 12

275	Jamboree Road	Irvine Boulevard to Portola Parkway	70.0	70.7	0.7	1.5	No
276	Jamboree Road	Warner Avenue to Edinger Avenue	79.0	79.2	0.2	1.5	No
277	Jamboree Road	Barranca Parkway to Warner Avenue	78.1	78.3	0.2	1.5	No
278	Jamboree Road	Edinger Avenue to Walnut Avenue	77.8	78.0	0.2	1.5	No
279	Jeffrey Road	Walnut Avenue to I-5 NB Off-Ramp	70.9	71.4	0.5	1.5	No
280	Jeffrey Road	I-5 NB Off-Ramp to Roosevelt	71.8	72.3	0.5	1.5	No
281	Jeffrey Road	Poplar (Meadows) to Walnut Avenue	70.4	70.9	0.5	1.5	No
282	Jeffrey Road	Alton Parkway to Barranca Parkway	70.3	70.9	0.6	1.5	No
283	Jeffrey Road	Irvine Center Drive to Poplar (Meadows)	70.2	70.7	0.5	1.5	No
284	Jeffrey Road	I-405 NB Off-Ramp to Quail Creek	70.4	70.9	0.5	1.5	No
285	Jeffrey Road	Barranca Parkway to Irvine Valley College	70.3	70.7	0.4	1.5	No
286	Jeffrey Road	Quail Creek to Alton Parkway	70.4	70.8	0.4	1.5	No
287	Jeffrey Road	Irvine Valley College to Irvine Center Drive	70.1	70.5	0.4	1.5	No
288	Jeffrey Road	Trabuco Road to Hideaway	69.4	69.6	0.2	1.5	No
289	Jeffrey Road	Hideaway to Bryan Avenue	69.4	69.6	0.2	1.5	No
290	Jeffrey Road	Roosevelt to Grove	70.0	70.4	0.4	1.5	No
291	Jeffrey Road	Grove to Trabuco Road	70.0	70.2	0.2	1.5	No
292	Jeffrey Road	Bryan Avenue to Irvine Boulevard	68.1	68.5	0.4	1.5	No
293	Jeffrey Road	Encore to Portola Parkway	64.0	65.8	1.8	3.0	No
294	Jeffrey Road	Irvine Boulevard to Encore	64.0	65.5	1.5	3.0	No
295	Jeronimo Road	Goodyear to Bake Parkway	64.4	64.6	0.2	3.0	No
296	Jeronimo Road	Alton Parkway to Goodyear	64.1	64.3	0.2	3.0	No
297	Laguna Canyon Road	Old Laguna Canyon Road to Lake Forest Drive	72.6	73.3	0.7	1.5	No
298	Laguna Canyon Road	Laguna Canyon Freeway to Quail Hill Parkway	67.7	69.9	2.2	1.5	Yes
299	Laguna Canyon Road	Discovery to Sand Canyon Avenue	64.8	69.5	4.7	3.0	Yes
300	Laguna Canyon Road	I-405 Overcrossing to Pasteur	66.0	67.9	1.9	1.5	Yes
301	Laguna Canyon Road	Irvine Center Drive to Discovery	63.6	69.0	5.4	3.0	Yes
302	Laguna Canyon Road	Quail Hill Parkway to I-405 Overcrossing	66.0	67.9	1.9	1.5	Yes
303	Laguna Canyon Road	Pasteur to Alton Parkway	65.5	67.0	1.5	1.5	Yes
304	Laguna Canyon Road	Waterworks to Irvine Center Drive	64.5	67.5	3.0	3.0	Yes
305	Laguna Canyon Road	Alton Parkway to Barranca Parkway	64.8	66.3	1.5	3.0	No
306	Laguna Canyon Road	Barranca Parkway to Waterworks	63.9	66.2	2.3	3.0	No
307	Lake Forest Drive	Hidden Canyon to Laguna Canyon Road	68.3	69.4	1.1	1.5	No
308	Lake Forest Drive	Bake Parkway to Hidden Canyon (Romano)	68.3	69.3	1.0	1.5	No
309	Lake Forest Drive	Tesla to Bake Parkway	65.3	66.4	1.1	1.5	No

Table 12

310	Lake Road	Alton Parkway to Barranca Parkway	59.0	59.2	0.2	5.0	No
311	Lynx	Irvine Boulevard to Astor	0.0	53.2	53.2	5.0	Yes
312	MacArthur Boulevard	I-405 SB Off-Ramp to Michelson Drive	76.0	76.7	0.7	1.5	No
313	MacArthur Boulevard	Main Street to I-405 NB Off-Ramp	75.8	76.7	0.9	1.5	No
314	MacArthur Boulevard	I-405 NB Off-Ramp and I-405 SB Off-Ramp	75.7	76.6	0.9	1.5	No
315	MacArthur Boulevard	Jamboree Road to Fairchild Road	69.7	69.9	0.2	1.5	No
316	MacArthur Boulevard	Fairchild Road to University Drive	69.7	69.8	0.1	1.5	No
317	MacArthur Boulevard	Fitch to Red Hill Avenue	70.4	70.5	0.1	1.5	No
318	MacArthur Boulevard	Michelson Drive to Douglas	71.3	72.2	0.9	1.5	No
319	MacArthur Boulevard	Douglas to Campus Drive	71.3	72.1	0.8	1.5	No
320	MacArthur Boulevard	Skypark to Main Street	69.0	69.5	0.5	1.5	No
321	MacArthur Boulevard	Redhill Avenue to Skypark	68.0	68.3	0.3	1.5	No
322	MacArthur Boulevard	Birch Street to Jamboree Road	66.5	67.1	0.6	1.5	No
323	MacArthur Boulevard	Campus Drive to Birch Street	68.5	69.3	0.8	1.5	No
324	Main Street	Gillette Avenue to Von Karman Avenue	69.4	70.9	1.5	1.5	Yes
325	Main Street	MacArthur Boulevard to Mercantile	69.4	70.3	0.9	1.5	No
326	Main Street	Executive Park to MacArthur Boulevard	67.7	68.4	0.7	1.5	No
327	Main Street	Von Karman Avenue to Cartwright	67.2	68.5	1.3	1.5	No
328	Main Street	McDermott to Red Hill Avenue	67.9	68.1	0.2	1.5	No
329	Main Street	Red Hill Avenue to Executive Circle	67.7	68.0	0.3	1.5	No
330	Main Street	Jamboree Road to Union	67.4	67.8	0.4	1.5	No
331	Main Street	Culver Drive to West Yale Loop	67.0	67.2	0.2	1.5	No
332	Main Street	Siglo to Jamboree Road	67.2	67.7	0.5	1.5	No
333	Main Street	Veneto to Harvard Avenue	67.4	67.5	0.1	1.5	No
334	Main Street	Paseo Westpark to Culver Drive	66.2	66.3	0.1	1.5	No
335	Main Street	Harvard Avenue to San Mateo	66.2	66.3	0.1	1.5	No
336	Marine Way	Sand Canyon Avenue to Ridge Valley (O Street)	67.8	72.3	4.5	1.5	Yes
337	Marine Way	Alton Parkway to Bake Parkway	0.0	69.4	69.4	5.0	Yes
338	Marine Way	Lynx to Barranca Parkway	0.0	69.3	69.3	5.0	Yes
339	Marine Way	County Access to Treble	59.3	68.5	9.2	5.0	Yes
340	Marine Way	Ridge Valley (O Street) to Skyhawk	62.0	68.3	6.3	3.0	Yes
341	Marine Way	Skyhawk to County Access	59.3	67.4	8.1	5.0	Yes
342	Marine Way	Barranca Parkway to Alton Parkway	52.7	66.8	14.1	5.0	Yes
343	Marine Way	Treble to Lynx	0.0	66.5	66.5	5.0	Yes
344	McGaw Avenue	Von Karman Avenue to Jamboree Road	62.2	64.5	2.3	3.0	No

Table 12

345	McGaw Avenue	Red Hill Avenue to Von Karman Avenue	62.1	64.3	2.2	3.0	No
346	McGaw Avenue	Daimler to Red Hill Avenue	61.0	62.4	1.4	3.0	No
347	McGaw Avenue	Jamboree Road to Murphy Avenue	57.6	59.6	2.0	5.0	No
348	Meadowood	Culver Drive to Canyonwood	59.5	59.8	0.3	5.0	No
349	Meridian	Spectrum to Alton Parkway	54.7	55.6	0.9	5.0	No
350	Meridian	Alton Parkway to Gateway Boulevard	53.5	54.7	1.2	5.0	No
351	Merit	Irvine Boulevard to Cadence	59.3	58.0	-1.3	5.0	No
352	Michelson Drive	Riparian to Harvard Avenue	66.7	68.3	1.6	1.5	Yes
353	Michelson Drive	Almond Tree Lane to Yale Avenue	66.3	67.2	0.9	1.5	No
354	Michelson Drive	Von Karman Avenue to Obsidian	66.7	68.2	1.5	1.5	Yes
355	Michelson Drive	Parkside to Culver Drive	66.2	67.8	1.6	1.5	Yes
356	Michelson Drive	Gillman to Seton/Sandburg Way	66.3	66.9	0.6	1.5	No
357	Michelson Drive	Carlson to Prince	65.4	67.3	1.9	1.5	Yes
358	Michelson Drive	MacArthur Boulevard to Dupont Drive	66.7	67.5	0.8	1.5	No
359	Michelson Drive	Harvard Avenue to Parkside	66.2	66.8	0.6	1.5	No
360	Michelson Drive	Bixby to Von Karman Avenue	64.9	66.8	1.9	3.0	No
361	Michelson Drive	Jamboree Road to Carlson	68.0	69.6	1.6	1.5	Yes
362	Michelson Drive	Teller to Jamboree Road	68.7	69.6	0.9	1.5	No
363	Michelson Drive	Jordan East to University Drive	66.6	67.1	0.5	1.5	No
364	Michelson Drive	Culver Drive to Angell	65.9	66.3	0.4	1.5	No
365	Modjeska (A Street)	Portola Springs to Irvine Boulevard	70.7	71.7	1.0	1.5	No
366	Modjeska (A Street)	South of Irvine Boulevard	61.4	61.1	-0.3	3.0	No
367	Muirlands Boulevard	Bake Parkway to City Limits	66.4	67.2	0.8	1.5	No
368	Muirlands Boulevard	Alton Parkway to Sterling	66.1	66.3	0.2	1.5	No
369	Muirlands Boulevard	Wrigley to Bake Parkway	66.1	66.3	0.2	1.5	No
370	Newport Coast Drive	SR-73 NB Off-Ramp to Turtle Ridge	65.9	66.6	0.7	1.5	No
371	Newport Coast Drive	Turtle Crest to Bonita Canyon Drive	65.0	65.1	0.1	1.5	No
372	Nightmist	Sand Canyon Avenue to Tulip (Road C)	60.8	61.8	1.0	3.0	No
373	Northwood	Yale Avenue to Savannah	62.3	62.5	0.2	3.0	No
374	Northwood	Goldrush to Yale Avenue	60.5	61.5	1.0	3.0	No
375	Oak Canyon Drive	Valley Oak Drive to Sand Canyon Avenue	66.2	69.7	3.5	1.5	Yes
376	Pacifica	Gateway to Barranca Parkway	63.3	65.3	2.0	3.0	No
377	Pacifica	Alton Parkway to Gateway	61.8	64.1	2.3	3.0	No
378	Pacifica	Irvine Center Drive to Fortune Drive (Spectrum Center Drive)	61.7	62.7	1.0	3.0	No
379	Pacifica	Meridian to Alton Parkway	58.1	60.9	2.8	5.0	No

Table 12

380	Park Place	Christamon South to Yale Avenue	56.8	57.0	0.2	5.0	No
381	Portola Parkway	Bee Canyon Access Road to Sand Canyon Avenue	70.3	71.7	1.4	1.5	No
382	Portola Parkway	Jeffrey Road to Bee Canyon Access Road	70.3	71.7	1.4	1.5	No
383	Portola Parkway	Arrowhead to Ridge Valley Parkway	69.6	71.4	1.8	1.5	Yes
384	Portola Parkway	Sand Canyon Avenue to Arrowhead	69.6	71.1	1.5	1.5	Yes
385	Portola Parkway	Portola Springs to SR-241 SB Off-Ramp	65.5	70.1	4.6	1.5	Yes
386	Portola Parkway	Gatepark to Culver Drive	69.6	70.7	1.1	1.5	No
387	Portola Parkway	ETC-6 (SR-261) NB Off-Ramp to Gatepark	69.6	70.7	1.1	1.5	No
388	Portola Parkway	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	69.6	70.6	1.0	1.5	No
389	Portola Parkway	Jamboree Road to Bellevue	69.6	70.5	0.9	1.5	No
390	Portola Parkway	Bellevue to ETC-6 (SR-261) SB Off-Ramp	69.6	70.5	0.9	1.5	No
391	Portola Parkway	Yale Avenue to Jeffrey Road	68.6	70.2	1.6	1.5	Yes
392	Portola Parkway	Culver Drive to Yale Avenue	68.6	69.7	1.1	1.5	No
393	Portola Parkway	Silverado to Portola Springs	66.5	68.6	2.1	1.5	Yes
394	Pusan	Irvine Boulevard to Cadence	54.0	56.2	2.2	5.0	No
395	Quail Hill Parkway	Shady Canyon Drive to Passage	67.3	67.5	0.2	1.5	No
396	Quail Hill Parkway	East Knollcrest to Laguna Canyon Road	64.8	65.4	0.6	3.0	No
397	Quassar Drive (Spectrum)	Irvine Center Drive to Spectrum Center Drive (Fortune)	54.4	54.9	0.5	5.0	No
398	Red Hill Avenue	MacArthur Boulevard to McGaw Avenue	70.8	71.6	0.8	1.5	No
399	Red Hill Avenue	I-405 Over Crossing to Main Street	69.6	70.2	0.6	1.5	No
400	Red Hill Avenue	Alton Parkway to Deere Avenue	69.5	70.1	0.6	1.5	No
401	Red Hill Avenue	McGaw Avenue to Alton Parkway	69.3	69.9	0.6	1.5	No
402	Red Hill Avenue	Deere Avenue to Barranca Parkway	69.3	69.8	0.5	1.5	No
403	Red Hill Avenue	Skypark East to MacArthur Boulevard	70.2	71.4	1.2	1.5	No
404	Red Hill Avenue	Main Street to Skypark East	69.6	70.8	1.2	1.5	No
405	Research Drive	Hubble to Bake Parkway	65.4	69.6	4.2	1.5	Yes
406	Research Drive	Scientific to Lake Forest Drive	65.6	67.4	1.8	1.5	Yes
407	Research Drive	Bake Parkway to Muller	66.2	66.7	0.5	1.5	No
408	Research Drive	Irvine Center Drive to Bunsen	64.9	65.7	0.8	3.0	No
409	Ridge Valley (O Street)	Irvine Boulevard to Trabuco Road (Great Park Boulevard)	65.5	67.3	1.8	1.5	Yes
410	Ridge Valley (O Street)	Portola Parkway to Irvine Boulevard	65.9	66.4	0.5	1.5	No
411	Ridge Valley (O Street)	Trabuco Road (Great Park Boulevard) to Marine Way	65.8	66.0	0.2	1.5	No
412	Ridge Valley (O Street)	Ranchland to Portola Parkway	58.0	58.1	0.1	5.0	No
413	Ridgeline Drive	Concordia East to University Drive	67.7	68.8	1.1	1.5	No
414	Ridgeline Drive	Turtle Rock Drive to San Simeon	67.7	68.5	0.8	1.5	No

Table 12

415	Rockfield Avenue	Whatney to McLaren	66.3	67.7	1.4	1.5	No
416	Rockfield Avenue	Bake Parkway to Whatney	62.5	64.3	1.8	3.0	No
417	Rockfield Avenue	Thomas to Bake Parkway	62.5	63.1	0.6	3.0	No
418	Roosevelt	Jeffrey Road to Vision	65.2	66.6	1.4	1.5	No
419	Roosevelt	Yale Avenue to Van Buren	67.9	68.3	0.4	1.5	No
420	Roosevelt	Vision to Bay Tree	64.5	66.3	1.8	3.0	No
421	Roosevelt	Nimitz to Jeffrey Road	65.2	65.9	0.7	1.5	No
422	Roosevelt	Tulip (Road C) to Sand Canyon Avenue	63.7	65.6	1.9	3.0	No
423	Royal Oak	Alton Parkway to Eaglecreek	63.8	64.0	0.2	3.0	No
424	Sand Canyon Avenue	Oak Canyon Drive to Burt Road	70.7	72.2	1.5	1.5	Yes
425	Sand Canyon Avenue	Irvine Center Drive to Oak Canyon Drive	70.6	72.0	1.4	1.5	No
426	Sand Canyon Avenue	I-405 NB Off-Ramp to Alton Parkway	73.6	74.7	1.1	1.5	No
427	Sand Canyon Avenue	Burt Road to I-5 SB Off-Ramp	71.2	72.7	1.5	1.5	Yes
428	Sand Canyon Avenue	Marine to I-5 NB Off-Ramp	72.7	74.6	1.9	1.5	Yes
429	Sand Canyon Avenue	Trabuco Road to Towngate	70.0	71.0	1.0	1.5	No
430	Sand Canyon Avenue	Barranca Parkway to Waterworks	69.2	70.9	1.7	1.5	Yes
431	Sand Canyon Avenue	I-5 SB Off-Ramp to Marine	72.7	73.9	1.2	1.5	No
432	Sand Canyon Avenue	Hospital to Barranca Parkway	69.3	70.8	1.5	1.5	Yes
433	Sand Canyon Avenue	Nightmist to Roosevelt	73.3	73.5	0.2	1.5	No
434	Sand Canyon Avenue	I-405 SB Off-Ramp to I-405 NB Off-Ramp	72.4	73.6	1.2	1.5	No
435	Sand Canyon Avenue	I-5 NB Off-Ramp to Nightmist	73.2	73.5	0.3	1.5	No
436	Sand Canyon Avenue	Towngate to Irvine Boulevard	69.3	70.3	1.0	1.5	No
437	Sand Canyon Avenue	Waterworks to Irvine Center Drive	69.2	70.2	1.0	1.5	No
438	Sand Canyon Avenue	Irvine Boulevard to Portola Parkway	68.0	69.2	1.2	1.5	No
439	Sand Canyon Avenue	Roosevelt to Trabuco Road	72.6	72.8	0.2	1.5	No
440	Sand Canyon Avenue	Alton Parkway to Hospital	69.7	70.8	1.1	1.5	No
441	Sand Canyon/Shady Canyon	Quail Hill Parkway to I-405 SB Ramps	71.3	71.8	0.5	1.5	No
442	Scientific Way	Irvine Center Drive to Wald	54.6	55.0	0.4	5.0	No
443	Shady Canyon Drive	Culver Drive/Bonita Canyon Drive to Cloverfield	68.6	69.3	0.7	1.5	No
444	Shady Canyon Drive	Bommer Canyon Road to Sunnyhill	67.1	67.7	0.6	1.5	No
445	Skyhawk	Great Park Boulevard to Marine Way	52.8	59.6	6.8	5.0	Yes
446	Southwood	Yale Avenue to Colt	60.5	60.6	0.1	3.0	No
447	Southwood	Challenger to Yale Avenue	59.9	60.4	0.5	5.0	No
448	Spectrum Center Drive (Fortune Drive)	Pacifica to Quassar Drive (Spectrum )	61.4	62.0	0.6	3.0	No
449	Spectrum Center Drive (Fortune Drive)	Quassar Drive (Spectrum ) to Gatewayb	62.0	62.5	0.5	3.0	No



Table 12

450	Sunnyhill	Shady Canyon Drive to Turtle Rock Drive	56.9	57.7	0.8	5.0	No
451	Technology Drive	Barranca Parkway to Alton Parkway	67.0	70.8	3.8	1.5	Yes
452	Technology Drive	Old Laguna Canyon Road to I-5/SR-133 Undercrossing	63.2	69.6	6.4	3.0	Yes
453	Technology Drive	I-5/SR-133 to Barranca Parkway	62.8	69.4	6.6	3.0	Yes
454	Technology Drive	Ada to Alton Parkway	57.8	63.7	5.9	5.0	Yes
455	Toledo Way	Bake Parkway to City Limits	65.5	65.6	0.1	1.5	No
456	Toledo Way	Goodyear to Bake Parkway	64.5	64.7	0.2	3.0	No
457	Toledo Way	Alton Parkway to Parker	63.9	64.5	0.6	3.0	No
458	Trabuco Road	Keystone to Sand Canyon Avenue	66.7	67.2	0.5	1.5	No
459	Trabuco Road	Jeffrey Road to Keystone	66.7	67.1	0.4	1.5	No
460	Trabuco Road	Culver Drive to I-5 NB Off-Ramp	66.3	66.8	0.5	1.5	No
461	Trabuco Road	Monroe to Yale Avenue	66.3	66.8	0.5	1.5	No
462	Trabuco Road	I-5 NB Off-Ramp to Monroe	66.3	66.7	0.4	1.5	No
463	Trabuco Road	Yale Avenue to Remington	65.7	66.4	0.7	1.5	No
464	Trabuco Road	Remington to Jeffrey Road	65.7	66.1	0.4	1.5	No
465	Turtle Ridge Drive	Federation Way to Bonita Canyon	0.0	68.7	68.7	5.0	Yes
466	Turtle Rock Drive	Ridgeline to Willowleaf	66.9	67.9	1.0	1.5	No
467	Turtle Rock Drive	Silkwood to Sunnyhill	67.0	67.8	0.8	1.5	No
468	Turtle Rock Drive	Canyon Park to Ridgeline	66.7	67.1	0.4	1.5	No
469	Turtle Rock Drive	Sunnyhill to Southernwood	63.9	64.0	0.1	3.0	No
470	Turtle Rock Drive	Campus Drive to Hillgate	63.8	64.1	0.3	3.0	No
471	Turtle Rock Drive	Paseo Segovia to Campus Drive	65.3	65.5	0.2	1.5	No
472	University Drive	Golden Glow to Yale Avenue	72.2	73.0	0.8	1.5	No
473	University Drive	Ridgeline to Michelson Drive	72.1	72.6	0.5	1.5	No
474	University Drive	Culver Drive to Golden Glow	72.1	72.9	0.8	1.5	No
475	University Drive	Yale Avenue to Ridgeline	72.0	72.4	0.4	1.5	No
476	University Drive	Michelson Drive to I-405 SB Off-Ramp	72.3	72.7	0.4	1.5	No
477	University Drive	Mesa to Campus Drive	73.3	74.5	1.2	1.5	No
478	University Drive	MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	73.3	74.4	1.1	1.5	No
479	University Drive	California Avenue to Mesa	73.3	74.4	1.1	1.5	No
480	University Drive	Campus Drive to Harvard Avenue	69.5	70.7	1.2	1.5	No
481	University Drive	SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	70.4	71.6	1.2	1.5	No
482	University Drive	SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps	69.2	70.2	1.0	1.5	No
483	University Drive	San Joaquin to Culver Drive	68.7	69.8	1.1	1.5	No
484	University Drive	Harvard Avenue to San Joaquin	68.7	69.8	1.1	1.5	No

Table 12

485	Valley Oak Drive	Hawkcreek to Barranca Parkway	63.0	68.1	5.1	3.0	Yes
486	Valley Oak Drive	Irvine Center Drive to Oak Canyon Drive	65.2	69.6	4.4	1.5	Yes
487	Valley Oak Drive	Barranca Parkway to Irvine Center Drive	62.9	67.1	4.2	3.0	Yes
488	Valley Oak Drive	Alton Parkway to Hawkcreek	63.8	64.9	1.1	3.0	No
489	Von Karman Avenue	Marriott to Morse Avenue	68.9	71.0	2.1	1.5	Yes
490	Von Karman Avenue	Michelson Drive to Quartz	68.8	70.9	2.1	1.5	Yes
491	Von Karman Avenue	McGaw Avenue to Alton Parkway	69.3	70.8	1.5	1.5	Yes
492	Von Karman Avenue	Alton Parkway to Barranca Parkway	68.4	70.4	2.0	1.5	Yes
493	Von Karman Avenue	Main Street to Anchor	69.2	70.7	1.5	1.5	Yes
494	Von Karman Avenue	Anchor to McGaw Avenue	69.2	70.5	1.3	1.5	No
495	Von Karman Avenue	Morse to Main Street	69.2	70.3	1.1	1.5	No
496	Von Karman Avenue	Martin to Dupont Drive	67.8	69.6	1.8	1.5	Yes
497	Von Karman Avenue	Campus Drive to Martin	67.8	69.5	1.7	1.5	Yes
498	Von Karman Avenue	Dupont Drive to Michelson Drive	67.8	69.5	1.7	1.5	Yes
499	Walnut Avenue	Jeffrey Road to I-5 SB Off-Ramp	68.9	70.9	2.0	1.5	Yes
500	Walnut Avenue	Myford Road to Jamboree Road SB Off-Ramp	68.6	69.1	0.5	1.5	No
501	Walnut Avenue	The Mall Street to Culver Drive	68.2	68.8	0.6	1.5	No
502	Walnut Avenue	Harvard Avenue to The Mall Street	68.2	68.8	0.6	1.5	No
503	Walnut Avenue	Franciscan Street to Ravenwood Street	68.0	68.5	0.5	1.5	No
504	Walnut Avenue	Ravenwood Street to Yale Avenue	68.0	68.5	0.5	1.5	No
505	Walnut Avenue	Culver Drive to Franciscan Street	68.0	68.4	0.4	1.5	No
506	Walnut Avenue	Peters Canyon Road to Harvard Avenue	67.0	68.0	1.0	1.5	No
507	Walnut Avenue	Jamboree Road NB Off-Ramp to Peters Canyon Road	67.0	67.9	0.9	1.5	No
508	Walnut Avenue	Yale Avenue to Kazan Street	66.3	67.3	1.0	1.5	No
509	Walnut Avenue	Wisteria to Jeffrey Road	66.3	67.2	0.9	1.5	No
510	Warner Avenue	Jamboree Road SB Off-ramp to Construction North	69.6	70.2	0.6	1.5	No
511	Warner Avenue	Construction North to Harvard Avenue	67.8	68.6	0.8	1.5	No
512	Warner Avenue	Harvard Avenue to Paseo Westpark	66.1	67.1	1.0	1.5	No
513	Warner Avenue	Santa Ynez to Culver Drive	65.1	66.2	1.1	1.5	No
514	Warner Avenue	Culver Drive to West Yale Loop	64.9	65.8	0.9	3.0	No
515	West Yale Loop	Alton Parkway to Blue Lake North	63.3	64.0	0.7	3.0	No
516	West Yale Loop	Eagle Run to Main Street	63.3	63.9	0.6	3.0	No
517	West Yale Loop	Thunder Run to Yale Avenue	62.7	64.0	1.3	3.0	No
518	West Yale Loop	Main Street to Timber Run	62.7	62.8	0.1	3.0	No
519	West Yale Loop	Yale Avenue to Shorebird	61.8	63.2	1.4	3.0	No

Table 12

520	West Yale Loop	Warner Avenue to Stonecreek South	61.8	62.7	0.9	3.0	No
521	West Yale Loop	Barranca Parkway to Alton Parkway	61.7	62.4	0.7	3.0	No
522	West Yale Loop	Stonecreek North to Warner Avenue	61.8	62.6	0.8	3.0	No
523	West Yale Loop	Birdsong to Barranca Parkway	61.8	62.4	0.6	3.0	No
524	Westwood	Yorktown to Bryan Avenue	63.2	63.5	0.3	3.0	No
525	Westwood	Bryan Avenue to Leaf	61.3	61.6	0.3	3.0	No
526	Yale Avenue	Deerfield Avenue to Winvale Avenue	68.5	68.6	0.1	1.5	No
527	Yale Avenue	Hicks Canyon Drive to Meadowood	67.2	67.3	0.1	1.5	No
528	Yale Avenue	Walnut Avenue to Roosevelt	70.7	71.1	0.4	1.5	No
529	Yale Avenue	Roosevelt to Trabuco Road	66.9	67.1	0.2	1.5	No
530	Yale Avenue	Irvine Center Drive to Deerfield Avenue	66.5	66.9	0.4	1.5	No
531	Yale Avenue	West Yale Loop to Irvine Center Drive	65.0	66.5	1.5	1.5	Yes
532	Yale Avenue	Winvale Avenue to Karen Ann Lane	65.6	65.7	0.1	1.5	No
533	Yale Avenue	Karen Ann Lane to Walnut Avenue	65.6	65.7	0.1	1.5	No
534	Yale Avenue	Trabuco Road to Southwood	65.1	65.6	0.5	1.5	No
535	Yale Avenue	Southwood to Bryan Avenue	65.1	65.4	0.3	1.5	No
536	Yale Avenue	Northwood to Irvine Boulevard	64.8	65.1	0.3	3.0	No
537	Yale Avenue	Bryan Avenue to Monticello	64.8	65.0	0.2	3.0	No
538	Yale Avenue	Irvine Boulevard to Park Place	64.1	64.2	0.1	3.0	No
539	Yale Avenue	University Drive to Royce	57.9	63.6	5.7	5.0	Yes
540	Yale Court	Arborwood to Portola Parkway	60.0	60.4	0.4	1.5	No

<sup>1</sup> Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use.

<sup>3</sup> Does the Project create an incremental noise level increase exceeding the significance criteria?

Table 13

Table 13: Existing and Preferred Plan Traffic Noise Level Increases

ID	Road	Segment	CNEL at Receiving Land Use (dBA) <sup>2</sup>			Incremental Noise Level Increase Threshold <sup>3</sup>	
			Existing	Preferred	Project Addition	Limit	Exceeded?
1	Ada	Barranca Parkway to Marine Way	0.0	70.8	70.8	5.0	Yes
2	Ada	Alton Parkway to Barranca Parkway	60.3	69.2	8.9	3.0	Yes
3	Alton Parkway	Enterprise to I-5 NB Off-Ramp	71.3	73.9	2.6	1.5	Yes
4	Alton Parkway	I-5 NB Off-Ramp to Technology Drive West	72.1	74.5	2.4	1.5	Yes
5	Alton Parkway	East Yale Loop to Jeffrey Road	71.3	71.8	0.5	1.5	No
6	Alton Parkway	Gateway Boulevard to Enterprise	69.3	71.7	2.4	1.5	Yes
7	Alton Parkway	Jeffrey Road to Royal Oak	70.1	70.7	0.6	1.5	No
8	Alton Parkway	Daimler Street to Red Hill Avenue	63.7	70.6	6.9	3.0	Yes
9	Alton Parkway	Culver Drive to West Yale Loop	70.4	70.6	0.2	1.5	No
10	Alton Parkway	West Yale Loop to Lake Road	70.3	70.6	0.3	1.5	No
11	Alton Parkway	Technology Drive West to Ada	70.2	72.4	2.2	1.5	Yes
12	Alton Parkway	Creek Road to East Yale Loop	70.1	70.5	0.4	1.5	No
13	Alton Parkway	Red Hill Avenue to Von Karman Avenue	68.1	70.4	2.3	1.5	Yes
14	Alton Parkway	Lake Road to Creek Road	70.1	70.3	0.2	1.5	No
15	Alton Parkway	Telemetry to Banting	69.0	70.3	1.3	1.5	No
16	Alton Parkway	Irvine Boulevard to Commercentre	70.3	70.8	0.5	1.5	No
17	Alton Parkway	Jenner to Telemetry	69.0	70.3	1.3	1.5	No
18	Alton Parkway	Irvine Center Drive to Gateway Boulevard	68.6	71.0	2.4	1.5	Yes
19	Alton Parkway	Sand Canyon Avenue to Hospital	72.1	73.7	1.6	1.5	Yes
20	Alton Parkway	Laguna Canyon Road to Jenner	69.0	70.2	1.2	1.5	No
21	Alton Parkway	Technology Drive East to Barranca Pkwy/Muirlands Blvd	69.1	70.8	1.7	1.5	Yes
22	Alton Parkway	Royal Oak to Valley Oak Drive	69.4	70.0	0.6	1.5	No
23	Alton Parkway	Banting to Pacifica	68.4	69.9	1.5	1.5	Yes
24	Alton Parkway	Barranca Pkwy/Muirlands Blvd to Jeronimo Road	70.1	70.3	0.2	1.5	No
25	Alton Parkway	Ada to Technology Drive East	69.2	70.3	1.1	1.5	No
26	Alton Parkway	Von Karman Avenue to Jamboree Road	68.7	69.6	0.9	1.5	No
27	Alton Parkway	Jeronimo Road to Hughes	69.8	70.0	0.2	1.5	No
28	Alton Parkway	Hughes to Morgan	69.5	69.8	0.3	1.5	No
29	Alton Parkway	Morgan to Toledo Way	68.8	69.0	0.2	1.5	No

Table 13

30	Alton Parkway	San Marino to Culver Drive	68.8	69.1	0.3	1.5	No
31	Alton Parkway	Jamboree Road to Murphy Avenue	68.0	68.9	0.9	1.5	No
32	Alton Parkway	Hospital to Laguna Canyon Road	70.7	71.9	1.2	1.5	No
33	Alton Parkway	Valley Oak Drive to Sand Canyon Avenue	71.1	71.8	0.7	1.5	No
34	Alton Parkway	Murphy Avenue to Harvard Avenue	68.1	68.7	0.6	1.5	No
35	Alton Parkway	Foster to Irvine Boulevard	68.0	68.7	0.7	1.5	No
36	Alton Parkway	Fairbanks to Foster	67.5	68.4	0.9	1.5	No
37	Alton Parkway	Toledo Way to Bertea	68.2	68.4	0.2	1.5	No
38	Alton Parkway	Pacifica to Meridian	69.7	71.5	1.8	1.5	Yes
39	Alton Parkway	Bertea to Fairbanks	68.1	68.3	0.2	1.5	No
40	Alton Parkway	Meridian to Irvine Center Drive	66.6	68.2	1.6	1.5	Yes
41	Alton Parkway	Paseo Westpark to San Marino	67.9	68.1	0.2	1.5	No
42	Alton Parkway	Harvard Avenue to Paseo Westpark	66.9	67.5	0.6	1.5	No
43	Astor	Lynx to Fairbanks	57.5	67.0	9.5	5.0	Yes
44	Astor	Cadence to Lynx	0.0	65.8	65.8	5.0	Yes
45	Bake Parkway	I-5 NB Off-Ramp to Rockfield Boulevard	75.4	76.6	1.2	1.5	No
46	Bake Parkway	Muirlands Boulevard to Jeronimo Road	72.7	72.9	0.2	1.5	No
47	Bake Parkway	Rockfield Boulevard to Muirlands Boulevard	74.7	75.0	0.3	1.5	No
48	Bake Parkway	Jeronimo Road to Toledo Way	71.9	72.0	0.1	1.5	No
49	Bake Parkway	Toledo Way to Cromwell	71.5	71.6	0.1	1.5	No
50	Bake Parkway	Cromwell to Irvine Boulevard	71.4	71.6	0.2	1.5	No
51	Bake Parkway	Research Drive to I-5 SB Off-Ramp	68.5	69.5	1.0	1.5	No
52	Bake Parkway	Irvine Center Drive to Research Drive	64.1	64.8	0.7	3.0	No
53	Bake Parkway	Lake Forest Drive to Irvine Center Drive	61.9	63.4	1.5	3.0	No
54	Banting	Alton Parkway to Barranca Parkway	57.6	60.2	2.6	5.0	No
55	Barranca Parkway	Pacifica to Irvine Center Drive	70.5	73.1	2.6	1.5	Yes
56	Barranca Parkway	Banting to Pacifica	70.7	72.7	2.0	1.5	Yes
57	Barranca Parkway	I-5 HOV Ramp to Technology Drive West	69.8	72.6	2.8	1.5	Yes
58	Barranca Parkway	Technology Drive West to Ada	70.4	72.6	2.2	1.5	Yes
59	Barranca Parkway	Irvine Center Drive to I-5 HOV Ramp	69.3	72.3	3.0	1.5	Yes
60	Barranca Parkway	Culver Drive to West Yale Loop	71.9	72.2	0.3	1.5	No
61	Barranca Parkway	East Yale Loop to Jeffrey Road	71.7	72.1	0.4	1.5	No
62	Barranca Parkway	West Yale Loop to Lake Road	71.6	72.0	0.4	1.5	No
63	Barranca Parkway	Ada to Alton Parkway	70.2	72.0	1.8	1.5	Yes
64	Barranca Parkway	Lake Road to Creek Road	71.2	71.7	0.5	1.5	No

Table 13

65	Barranca Parkway	Red Hill Avenue to Armstrong Avenue	73.3	74.7	1.4	1.5	No
66	Barranca Parkway	Discovery/Herchel to Banting	69.7	71.6	1.9	1.5	Yes
67	Barranca Parkway	Lyon to East Yale Loop	71.0	71.5	0.5	1.5	No
68	Barranca Parkway	Creek Road to Lyon	70.9	71.4	0.5	1.5	No
69	Barranca Parkway	Von Karman Avenue to Jamboree Road	71.5	72.7	1.2	1.5	No
70	Barranca Parkway	Sand Canyon Avenue to Laguna Canyon Road	68.5	70.8	2.3	1.5	Yes
71	Barranca Parkway	Armstrong Avenue to Von Karman Avenue	72.0	72.3	0.3	1.5	No
72	Barranca Parkway	Valley Oak Drive to Sand Canyon Avenue	69.1	70.6	1.5	1.5	Yes
73	Barranca Parkway	Jamboree Road to Construction Circle	70.1	71.0	0.9	1.5	No
74	Barranca Parkway	Santa Rosa to Culver Drive	69.8	70.9	1.1	1.5	No
75	Barranca Parkway	FedEx to Discovery/Herchel	68.8	70.2	1.4	1.5	No
76	Barranca Parkway	Jeffrey Road to Valley Oak Drive	68.3	70.2	1.9	1.5	Yes
77	Barranca Parkway	Laguna Canyon Road to FedEx	68.8	70.1	1.3	1.5	No
78	Barranca Parkway	Pullman Street to Red Hill Avenue	72.7	73.6	0.9	1.5	No
79	Barranca Parkway	Construction Circle to Fire Station	69.4	70.5	1.1	1.5	No
80	Barranca Parkway	Fire Station to Harvard Avenue	69.4	70.5	1.1	1.5	No
81	Barranca Parkway	Paseo Westpark to Santa Rosa	69.3	70.4	1.1	1.5	No
82	Barranca Parkway	Harvard Avenue to Paseo Westpark	69.2	70.1	0.9	1.5	No
83	Bay Tree	Trabuco Road to Roosevelt	56.1	57.2	1.1	5.0	No
84	Beacon	Ridge Valley to Benchmark	0.0	59.6	59.6	5.0	Yes
85	Benchmark (LN Street)	Ridge Valley (O Street) to Bosque	0.0	56.5	56.5	5.0	Yes
86	Bison Avenue	SR-73 NB Off-Ramp to California Avenue	68.6	69.6	1.0	1.5	No
87	Bonita Canyon Drive	MacArthur Boulevard to SR-73	70.0	70.3	0.3	1.5	No
88	Bonita Canyon Drive	Turtle Ridge to Shady Canyon Drive	67.5	68.6	1.1	1.5	No
89	Bonita Canyon Drive	Newport Coast Drive to Turtle Ridge	67.5	68.2	0.7	1.5	No
90	Bonita Canyon Drive	SR-73 NB Off-Ramp to Newport Coast Drive	67.5	68.0	0.5	1.5	No
91	Bosque	Cadence to Great Park Boulevard	63.0	65.2	2.2	3.0	No
92	Bosque	Irvine Boulevard to Benchmark (LN Street)	59.7	63.5	3.8	5.0	No
93	Bosque	Benchmark to Cadence	59.7	63.1	3.4	5.0	No
94	Bosque	Great Park Boulevard to Beacon	0.0	56.7	56.7	5.0	Yes
95	Bosque	Beacon to S 5th Street	0.0	56.1	56.1	5.0	Yes
96	Bryan Avenue	Jamboree Road to Market Place	68.7	68.9	0.2	1.5	No
97	Bryan Avenue	Market Place to El Camino Real	68.7	68.9	0.2	1.5	No
98	Bryan Avenue	Rubicon to Culver Drive	68.7	68.9	0.2	1.5	No
99	Bryan Avenue	El Camino Real to Rubicon	68.7	68.8	0.1	1.5	No

Table 13

100	Bryan Avenue	Eastwood to Jeffrey Road	65.8	66.9	1.1	1.5	No
101	Bryan Avenue	Westwood to Yale Avenue	66.3	66.6	0.3	1.5	No
102	Bryan Avenue	Culver Drive to Westwood	66.3	66.6	0.3	1.5	No
103	Bryan Avenue	Yale Avenue to Eastwood	65.8	66.4	0.6	1.5	No
104	Cadence	Pusan to Chinon	64.5	65.6	1.1	3.0	No
105	Cadence	Bosque to Pusan	65.7	65.3	-0.4	1.5	No
106	Cadence	Ridge Valley (O Street) to Bosque	62.6	63.9	1.3	3.0	No
107	Cadence	Chinon to Merit	62.6	62.2	-0.4	3.0	No
108	Cadence	Merit to Astor	0.0	59.4	59.4	5.0	Yes
109	California Avenue	University Drive to Academy Way	64.3	66.2	1.9	3.0	No
110	California Avenue	Campus Drive to Harvard Avenue	63.2	64.2	1.0	3.0	No
111	California Avenue	Theory to Bison Avenue	63.1	63.9	0.8	3.0	No
112	Campus Drive	Carlson Avenue to University Drive	70.9	73.2	2.3	1.5	Yes
113	Campus Drive	University Drive to Bridge Road	70.1	71.8	1.7	1.5	Yes
114	Campus Drive	Jamboree Road to Carlson Avenue	69.0	71.5	2.5	1.5	Yes
115	Campus Drive	Stanford Court to Berkeley Avenue	70.1	71.1	1.0	1.5	No
116	Campus Drive	California Avenue to Culver Drive	68.9	70.9	2.0	1.5	Yes
117	Campus Drive	Berkeley Avenue to Cornell	68.9	70.0	1.1	1.5	No
118	Campus Drive	Martin to Von Karman Avenue	67.5	69.0	1.5	1.5	Yes
119	Campus Drive	Culver Drive to Paseo Montoya (Turtle Rock Drive)	68.5	68.7	0.2	1.5	No
120	Campus Drive	Von Karman Avenue to Teller Avenue	66.8	68.3	1.5	1.5	Yes
121	Campus Drive	MacArthur Boulevard to Martin	67.5	68.2	0.7	1.5	No
122	Campus Drive	Teller Avenue to Jamboree Road	66.8	67.5	0.7	1.5	No
123	Carlson Avenue	Michelson Drive to Campus Drive	64.5	67.9	3.4	3.0	Yes
124	Chinon	Irvine Boulevard to Cadence	56.6	59.0	2.4	5.0	No
125	Creek Road	Alton Parkway to Barranca Parkway	55.3	56.1	0.8	5.0	No
126	Culver Drive	Michelson Drive to I-405 SB Off-Ramp	73.4	73.9	0.5	1.5	No
127	Culver Drive	I-405 SB Off-Ramp to I-405 NB Off Ramp	73.4	73.8	0.4	1.5	No
128	Culver Drive	I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)	73.7	73.9	0.2	1.5	No
129	Culver Drive	Scottsdale Drive to I-5 SB Off- Ramp	73.7	73.9	0.2	1.5	No
130	Culver Drive	I-405 NB Off-Ramp to San Leandro	73.4	73.6	0.2	1.5	No
131	Culver Drive	San Leandro to Main Street	73.2	73.3	0.1	1.5	No
132	Culver Drive	Harvard Avenue to University Drive	72.7	73.3	0.6	1.5	No
133	Culver Drive	Trabuco Road to Farwell Avenue	74.1	74.3	0.2	1.5	No
134	Culver Drive	Alton Parkway to Barranca Parkway	72.9	73.2	0.3	1.5	No

Table 13

135	Culver Drive	Main Street to Alton Parkway	72.7	73.1	0.4	1.5	No
136	Culver Drive	Warner Avenue to Irvine Center Drive	72.7	73.0	0.3	1.5	No
137	Culver Drive	Walnut Avenue to Scottsdale Dive	72.6	72.9	0.3	1.5	No
138	Culver Drive	Barranca Parkway to Warner Avenue	72.6	72.8	0.2	1.5	No
139	Culver Drive	Shady Canyon Drive to Palo Verde	71.4	72.0	0.6	1.5	No
140	Culver Drive	Deerfield Avenue to Walnut Avenue	72.3	72.5	0.2	1.5	No
141	Culver Drive	Sandburg Way to Michelson Drive	71.9	72.5	0.6	1.5	No
142	Culver Drive	Irvine Center Drive to Deerfield Avenue	72.1	72.4	0.3	1.5	No
143	Culver Drive	Palo Verde to Campus Drive	71.4	71.6	0.2	1.5	No
144	Culver Drive	University Drive to Sandburg Way	71.5	72.2	0.7	1.5	No
145	Culver Drive	Farwell Avenue to Bryan Avenue	72.8	73.2	0.4	1.5	No
146	Culver Drive	Campus Drive to High School	71.6	72.1	0.5	1.5	No
147	Culver Drive	High School to Harvard Avenue	71.6	72.0	0.4	1.5	No
148	Culver Drive	Bryan Avenue to Florence	71.5	71.8	0.3	1.5	No
149	Culver Drive	Portola Parkway to Settlers	68.9	71.1	2.2	1.5	Yes
150	Culver Drive	Florence to Irvine Boulevard	71.3	71.7	0.4	1.5	No
151	Culver Drive	Irvine Boulevard to Viewpark	70.0	70.5	0.5	1.5	No
152	Culver Drive	Viewpark to Meadowood	70.0	70.4	0.4	1.5	No
153	Culver Drive	Settlers to Furrow	0.0	68.4	68.4	5.0	Yes
154	Culver Drive	Meadowood to Portola Parkway	68.3	69.0	0.7	1.5	No
155	Discovery Drive	Irvine Center Drive to Laguna Canyon Road	56.6	64.0	7.4	5.0	Yes
156	Discovery Drive	Waterworks Way to Irvine Center Drive	0.0	61.2	61.2	5.0	Yes
157	East Yale Loop	Alton Parkway to Witherspoon	64.6	65.5	0.9	3.0	No
158	East Yale Loop	Osborn Street to Barranca Parkway	64.3	65.3	1.0	3.0	No
159	East Yale Loop	Yale Avenue to Springbrook South	62.3	64.8	2.5	3.0	No
160	East Yale Loop	Springbrook North to Alton Parkway	62.3	63.5	1.2	3.0	No
161	East Yale Loop	Woodspring to Yale Avenue	62.3	62.7	0.4	3.0	No
162	East Yale Loop	Barranca Parkway to Eastshore	62.3	62.4	0.1	3.0	No
163	Eastwood	Bryan Avenue to Monticello	59.5	60.8	1.3	5.0	No
164	Eastwood	Columbus to Bryan Avenue	58.5	58.7	0.2	5.0	No
165	El Camino Real	Jamboree Road to Alliance (SR-261 Bridge)	66.9	67.1	0.2	1.5	No
166	El Camino Real North	El Camino Real to Bryan Avenue	62.2	62.4	0.2	3.0	No
167	Fairbanks	Alton Parkway to Astor	61.3	69.7	8.4	3.0	Yes
168	Fairbanks	Irvine Boulevard to Alton Parkway	0.0	66.9	66.9	5.0	Yes
169	Fairchild Road	MacArthur Boulevard to Jamboree Road	63.3	64.1	0.8	3.0	No



Table 13

170	Gateway Boulevard	Alton Parkway to Irvine Center Drive	57.0	63.3	6.3	5.0	Yes
171	Gateway Boulevard	Spectrum Center Drive (Fortune Drive) to Alton Parkway	59.4	62.1	2.7	5.0	No
172	Gateway Boulevard	Irvine Center Drive to Meridian	56.8	59.1	2.3	5.0	No
173	Great Park Boulevard	Sand Canyon to Ridge Valley	70.5	74.4	3.9	1.5	Yes
174	Great Park Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	64.0	70.2	6.2	3.0	Yes
175	Great Park Boulevard (EB)	Bosque to Skyhawk	0.0	68.8	68.8	5.0	Yes
176	Great Park Boulevard (WB)	Bosque to Skyhawk	0.0	68.3	68.3	5.0	Yes
177	Harvard Avenue	University Drive to Michelson Drive	71.2	72.0	0.8	1.5	No
178	Harvard Avenue	Michelson Drive to Coronado	69.5	70.4	0.9	1.5	No
179	Harvard Avenue	San Marino to Alton Parkway	69.4	70.1	0.7	1.5	No
180	Harvard Avenue	Coronado to Main Street	69.3	70.1	0.8	1.5	No
181	Harvard Avenue	San Carlo to San Marino	69.4	70.0	0.6	1.5	No
182	Harvard Avenue	Main Street to San Carlo	69.3	70.0	0.7	1.5	No
183	Harvard Avenue	Alton Parkway to San Leon	68.5	68.8	0.3	1.5	No
184	Harvard Avenue	San Juan to Barranca Parkway	68.5	68.8	0.3	1.5	No
185	Harvard Avenue	San Leon to San Juan	68.4	68.6	0.2	1.5	No
186	Harvard Avenue	Irvine Center Drive to Deerfield Avenue	65.5	67.4	1.9	1.5	Yes
187	Harvard Avenue	Deerfield Avenue to Poplar Street	65.5	67.3	1.8	1.5	Yes
188	Harvard Avenue	Barranca Parkway to Warner Avenue	67.6	67.8	0.2	1.5	No
189	Harvard Avenue	Bridge Road to University Drive	67.2	67.8	0.6	1.5	No
190	Harvard Avenue	Paseo Westpark to Irvine Center Drive	66.1	67.8	1.7	1.5	Yes
191	Harvard Avenue	Poplar Street to Walnut Avenue	66.8	68.7	1.9	1.5	Yes
192	Harvard Avenue	California Avenue to Berkeley Avenue	66.1	67.2	1.1	1.5	No
193	Harvard Avenue	Culver Drive to California Avenue	66.1	67.2	1.1	1.5	No
194	Harvard Avenue	Berkeley to Bridge Road	66.1	67.1	1.0	1.5	No
195	Harvard Avenue	Warner Avenue to Paseo Westpark	65.9	66.8	0.9	1.5	No
196	Hicks Canyon Drive	Delamesa to Yale Avenue	58.2	58.2	0.0	5.0	No
197	Hornet (5th St)	Ridge Valley (O Street) to Bosque	0.0	57.5	57.5	5.0	Yes
198	Hubble	Irvine Center Drive to Bunsen	55.5	55.9	0.4	5.0	No
199	Irvine Boulevard	SR-133 NB Off- Ramp to Ridge Valley (O Street)	72.1	72.3	0.2	1.5	No
200	Irvine Boulevard	SR-133 SB Off-Ramp to SR-133 NB Off-Ramp	72.0	72.2	0.2	1.5	No
201	Irvine Boulevard	Sand Canyon to SR-133 SB Off-Ramp	72.9	73.1	0.2	1.5	No
202	Irvine Boulevard	Merit to Alton	71.4	71.6	0.2	1.5	No
203	Irvine Boulevard	Journey to Sand Canyon Avenue	71.4	71.6	0.2	1.5	No
204	Irvine Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	70.9	71.2	0.3	1.5	No

Table 13

205	Irvine Boulevard	Pusan Way to Chinon (B Street)	70.8	71.0	0.2	1.5	No
206	Irvine Boulevard	Palo Lado to Yale Avenue	70.4	71.1	0.7	1.5	No
207	Irvine Boulevard	Culver Drive to Palo Lado	70.5	71.0	0.5	1.5	No
208	Irvine Boulevard	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.5	70.9	0.4	1.5	No
209	Irvine Boulevard	Old Myford Road to Market Place	70.3	71.0	0.7	1.5	No
210	Irvine Boulevard	Bosque (LY Street) to Modjeska	70.5	70.9	0.4	1.5	No
211	Irvine Boulevard	Jamboree Road to Old Myford Road	70.3	70.9	0.6	1.5	No
212	Irvine Boulevard	Market Place to SR-261 SB Off-Ramp	70.3	70.9	0.6	1.5	No
213	Irvine Boulevard	Jeffrey Road to Groveland	70.6	70.8	0.2	1.5	No
214	Irvine Boulevard	Bake Parkway to Lake Forest Drive	69.8	70.6	0.8	1.5	No
215	Irvine Boulevard	Independence Way (The Groves)/ The Groves to Jeffrey Road	70.2	70.6	0.4	1.5	No
216	Irvine Boulevard	Chinon (B Street) to Merit	70.2	70.5	0.3	1.5	No
217	Irvine Boulevard	SR-261 NB Off-Ramp to Central Park	70.1	70.5	0.4	1.5	No
218	Irvine Boulevard	Pueblo Norte to Independence Way (The Groves)/ Parkwood	69.9	70.3	0.4	1.5	No
219	Irvine Boulevard	Yale Avenue to Pueblo Norte	69.9	70.3	0.4	1.5	No
220	Irvine Boulevard	Modjeska to Pusan Way	70.0	70.2	0.2	1.5	No
221	Irvine Boulevard	Central Park Avenue to Culver Drive	69.5	69.9	0.4	1.5	No
222	Irvine Boulevard	Parker to Bake Parkway	69.0	69.5	0.5	1.5	No
223	Irvine Boulevard	Alton Parkway to Fairbanks	68.4	68.6	0.2	1.5	No
224	Irvine Center Drive	Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp	71.3	72.6	1.3	1.5	No
225	Irvine Center Drive	Orange Tree to Valley Oak Drive	69.7	71.8	2.1	1.5	Yes
226	Irvine Center Drive	I-405 SB Off-Ramp to Research	70.9	72.1	1.2	1.5	No
227	Irvine Center Drive	Irvine Valley College to Orange Tree	69.7	71.7	2.0	1.5	Yes
228	Irvine Center Drive	Fontaine Avenue to Jeffrey Road	69.5	71.5	2.0	1.5	Yes
229	Irvine Center Drive	Culver Drive to Deerwood	69.7	71.4	1.7	1.5	Yes
230	Irvine Center Drive	Deerwood to Yale Avenue	69.6	71.4	1.8	1.5	Yes
231	Irvine Center Drive	Yale Avenue to Fontaine Avenue	69.4	71.4	2.0	1.5	Yes
232	Irvine Center Drive	Jeffrey Road to Irvine Valley College	69.7	71.3	1.6	1.5	Yes
233	Irvine Center Drive	Alton Parkway to Spectrum	68.9	71.0	2.1	1.5	Yes
234	Irvine Center Drive	Spectrum to Pacifica	68.9	71.0	2.1	1.5	Yes
235	Irvine Center Drive	Hearthstone to Culver Drive	69.2	70.9	1.7	1.5	Yes
236	Irvine Center Drive	Charter to Barranca Parkway	68.1	70.6	2.5	1.5	Yes
237	Irvine Center Drive	Jamboree Road to Harvard Avenue	69.7	70.5	0.8	1.5	No
238	Irvine Center Drive	Pacifica to Entertainment (Enterprise/Fortune)	69.1	70.5	1.4	1.5	No
239	Irvine Center Drive	Valley Oak Drive to Sand Canyon Avenue	68.1	70.5	2.4	1.5	Yes

Table 13

240	Irvine Center Drive	Harvard Avenue to Hearthstone	69.2	70.2	1.0	1.5	No
241	Irvine Center Drive	Research to Hubble	67.9	69.7	1.8	1.5	Yes
242	Irvine Center Drive	Barranca Parkway to Gateway Boulevard	66.9	69.8	2.9	1.5	Yes
243	Irvine Center Drive	Bake Parkway to Muller	67.9	69.7	1.8	1.5	Yes
244	Irvine Center Drive	Discovery to Charter	67.3	69.8	2.5	1.5	Yes
245	Irvine Center Drive	Hubble to Bake Parkway	67.8	69.5	1.7	1.5	Yes
246	Irvine Center Drive	Muller to Tesla	67.7	69.3	1.6	1.5	Yes
247	Irvine Center Drive	Sand Canyon Avenue to Odyssey	67.6	69.2	1.6	1.5	Yes
248	Irvine Center Drive	Tesla to Scientific Way	67.1	68.9	1.8	1.5	Yes
249	Irvine Center Drive	Scientific Way to Lake Forest Drive	67.2	68.7	1.5	1.5	Yes
250	Irvine Center Drive	Gateway Boulevard to Alton Parkway	66.7	68.6	1.9	1.5	Yes
251	Irvine Center Drive	Laguna Canyon Road to Discovery	66.8	68.6	1.8	1.5	Yes
252	Irvine Center Drive	Odyssey to Laguna Canyon Road	66.8	68.5	1.7	1.5	Yes
253	Irvine Center Drive (Edinger)	Redhill Avenue to Jamboree Road	69.6	70.9	1.3	1.5	No
254	Jamboree Road	I-5 SB Off-Ramp to I-5 NB Off-Ramp	74.3	74.5	0.2	1.5	No
255	Jamboree Road	I-405 SB Off-Ramp to I-405 NB Off Ramp	75.1	75.6	0.5	1.5	No
256	Jamboree Road	Walnut Avenue to Michelle Drive	73.5	73.9	0.4	1.5	No
257	Jamboree Road	I-405 NB Off-Ramp to Main Street	76.5	77.0	0.5	1.5	No
258	Jamboree Road	Michelle Drive to I-5 SB Off-Ramp	73.5	73.6	0.1	1.5	No
259	Jamboree Road	Main Street to Kelvin Avenue	75.7	76.3	0.6	1.5	No
260	Jamboree Road	Michelson Drive to I-405 SB Off-Ramp	73.6	74.3	0.7	1.5	No
261	Jamboree Road	Kelvin Avenue to McGaw Avenue	75.5	76.0	0.5	1.5	No
262	Jamboree Road	McGaw Avenue to Alton Parkway	75.4	75.9	0.5	1.5	No
263	Jamboree Road	Birch Street to Campus Drive	72.1	72.9	0.8	1.5	No
264	Jamboree Road	Dupont Drive to Michelson Drive	73.3	73.8	0.5	1.5	No
265	Jamboree Road	Alton Parkway to Beckman	75.2	75.5	0.3	1.5	No
266	Jamboree Road	Fairchild Road to Birch Street	72.2	73.4	1.2	1.5	No
267	Jamboree Road	Beckman to Barranca Parkway	75.0	75.2	0.2	1.5	No
268	Jamboree Road	I-5 NB Off-Ramp to El Camino Real	74.9	75.1	0.2	1.5	No
269	Jamboree Road	Campus Drive to Dupont Drive	72.5	73.1	0.6	1.5	No
270	Jamboree Road	El Camino Real to West Drive	74.9	75.0	0.1	1.5	No
271	Jamboree Road	West Drive to Bryan Avenue	74.9	75.0	0.1	1.5	No
272	Jamboree Road	Bryan Avenue to Irvine Boulevard	74.5	74.7	0.2	1.5	No
273	Jamboree Road	Koll Center to Fairchild Road	71.7	72.7	1.0	1.5	No
274	Jamboree Road	MacArthur Boulevard to Koll Center	71.8	72.6	0.8	1.5	No

Table 13

275	Jamboree Road	Irvine Boulevard to Portola Parkway	70.0	70.7	0.7	1.5	No
276	Jamboree Road	Warner Avenue to Edinger Avenue	79.0	79.1	0.1	1.5	No
277	Jamboree Road	Barranca Parkway to Warner Avenue	78.1	78.3	0.2	1.5	No
278	Jamboree Road	Edinger Avenue to Walnut Avenue	77.8	78.0	0.2	1.5	No
279	Jeffrey Road	Walnut Avenue to I-5 NB Off-Ramp	70.9	71.3	0.4	1.5	No
280	Jeffrey Road	I-5 NB Off-Ramp to Roosevelt	71.8	72.2	0.4	1.5	No
281	Jeffrey Road	Poplar (Meadows) to Walnut Avenue	70.4	70.9	0.5	1.5	No
282	Jeffrey Road	Alton Parkway to Barranca Parkway	70.3	70.8	0.5	1.5	No
283	Jeffrey Road	Irvine Center Drive to Poplar (Meadows)	70.2	70.7	0.5	1.5	No
284	Jeffrey Road	I-405 NB Off-Ramp to Quail Creek	70.4	70.7	0.3	1.5	No
285	Jeffrey Road	Barranca Parkway to Irvine Valley College	70.3	70.6	0.3	1.5	No
286	Jeffrey Road	Quail Creek to Alton Parkway	70.4	70.6	0.2	1.5	No
287	Jeffrey Road	Irvine Valley College to Irvine Center Drive	70.1	70.4	0.3	1.5	No
288	Jeffrey Road	Trabuco Road to Hideaway	69.4	69.6	0.2	1.5	No
289	Jeffrey Road	Hideaway to Bryan Avenue	69.4	69.6	0.2	1.5	No
290	Jeffrey Road	Roosevelt to Grove	70.0	70.4	0.4	1.5	No
291	Jeffrey Road	Grove to Trabuco Road	70.0	70.2	0.2	1.5	No
292	Jeffrey Road	Bryan Avenue to Irvine Boulevard	68.1	68.5	0.4	1.5	No
293	Jeffrey Road	Encore to Portola Parkway	64.0	65.8	1.8	3.0	No
294	Jeffrey Road	Irvine Boulevard to Encore	64.0	65.5	1.5	3.0	No
295	Jeronimo Road	Goodyear to Bake Parkway	64.4	64.6	0.2	3.0	No
296	Jeronimo Road	Alton Parkway to Goodyear	64.1	64.3	0.2	3.0	No
297	Laguna Canyon Road	Old Laguna Canyon Road to Lake Forest Drive	72.6	73.3	0.7	1.5	No
298	Laguna Canyon Road	Laguna Canyon Freeway to Quail Hill Parkway	67.7	69.9	2.2	1.5	Yes
299	Laguna Canyon Road	Discovery to Sand Canyon Avenue	64.8	69.1	4.3	3.0	Yes
300	Laguna Canyon Road	I-405 Overcrossing to Pasteur	66.0	67.9	1.9	1.5	Yes
301	Laguna Canyon Road	Irvine Center Drive to Discovery	63.6	67.5	3.9	3.0	Yes
302	Laguna Canyon Road	Quail Hill Parkway to I-405 Overcrossing	66.0	67.9	1.9	1.5	Yes
303	Laguna Canyon Road	Pasteur to Alton Parkway	65.5	66.9	1.4	1.5	No
304	Laguna Canyon Road	Waterworks to Irvine Center Drive	64.5	66.4	1.9	3.0	No
305	Laguna Canyon Road	Alton Parkway to Barranca Parkway	64.8	66.1	1.3	3.0	No
306	Laguna Canyon Road	Barranca Parkway to Waterworks	63.9	65.6	1.7	3.0	No
307	Lake Forest Drive	Hidden Canyon to Laguna Canyon Road	68.3	69.3	1.0	1.5	No
308	Lake Forest Drive	Bake Parkway to Hidden Canyon (Romano)	68.3	69.3	1.0	1.5	No
309	Lake Forest Drive	Tesla to Bake Parkway	65.3	66.3	1.0	1.5	No

Table 13

310	Lake Road	Alton Parkway to Barranca Parkway	59.0	59.2	0.2	5.0	No
311	Lynx	Irvine Boulevard to Astor	0.0	53.2	53.2	5.0	Yes
312	MacArthur Boulevard	I-405 SB Off-Ramp to Michelson Drive	76.0	76.7	0.7	1.5	No
313	MacArthur Boulevard	Main Street to I-405 NB Off-Ramp	75.8	76.6	0.8	1.5	No
314	MacArthur Boulevard	I-405 NB Off-Ramp and I-405 SB Off-Ramp	75.7	76.6	0.9	1.5	No
315	MacArthur Boulevard	Jamboree Road to Fairchild Road	69.7	69.9	0.2	1.5	No
316	MacArthur Boulevard	Fairchild Road to University Drive	69.7	69.9	0.2	1.5	No
317	MacArthur Boulevard	Fitch to Red Hill Avenue	70.4	70.5	0.1	1.5	No
318	MacArthur Boulevard	Michelson Drive to Douglas	71.3	72.1	0.8	1.5	No
319	MacArthur Boulevard	Douglas to Campus Drive	71.3	72.1	0.8	1.5	No
320	MacArthur Boulevard	Skypark to Main Street	69.0	69.5	0.5	1.5	No
321	MacArthur Boulevard	Redhill Avenue to Skypark	68.0	68.3	0.3	1.5	No
322	MacArthur Boulevard	Birch Street to Jamboree Road	66.5	67.0	0.5	1.5	No
323	MacArthur Boulevard	Campus Drive to Birch Street	68.5	69.3	0.8	1.5	No
324	Main Street	Gillette Avenue to Von Karman Avenue	69.4	70.7	1.3	1.5	No
325	Main Street	MacArthur Boulevard to Mercantile	69.4	70.2	0.8	1.5	No
326	Main Street	Executive Park to MacArthur Boulevard	67.7	68.4	0.7	1.5	No
327	Main Street	Von Karman Avenue to Cartwright	67.2	68.3	1.1	1.5	No
328	Main Street	McDermott to Red Hill Avenue	67.9	68.1	0.2	1.5	No
329	Main Street	Red Hill Avenue to Executive Circle	67.7	68.0	0.3	1.5	No
330	Main Street	Jamboree Road to Union	67.4	67.8	0.4	1.5	No
331	Main Street	Culver Drive to West Yale Loop	67.0	67.1	0.1	1.5	No
332	Main Street	Siglo to Jamboree Road	67.2	67.7	0.5	1.5	No
333	Main Street	Veneto to Harvard Avenue	67.4	67.5	0.1	1.5	No
334	Main Street	Paseo Westpark to Culver Drive	66.2	66.4	0.2	1.5	No
335	Main Street	Harvard Avenue to San Mateo	66.2	66.4	0.2	1.5	No
336	Marine Way	Sand Canyon Avenue to Ridge Valley (O Street)	67.8	72.3	4.5	1.5	Yes
337	Marine Way	Alton Parkway to Bake Parkway	0.0	69.3	69.3	5.0	Yes
338	Marine Way	Lynx to Barranca Parkway	0.0	69.3	69.3	5.0	Yes
339	Marine Way	County Access to Treble	59.3	68.4	9.1	5.0	Yes
340	Marine Way	Ridge Valley (O Street) to Skyhawk	62.0	68.2	6.2	3.0	Yes
341	Marine Way	Skyhawk to County Access	59.3	67.1	7.8	5.0	Yes
342	Marine Way	Barranca Parkway to Alton Parkway	52.7	66.8	14.1	5.0	Yes
343	Marine Way	Treble to Lynx	0.0	66.4	66.4	5.0	Yes
344	McGaw Avenue	Von Karman Avenue to Jamboree Road	62.2	64.3	2.1	3.0	No

Table 13

345	McGaw Avenue	Red Hill Avenue to Von Karman Avenue	62.1	64.1	2.0	3.0	No
346	McGaw Avenue	Daimler to Red Hill Avenue	61.0	62.4	1.4	3.0	No
347	McGaw Avenue	Jamboree Road to Murphy Avenue	57.6	59.3	1.7	5.0	No
348	Meadowood	Culver Drive to Canyonwood	59.5	59.8	0.3	5.0	No
349	Meridian	Spectrum to Alton Parkway	54.7	55.3	0.6	5.0	No
350	Meridian	Alton Parkway to Gateway Boulevard	53.5	54.6	1.1	5.0	No
351	Merit	Irvine Boulevard to Cadence	59.3	57.9	-1.4	5.0	No
352	Michelson Drive	Riparian to Harvard Avenue	66.7	68.3	1.6	1.5	Yes
353	Michelson Drive	Almond Tree Lane to Yale Avenue	66.3	67.1	0.8	1.5	No
354	Michelson Drive	Von Karman Avenue to Obsidian	66.7	68.0	1.3	1.5	No
355	Michelson Drive	Parkside to Culver Drive	66.2	67.8	1.6	1.5	Yes
356	Michelson Drive	Gillman to Seton/Sandburg Way	66.3	66.8	0.5	1.5	No
357	Michelson Drive	Carlson to Prince	65.4	67.3	1.9	1.5	Yes
358	Michelson Drive	MacArthur Boulevard to Dupont Drive	66.7	67.3	0.6	1.5	No
359	Michelson Drive	Harvard Avenue to Parkside	66.2	66.8	0.6	1.5	No
360	Michelson Drive	Bixby to Von Karman Avenue	64.9	66.7	1.8	3.0	No
361	Michelson Drive	Jamboree Road to Carlson	68.0	69.6	1.6	1.5	Yes
362	Michelson Drive	Teller to Jamboree Road	68.7	69.6	0.9	1.5	No
363	Michelson Drive	Jordan East to University Drive	66.6	66.9	0.3	1.5	No
364	Michelson Drive	Culver Drive to Angell	65.9	66.2	0.3	1.5	No
365	Modjeska (A Street)	Portola Springs to Irvine Boulevard	70.7	71.7	1.0	1.5	No
366	Modjeska (A Street)	South of Irvine Boulevard	61.4	61.1	-0.3	3.0	No
367	Muirlands Boulevard	Bake Parkway to City Limits	66.4	67.1	0.7	1.5	No
368	Muirlands Boulevard	Alton Parkway to Sterling	66.1	66.3	0.2	1.5	No
369	Muirlands Boulevard	Wrigley to Bake Parkway	66.1	66.3	0.2	1.5	No
370	Newport Coast Drive	SR-73 NB Off-Ramp to Turtle Ridge	65.9	66.6	0.7	1.5	No
371	Newport Coast Drive	Turtle Crest to Bonita Canyon Drive	65.0	65.1	0.1	1.5	No
372	Nightmist	Sand Canyon Avenue to Tulip (Road C)	60.8	61.9	1.1	3.0	No
373	Northwood	Yale Avenue to Savannah	62.3	62.5	0.2	3.0	No
374	Northwood	Goldrush to Yale Avenue	60.5	61.5	1.0	3.0	No
375	Oak Canyon Drive	Valley Oak Drive to Sand Canyon Avenue	66.2	69.2	3.0	1.5	Yes
376	Pacifica	Gateway to Barranca Parkway	63.3	65.2	1.9	3.0	No
377	Pacifica	Alton Parkway to Gateway	61.8	64.0	2.2	3.0	No
378	Pacifica	Irvine Center Drive to Fortune Drive (Spectrum Center Drive)	61.7	62.7	1.0	3.0	No
379	Pacifica	Meridian to Alton Parkway	58.1	60.8	2.7	5.0	No

Table 13

380	Park Place	Christamon South to Yale Avenue	56.8	57.0	0.2	5.0	No
381	Portola Parkway	Bee Canyon Access Road to Sand Canyon Avenue	70.3	71.5	1.2	1.5	No
382	Portola Parkway	Jeffrey Road to Bee Canyon Access Road	70.3	71.5	1.2	1.5	No
383	Portola Parkway	Arrowhead to Ridge Valley Parkway	69.6	71.4	1.8	1.5	Yes
384	Portola Parkway	Sand Canyon Avenue to Arrowhead	69.6	71.0	1.4	1.5	No
385	Portola Parkway	Portola Springs to SR-241 SB Off-Ramp	65.5	70.1	4.6	1.5	Yes
386	Portola Parkway	Gatepark to Culver Drive	69.6	70.6	1.0	1.5	No
387	Portola Parkway	ETC-6 (SR-261) NB Off-Ramp to Gatepark	69.6	70.5	0.9	1.5	No
388	Portola Parkway	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	69.6	70.4	0.8	1.5	No
389	Portola Parkway	Jamboree Road to Bellevue	69.6	70.4	0.8	1.5	No
390	Portola Parkway	Bellevue to ETC-6 (SR-261) SB Off-Ramp	69.6	70.3	0.7	1.5	No
391	Portola Parkway	Yale Avenue to Jeffrey Road	68.6	70.1	1.5	1.5	Yes
392	Portola Parkway	Culver Drive to Yale Avenue	68.6	69.6	1.0	1.5	No
393	Portola Parkway	Silverado to Portola Springs	66.5	68.5	2.0	1.5	Yes
394	Pusan	Irvine Boulevard to Cadence	54.0	56.2	2.2	5.0	No
395	Quail Hill Parkway	Shady Canyon Drive to Passage	67.3	67.4	0.1	1.5	No
396	Quail Hill Parkway	East Knollcrest to Laguna Canyon Road	64.8	65.5	0.7	3.0	No
397	Quassar Drive (Spectrum)	Irvine Center Drive to Spectrum Center Drive (Fortune)	54.4	54.8	0.4	5.0	No
398	Red Hill Avenue	MacArthur Boulevard to McGaw Avenue	70.8	71.5	0.7	1.5	No
399	Red Hill Avenue	I-405 Over Crossing to Main Street	69.6	70.1	0.5	1.5	No
400	Red Hill Avenue	Alton Parkway to Deere Avenue	69.5	70.0	0.5	1.5	No
401	Red Hill Avenue	McGaw Avenue to Alton Parkway	69.3	69.9	0.6	1.5	No
402	Red Hill Avenue	Deere Avenue to Barranca Parkway	69.3	69.8	0.5	1.5	No
403	Red Hill Avenue	Skypark East to MacArthur Boulevard	70.2	71.3	1.1	1.5	No
404	Red Hill Avenue	Main Street to Skypark East	69.6	70.6	1.0	1.5	No
405	Research Drive	Hubble to Bake Parkway	65.4	69.5	4.1	1.5	Yes
406	Research Drive	Scientific to Lake Forest Drive	65.6	67.4	1.8	1.5	Yes
407	Research Drive	Bake Parkway to Muller	66.2	66.6	0.4	1.5	No
408	Research Drive	Irvine Center Drive to Bunsen	64.9	65.6	0.7	3.0	No
409	Ridge Valley (O Street)	Irvine Boulevard to Trabuco Road (Great Park Boulevard)	65.5	67.3	1.8	1.5	Yes
410	Ridge Valley (O Street)	Portola Parkway to Irvine Boulevard	65.9	66.4	0.5	1.5	No
411	Ridge Valley (O Street)	Trabuco Road (Great Park Boulevard) to Marine Way	65.8	66.0	0.2	1.5	No
412	Ridge Valley (O Street)	Ranchland to Portola Parkway	58.0	58.1	0.1	5.0	No
413	Ridgeline Drive	Concordia East to University Drive	67.7	68.7	1.0	1.5	No
414	Ridgeline Drive	Turtle Rock Drive to San Simeon	67.7	68.4	0.7	1.5	No

Table 13

415	Rockfield Avenue	Whatney to McLaren	66.3	67.6	1.3	1.5	No
416	Rockfield Avenue	Bake Parkway to Whatney	62.5	64.1	1.6	3.0	No
417	Rockfield Avenue	Thomas to Bake Parkway	62.5	63.1	0.6	3.0	No
418	Roosevelt	Jeffrey Road to Vision	65.2	66.5	1.3	1.5	No
419	Roosevelt	Yale Avenue to Van Buren	67.9	68.2	0.3	1.5	No
420	Roosevelt	Vision to Bay Tree	64.5	66.2	1.7	3.0	No
421	Roosevelt	Nimitz to Jeffrey Road	65.2	65.9	0.7	1.5	No
422	Roosevelt	Tulip (Road C) to Sand Canyon Avenue	63.7	65.6	1.9	3.0	No
423	Royal Oak	Alton Parkway to Eaglecreek	63.8	64.0	0.2	3.0	No
424	Sand Canyon Avenue	Oak Canyon Drive to Burt Road	70.7	72.1	1.4	1.5	No
425	Sand Canyon Avenue	Irvine Center Drive to Oak Canyon Drive	70.6	71.9	1.3	1.5	No
426	Sand Canyon Avenue	I-405 NB Off-Ramp to Alton Parkway	73.6	74.6	1.0	1.5	No
427	Sand Canyon Avenue	Burt Road to I-5 SB Off-Ramp	71.2	72.7	1.5	1.5	Yes
428	Sand Canyon Avenue	Marine to I-5 NB Off-Ramp	72.7	74.6	1.9	1.5	Yes
429	Sand Canyon Avenue	Trabuco Road to Towngate	70.0	71.1	1.1	1.5	No
430	Sand Canyon Avenue	Barranca Parkway to Waterworks	69.2	70.8	1.6	1.5	Yes
431	Sand Canyon Avenue	I-5 SB Off-Ramp to Marine	72.7	73.8	1.1	1.5	No
432	Sand Canyon Avenue	Hospital to Barranca Parkway	69.3	70.6	1.3	1.5	No
433	Sand Canyon Avenue	Nightmist to Roosevelt	73.3	73.5	0.2	1.5	No
434	Sand Canyon Avenue	I-405 SB Off-Ramp to I-405 NB Off-Ramp	72.4	73.5	1.1	1.5	No
435	Sand Canyon Avenue	I-5 NB Off-Ramp to Nightmist	73.2	73.5	0.3	1.5	No
436	Sand Canyon Avenue	Towngate to Irvine Boulevard	69.3	70.4	1.1	1.5	No
437	Sand Canyon Avenue	Waterworks to Irvine Center Drive	69.2	70.2	1.0	1.5	No
438	Sand Canyon Avenue	Irvine Boulevard to Portola Parkway	68.0	69.2	1.2	1.5	No
439	Sand Canyon Avenue	Roosevelt to Trabuco Road	72.6	72.8	0.2	1.5	No
440	Sand Canyon Avenue	Alton Parkway to Hospital	69.7	70.6	0.9	1.5	No
441	Sand Canyon/Shady Canyon	Quail Hill Parkway to I-405 SB Ramps	71.3	71.7	0.4	1.5	No
442	Scientific Way	Irvine Center Drive to Wald	54.6	55.0	0.4	5.0	No
443	Shady Canyon Drive	Culver Drive/Bonita Canyon Drive to Cloverfield	68.6	69.2	0.6	1.5	No
444	Shady Canyon Drive	Bommer Canyon Road to Sunnyhill	67.1	67.5	0.4	1.5	No
445	Skyhawk	Great Park Boulevard to Marine Way	52.8	59.6	6.8	5.0	Yes
446	Southwood	Yale Avenue to Colt	60.5	60.5	0.0	3.0	No
447	Southwood	Challenger to Yale Avenue	59.9	60.2	0.3	5.0	No
448	Spectrum Center Drive (Fortune Drive)	Pacifica to Quassar Drive (Spectrum )	61.4	61.9	0.5	3.0	No
449	Spectrum Center Drive (Fortune Drive)	Quassar Drive (Spectrum ) to Gatewayb	62.0	62.4	0.4	3.0	No



Table 13

450	Sunnyhill	Shady Canyon Drive to Turtle Rock Drive	56.9	57.6	0.7	5.0	No
451	Technology Drive	Barranca Parkway to Alton Parkway	67.0	70.6	3.6	1.5	Yes
452	Technology Drive	Old Laguna Canyon Road to I-5/SR-133 Undercrossing	63.2	69.2	6.0	3.0	Yes
453	Technology Drive	I-5/SR-133 to Barranca Parkway	62.8	69.1	6.3	3.0	Yes
454	Technology Drive	Ada to Alton Parkway	57.8	63.0	5.2	5.0	Yes
455	Toledo Way	Bake Parkway to City Limits	65.5	65.7	0.2	1.5	No
456	Toledo Way	Goodyear to Bake Parkway	64.5	64.7	0.2	3.0	No
457	Toledo Way	Alton Parkway to Parker	63.9	64.3	0.4	3.0	No
458	Trabuco Road	Keystone to Sand Canyon Avenue	66.7	67.1	0.4	1.5	No
459	Trabuco Road	Jeffrey Road to Keystone	66.7	66.9	0.2	1.5	No
460	Trabuco Road	Culver Drive to I-5 NB Off-Ramp	66.3	66.7	0.4	1.5	No
461	Trabuco Road	Monroe to Yale Avenue	66.3	66.6	0.3	1.5	No
462	Trabuco Road	I-5 NB Off-Ramp to Monroe	66.3	66.5	0.2	1.5	No
463	Trabuco Road	Yale Avenue to Remington	65.7	66.2	0.5	1.5	No
464	Trabuco Road	Remington to Jeffrey Road	65.7	66.0	0.3	1.5	No
465	Turtle Ridge Drive	Federation Way to Bonita Canyon	0.0	68.8	68.8	5.0	Yes
466	Turtle Rock Drive	Ridgeline to Willowleaf	66.9	67.8	0.9	1.5	No
467	Turtle Rock Drive	Silkwood to Sunnyhill	67.0	67.7	0.7	1.5	No
468	Turtle Rock Drive	Canyon Park to Ridgeline	66.7	67.0	0.3	1.5	No
469	Turtle Rock Drive	Sunnyhill to Southernwood	63.9	64.0	0.1	3.0	No
470	Turtle Rock Drive	Campus Drive to Hillgate	63.8	64.1	0.3	3.0	No
471	Turtle Rock Drive	Paseo Segovia to Campus Drive	65.3	65.4	0.1	1.5	No
472	University Drive	Golden Glow to Yale Avenue	72.2	72.9	0.7	1.5	No
473	University Drive	Ridgeline to Michelson Drive	72.1	72.5	0.4	1.5	No
474	University Drive	Culver Drive to Golden Glow	72.1	72.8	0.7	1.5	No
475	University Drive	Yale Avenue to Ridgeline	72.0	72.3	0.3	1.5	No
476	University Drive	Michelson Drive to I-405 SB Off-Ramp	72.3	72.7	0.4	1.5	No
477	University Drive	Mesa to Campus Drive	73.3	74.5	1.2	1.5	No
478	University Drive	MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	73.3	74.4	1.1	1.5	No
479	University Drive	California Avenue to Mesa	73.3	74.3	1.0	1.5	No
480	University Drive	Campus Drive to Harvard Avenue	69.5	70.6	1.1	1.5	No
481	University Drive	SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	70.4	71.5	1.1	1.5	No
482	University Drive	SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps	69.2	70.1	0.9	1.5	No
483	University Drive	San Joaquin to Culver Drive	68.7	69.7	1.0	1.5	No
484	University Drive	Harvard Avenue to San Joaquin	68.7	69.7	1.0	1.5	No

Table 13

485	Valley Oak Drive	Hawkcreek to Barranca Parkway	63.0	68.0	5.0	3.0	Yes
486	Valley Oak Drive	Irvine Center Drive to Oak Canyon Drive	65.2	69.0	3.8	1.5	Yes
487	Valley Oak Drive	Barranca Parkway to Irvine Center Drive	62.9	66.7	3.8	3.0	Yes
488	Valley Oak Drive	Alton Parkway to Hawkcreek	63.8	64.8	1.0	3.0	No
489	Von Karman Avenue	Marriott to Morse Avenue	68.9	70.9	2.0	1.5	Yes
490	Von Karman Avenue	Michelson Drive to Quartz	68.8	70.7	1.9	1.5	Yes
491	Von Karman Avenue	McGaw Avenue to Alton Parkway	69.3	70.7	1.4	1.5	No
492	Von Karman Avenue	Alton Parkway to Barranca Parkway	68.4	70.3	1.9	1.5	Yes
493	Von Karman Avenue	Main Street to Anchor	69.2	70.6	1.4	1.5	No
494	Von Karman Avenue	Anchor to McGaw Avenue	69.2	70.4	1.2	1.5	No
495	Von Karman Avenue	Morse to Main Street	69.2	70.2	1.0	1.5	No
496	Von Karman Avenue	Martin to Dupont Drive	67.8	69.5	1.7	1.5	Yes
497	Von Karman Avenue	Campus Drive to Martin	67.8	69.5	1.7	1.5	Yes
498	Von Karman Avenue	Dupont Drive to Michelson Drive	67.8	69.5	1.7	1.5	Yes
499	Walnut Avenue	Jeffrey Road to I-5 SB Off-Ramp	68.9	70.9	2.0	1.5	Yes
500	Walnut Avenue	Myford Road to Jamboree Road SB Off-Ramp	68.6	69.1	0.5	1.5	No
501	Walnut Avenue	The Mall Street to Culver Drive	68.2	68.7	0.5	1.5	No
502	Walnut Avenue	Harvard Avenue to The Mall Street	68.2	68.7	0.5	1.5	No
503	Walnut Avenue	Franciscan Street to Ravenwood Street	68.0	68.4	0.4	1.5	No
504	Walnut Avenue	Ravenwood Street to Yale Avenue	68.0	68.4	0.4	1.5	No
505	Walnut Avenue	Culver Drive to Franciscan Street	68.0	68.3	0.3	1.5	No
506	Walnut Avenue	Peters Canyon Road to Harvard Avenue	67.0	67.9	0.9	1.5	No
507	Walnut Avenue	Jamboree Road NB Off-Ramp to Peters Canyon Road	67.0	67.8	0.8	1.5	No
508	Walnut Avenue	Yale Avenue to Kazan Street	66.3	67.1	0.8	1.5	No
509	Walnut Avenue	Wisteria to Jeffrey Road	66.3	67.1	0.8	1.5	No
510	Warner Avenue	Jamboree Road SB Off-ramp to Construction North	69.6	70.2	0.6	1.5	No
511	Warner Avenue	Construction North to Harvard Avenue	67.8	68.6	0.8	1.5	No
512	Warner Avenue	Harvard Avenue to Paseo Westpark	66.1	67.0	0.9	1.5	No
513	Warner Avenue	Santa Ynez to Culver Drive	65.1	66.0	0.9	1.5	No
514	Warner Avenue	Culver Drive to West Yale Loop	64.9	65.7	0.8	3.0	No
515	West Yale Loop	Alton Parkway to Blue Lake North	63.3	64.0	0.7	3.0	No
516	West Yale Loop	Eagle Run to Main Street	63.3	63.8	0.5	3.0	No
517	West Yale Loop	Thunder Run to Yale Avenue	62.7	63.9	1.2	3.0	No
518	West Yale Loop	Main Street to Timber Run	62.7	62.9	0.2	3.0	No
519	West Yale Loop	Yale Avenue to Shorebird	61.8	62.9	1.1	3.0	No

Table 13

520	West Yale Loop	Warner Avenue to Stonecreek South	61.8	62.6	0.8	3.0	No
521	West Yale Loop	Barranca Parkway to Alton Parkway	61.7	62.4	0.7	3.0	No
522	West Yale Loop	Stonecreek North to Warner Avenue	61.8	62.4	0.6	3.0	No
523	West Yale Loop	Birdsong to Barranca Parkway	61.8	62.3	0.5	3.0	No
524	Westwood	Yorktown to Bryan Avenue	63.2	63.6	0.4	3.0	No
525	Westwood	Bryan Avenue to Leaf	61.3	61.5	0.2	3.0	No
526	Yale Avenue	Deerfield Avenue to Winvale Avenue	68.5	68.6	0.1	1.5	No
527	Yale Avenue	Hicks Canyon Drive to Meadowood	67.2	67.3	0.1	1.5	No
528	Yale Avenue	Walnut Avenue to Roosevelt	70.7	71.0	0.3	1.5	No
529	Yale Avenue	Roosevelt to Trabuco Road	66.9	67.0	0.1	1.5	No
530	Yale Avenue	Irvine Center Drive to Deerfield Avenue	66.5	66.9	0.4	1.5	No
531	Yale Avenue	West Yale Loop to Irvine Center Drive	65.0	66.3	1.3	1.5	No
532	Yale Avenue	Winvale Avenue to Karen Ann Lane	65.6	65.7	0.1	1.5	No
533	Yale Avenue	Karen Ann Lane to Walnut Avenue	65.6	65.7	0.1	1.5	No
534	Yale Avenue	Trabuco Road to Southwood	65.1	65.6	0.5	1.5	No
535	Yale Avenue	Southwood to Bryan Avenue	65.1	65.4	0.3	1.5	No
536	Yale Avenue	Northwood to Irvine Boulevard	64.8	65.1	0.3	3.0	No
537	Yale Avenue	Bryan Avenue to Monticello	64.8	65.0	0.2	3.0	No
538	Yale Avenue	Irvine Boulevard to Park Place	64.1	64.3	0.2	3.0	No
539	Yale Avenue	University Drive to Royce	57.9	63.4	5.5	5.0	Yes
540	Yale Court	Arborwood to Portola Parkway	60.0	60.3	0.3	1.5	No

<sup>1</sup> Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.

<sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use.

<sup>3</sup> Does the Project create an incremental noise level increase exceeding the significance criteria?

Table 14

Table 13: Existing and Cumulative Conservative Plan Traffic Noise Level Increases

ID	Road	Segment	CNEL at Receiving Land Use (dBA) <sup>2</sup>				Incremental Noise Level Increase Threshold <sup>3</sup>	
			Existing	Conservative	Cumulative Conservative	Cumulative Increase	Limit	Exceeded?
1	Ada	Barranca Parkway to Marine Way	0.0	70.8	70.8	70.8	5.0	Yes
2	Ada	Alton Parkway to Barranca Parkway	60.3	69.3	69.3	9.0	3.0	Yes
3	Alton Parkway	Enterprise to I-5 NB Off-Ramp	71.3	74.1	74.1	2.8	1.5	Yes
4	Alton Parkway	I-5 NB Off-Ramp to Technology Drive West	72.1	74.8	74.8	2.7	1.5	Yes
5	Alton Parkway	East Yale Loop to Jeffrey Road	71.3	71.8	71.8	0.5	1.5	No
6	Alton Parkway	Gateway Boulevard to Enterprise	69.3	72.0	72.0	2.7	1.5	Yes
7	Alton Parkway	Jeffrey Road to Royal Oak	70.1	70.9	70.9	0.8	1.5	No
8	Alton Parkway	Daimler Street to Red Hill Avenue	63.7	70.7	70.7	7.0	3.0	Yes
9	Alton Parkway	Culver Drive to West Yale Loop	70.4	70.7	70.7	0.3	1.5	No
10	Alton Parkway	West Yale Loop to Lake Road	70.3	70.7	70.7	0.4	1.5	No
11	Alton Parkway	Technology Drive West to Ada	70.2	72.6	72.6	2.4	1.5	Yes
12	Alton Parkway	Creek Road to East Yale Loop	70.1	70.6	70.7	0.6	1.5	No
13	Alton Parkway	Red Hill Avenue to Von Karman Avenue	68.1	70.5	70.6	2.5	1.5	Yes
14	Alton Parkway	Lake Road to Creek Road	70.1	70.4	70.4	0.3	1.5	No
15	Alton Parkway	Telemetry to Banting	69.0	70.4	70.5	1.5	1.5	Yes
16	Alton Parkway	Irvine Boulevard to Commercentre	70.3	70.8	70.8	0.5	1.5	No
17	Alton Parkway	Jenner to Telemetry	69.0	70.4	70.4	1.4	1.5	No
18	Alton Parkway	Irvine Center Drive to Gateway Boulevard	68.6	71.2	71.3	2.7	1.5	Yes
19	Alton Parkway	Sand Canyon Avenue to Hospital	72.1	73.7	73.7	1.6	1.5	Yes
20	Alton Parkway	Laguna Canyon Road to Jenner	69.0	70.3	70.3	1.3	1.5	No
21	Alton Parkway	Technology Drive East to Barranca Pkwy/Muirlands Blvd	69.1	71.2	71.2	2.1	1.5	Yes
22	Alton Parkway	Royal Oak to Valley Oak Drive	69.4	70.1	70.1	0.7	1.5	No
23	Alton Parkway	Banting to Pacifica	68.4	70.0	70.1	1.7	1.5	Yes
24	Alton Parkway	Barranca Pkwy/Muirlands Blvd to Jeronimo Road	70.1	70.9	71.0	0.9	1.5	No
25	Alton Parkway	Ada to Technology Drive East	69.2	70.7	70.7	1.5	1.5	Yes
26	Alton Parkway	Von Karman Avenue to Jamboree Road	68.7	69.7	69.8	1.1	1.5	No
27	Alton Parkway	Jeronimo Road to Hughes	69.8	69.9	69.9	0.1	1.5	No
28	Alton Parkway	Hughes to Morgan	69.5	69.8	69.8	0.3	1.5	No
29	Alton Parkway	Morgan to Toledo Way	68.8	69.1	69.1	0.3	1.5	No
30	Alton Parkway	San Marino to Culver Drive	68.8	69.2	69.2	0.4	1.5	No
31	Alton Parkway	Jamboree Road to Murphy Avenue	68.0	69.0	69.2	1.2	1.5	No

Table 14

32	Alton Parkway	Hospital to Laguna Canyon Road	70.7	72.0	72.1	1.4	1.5	No
33	Alton Parkway	Valley Oak Drive to Sand Canyon Avenue	71.1	71.8	71.9	0.8	1.5	No
34	Alton Parkway	Murphy Avenue to Harvard Avenue	68.1	68.8	69.0	0.9	1.5	No
35	Alton Parkway	Foster to Irvine Boulevard	68.0	68.7	68.7	0.7	1.5	No
36	Alton Parkway	Fairbanks to Foster	67.5	68.5	68.6	1.1	1.5	No
37	Alton Parkway	Toledo Way to Berteia	68.2	68.4	68.4	0.2	1.5	No
38	Alton Parkway	Pacifica to Meridian	69.7	71.7	71.7	2.0	1.5	Yes
39	Alton Parkway	Berteia to Fairbanks	68.1	68.3	68.3	0.2	1.5	No
40	Alton Parkway	Meridian to Irvine Center Drive	66.6	68.3	68.3	1.7	1.5	Yes
41	Alton Parkway	Paseo Westpark to San Marino	67.9	68.3	68.3	0.4	1.5	No
42	Alton Parkway	Harvard Avenue to Paseo Westpark	66.9	67.7	67.9	1.0	1.5	No
43	Astor	Lynx to Fairbanks	57.5	67.1	67.1	9.6	5.0	Yes
44	Astor	Cadence to Lynx	0.0	65.9	65.9	65.9	5.0	Yes
45	Bake Parkway	I-5 NB Off-Ramp to Rockfield Boulevard	75.4	76.7	76.7	1.3	1.5	No
46	Bake Parkway	Muirlands Boulevard to Jeronimo Road	72.7	73.0	73.1	0.4	1.5	No
47	Bake Parkway	Rockfield Boulevard to Muirlands Boulevard	74.7	75.1	75.1	0.4	1.5	No
48	Bake Parkway	Jeronimo Road to Toledo Way	71.9	72.1	72.2	0.3	1.5	No
49	Bake Parkway	Toledo Way to Cromwell	71.5	71.7	71.7	0.2	1.5	No
50	Bake Parkway	Cromwell to Irvine Boulevard	71.4	71.6	71.6	0.2	1.5	No
51	Bake Parkway	Research Drive to I-5 SB Off-Ramp	68.5	69.6	69.7	1.2	1.5	No
52	Bake Parkway	Irvine Center Drive to Research Drive	64.1	64.9	65.1	1.0	3.0	No
53	Bake Parkway	Lake Forest Drive to Irvine Center Drive	61.9	63.4	63.7	1.8	3.0	No
54	Banting	Alton Parkway to Barranca Parkway	57.6	60.3	60.3	2.7	5.0	No
55	Barranca Parkway	Pacifica to Irvine Center Drive	70.5	73.3	73.3	2.8	1.5	Yes
56	Barranca Parkway	Banting to Pacifica	70.7	72.8	72.8	2.1	1.5	Yes
57	Barranca Parkway	I-5 HOV Ramp to Technology Drive West	69.8	73.0	73.0	3.2	1.5	Yes
58	Barranca Parkway	Technology Drive West to Ada	70.4	72.7	72.7	2.3	1.5	Yes
59	Barranca Parkway	Irvine Center Drive to I-5 HOV Ramp	69.3	72.6	72.6	3.3	1.5	Yes
60	Barranca Parkway	Culver Drive to West Yale Loop	71.9	72.3	72.3	0.4	1.5	No
61	Barranca Parkway	East Yale Loop to Jeffrey Road	71.7	72.2	72.3	0.6	1.5	No
62	Barranca Parkway	West Yale Loop to Lake Road	71.6	72.1	72.1	0.5	1.5	No
63	Barranca Parkway	Ada to Alton Parkway	70.2	72.1	72.2	2.0	1.5	Yes
64	Barranca Parkway	Lake Road to Creek Road	71.2	71.8	71.8	0.6	1.5	No
65	Barranca Parkway	Red Hill Avenue to Armstrong Avenue	73.3	74.7	74.8	1.5	1.5	Yes
66	Barranca Parkway	Discovery/Herchel to Banting	69.7	71.6	71.7	2.0	1.5	Yes
67	Barranca Parkway	Lyon to East Yale Loop	71.0	71.6	71.6	0.6	1.5	No
68	Barranca Parkway	Creek Road to Lyon	70.9	71.5	71.5	0.6	1.5	No

Table 14

69	Barranca Parkway	Von Karman Avenue to Jamboree Road	71.5	72.8	72.8	1.3	1.5	No
70	Barranca Parkway	Sand Canyon Avenue to Laguna Canyon Road	68.5	71.1	71.1	2.6	1.5	Yes
71	Barranca Parkway	Armstrong Avenue to Von Karman Avenue	72.0	72.5	72.5	0.5	1.5	No
72	Barranca Parkway	Valley Oak Drive to Sand Canyon Avenue	69.1	70.8	70.8	1.7	1.5	Yes
73	Barranca Parkway	Jamboree Road to Construction Circle	70.1	71.2	71.2	1.1	1.5	No
74	Barranca Parkway	Santa Rosa to Culver Drive	69.8	71.0	71.1	1.3	1.5	No
75	Barranca Parkway	FedEx to Discovery/Herchel	68.8	70.5	70.6	1.8	1.5	Yes
76	Barranca Parkway	Jeffrey Road to Valley Oak Drive	68.3	70.4	70.5	2.2	1.5	Yes
77	Barranca Parkway	Laguna Canyon Road to FedEx	68.8	70.4	70.4	1.6	1.5	Yes
78	Barranca Parkway	Pullman Street to Red Hill Avenue	72.7	73.7	73.6	0.9	1.5	No
79	Barranca Parkway	Construction Circle to Fire Station	69.4	70.6	70.6	1.2	1.5	No
80	Barranca Parkway	Fire Station to Harvard Avenue	69.4	70.6	70.6	1.2	1.5	No
81	Barranca Parkway	Paseo Westpark to Santa Rosa	69.3	70.6	70.6	1.3	1.5	No
82	Barranca Parkway	Harvard Avenue to Paseo Westpark	69.2	70.2	70.3	1.1	1.5	No
83	Bay Tree	Trabuco Road to Roosevelt	56.1	57.1	57.1	1.0	5.0	No
84	Beacon	Ridge Valley to Benchmark	0.0	59.7	59.7	59.7	5.0	Yes
85	Benchmark (LN Street)	Ridge Valley (O Street) to Bosque	0.0	56.5	56.5	56.5	5.0	Yes
86	Bison Avenue	SR-73 NB Off-Ramp to California Avenue	68.6	69.6	69.7	1.1	1.5	No
87	Bonita Canyon Drive	MacArthur Boulevard to SR-73	70.0	70.3	70.3	0.3	1.5	No
88	Bonita Canyon Drive	Turtle Ridge to Shady Canyon Drive	67.5	68.6	68.6	1.1	1.5	No
89	Bonita Canyon Drive	Newport Coast Drive to Turtle Ridge	67.5	68.2	68.2	0.7	1.5	No
90	Bonita Canyon Drive	SR-73 NB Off-Ramp to Newport Coast Drive	67.5	68.0	68.1	0.6	1.5	No
91	Bosque	Cadence to Great Park Boulevard	63.0	65.2	65.2	2.2	3.0	No
92	Bosque	Irvine Boulevard to Benchmark (LN Street)	59.7	63.6	63.6	3.9	5.0	No
93	Bosque	Benchmark to Cadence	59.7	63.2	63.2	3.5	5.0	No
94	Bosque	Great Park Boulevard to Beacon	0.0	56.8	56.8	56.8	5.0	Yes
95	Bosque	Beacon to S 5th Street	0.0	56.2	56.2	56.2	5.0	Yes
96	Bryan Avenue	Jamboree Road to Market Place	68.7	69.0	69.1	0.4	1.5	No
97	Bryan Avenue	Market Place to El Camino Real	68.7	68.9	68.8	0.1	1.5	No
98	Bryan Avenue	Rubicon to Culver Drive	68.7	68.8	68.9	0.2	1.5	No
99	Bryan Avenue	El Camino Real to Rubicon	68.7	68.8	68.9	0.2	1.5	No
100	Bryan Avenue	Eastwood to Jeffrey Road	65.8	67.1	67.2	1.4	1.5	No
101	Bryan Avenue	Westwood to Yale Avenue	66.3	66.8	66.8	0.5	1.5	No
102	Bryan Avenue	Culver Drive to Westwood	66.3	66.7	66.7	0.4	1.5	No
103	Bryan Avenue	Yale Avenue to Eastwood	65.8	66.7	66.8	1.0	1.5	No
104	Cadence	Pusan to Chinon	64.5	65.6	65.6	1.1	3.0	No
105	Cadence	Bosque to Pusan	65.7	65.3	65.3	-0.4	1.5	No

Table 14

106	Cadence	Ridge Valley (O Street) to Bosque	62.6	64.0	64.0	1.4	3.0	No
107	Cadence	Chinon to Merit	62.6	62.3	62.4	-0.2	3.0	No
108	Cadence	Merit to Astor	0.0	59.4	59.4	59.4	5.0	Yes
109	California Avenue	University Drive to Academy Way	64.3	66.2	67.3	3.0	3.0	Yes
110	California Avenue	Campus Drive to Harvard Avenue	63.2	64.2	64.2	1.0	3.0	No
111	California Avenue	Theory to Bison Avenue	63.1	63.9	64.0	0.9	3.0	No
112	Campus Drive	Carlson Avenue to University Drive	70.9	73.2	73.3	2.4	1.5	Yes
113	Campus Drive	University Drive to Bridge Road	70.1	71.8	71.8	1.7	1.5	Yes
114	Campus Drive	Jamboree Road to Carlson Avenue	69.0	71.5	71.6	2.6	1.5	Yes
115	Campus Drive	Stanford Court to Berkeley Avenue	70.1	71.1	71.1	1.0	1.5	No
116	Campus Drive	California Avenue to Culver Drive	68.9	70.9	70.9	2.0	1.5	Yes
117	Campus Drive	Berkeley Avenue to Cornell	68.9	70.0	69.9	1.0	1.5	No
118	Campus Drive	Martin to Von Karman Avenue	67.5	69.1	69.2	1.7	1.5	Yes
119	Campus Drive	Culver Drive to Paseo Montoya (Turtle Rock Drive)	68.5	68.7	68.7	0.2	1.5	No
120	Campus Drive	Von Karman Avenue to Teller Avenue	66.8	68.4	68.5	1.7	1.5	Yes
121	Campus Drive	MacArthur Boulevard to Martin	67.5	68.2	68.3	0.8	1.5	No
122	Campus Drive	Teller Avenue to Jamboree Road	66.8	67.5	67.6	0.8	1.5	No
123	Carlson Avenue	Michelson Drive to Campus Drive	64.5	67.9	67.9	3.4	3.0	Yes
124	Chinon	Irvine Boulevard to Cadence	56.6	58.8	58.8	2.2	5.0	No
125	Creek Road	Alton Parkway to Barranca Parkway	55.3	56.3	56.3	1.0	5.0	No
126	Culver Drive	Michelson Drive to I-405 SB Off-Ramp	73.4	74.0	73.9	0.5	1.5	No
127	Culver Drive	I-405 SB Off-Ramp to I-405 NB Off Ramp	73.4	73.9	73.8	0.4	1.5	No
128	Culver Drive	I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)	73.7	73.9	73.9	0.2	1.5	No
129	Culver Drive	Scottsdale Drive to I-5 SB Off- Ramp	73.7	73.8	73.8	0.1	1.5	No
130	Culver Drive	I-405 NB Off-Ramp to San Leandro	73.4	73.6	73.6	0.2	1.5	No
131	Culver Drive	San Leandro to Main Street	73.2	73.3	73.3	0.1	1.5	No
132	Culver Drive	Harvard Avenue to University Drive	72.7	73.4	73.4	0.7	1.5	No
133	Culver Drive	Trabuco Road to Farwell Avenue	74.1	74.2	74.2	0.1	1.5	No
134	Culver Drive	Alton Parkway to Barranca Parkway	72.9	73.2	73.2	0.3	1.5	No
135	Culver Drive	Main Street to Alton Parkway	72.7	73.1	73.1	0.4	1.5	No
136	Culver Drive	Warner Avenue to Irvine Center Drive	72.7	73.0	73.0	0.3	1.5	No
137	Culver Drive	Walnut Avenue to Scottsdale Dive	72.6	72.9	72.8	0.2	1.5	No
138	Culver Drive	Barranca Parkway to Warner Avenue	72.6	72.8	72.9	0.3	1.5	No
139	Culver Drive	Shady Canyon Drive to Palo Verde	71.4	72.0	72.0	0.6	1.5	No
140	Culver Drive	Deerfield Avenue to Walnut Avenue	72.3	72.5	72.5	0.2	1.5	No
141	Culver Drive	Sandburg Way to Michelson Drive	71.9	72.5	72.5	0.6	1.5	No
142	Culver Drive	Irvine Center Drive to Deerfield Avenue	72.1	72.4	72.4	0.3	1.5	No

Table 14

143	Culver Drive	Palo Verde to Campus Drive	71.4	71.6	71.6	0.2	1.5	No
144	Culver Drive	University Drive to Sandburg Way	71.5	72.2	72.2	0.7	1.5	No
145	Culver Drive	Farwell Avenue to Bryan Avenue	72.8	73.2	73.2	0.4	1.5	No
146	Culver Drive	Campus Drive to High School	71.6	72.1	72.1	0.5	1.5	No
147	Culver Drive	High School to Harvard Avenue	71.6	72.0	72.0	0.4	1.5	No
148	Culver Drive	Bryan Avenue to Florence	71.5	71.8	71.8	0.3	1.5	No
149	Culver Drive	Portola Parkway to Settlers	68.9	71.2	71.2	2.3	1.5	Yes
150	Culver Drive	Florence to Irvine Boulevard	71.3	71.7	71.7	0.4	1.5	No
151	Culver Drive	Irvine Boulevard to Viewpark	70.0	70.5	70.5	0.5	1.5	No
152	Culver Drive	Viewpark to Meadowood	70.0	70.4	70.4	0.4	1.5	No
153	Culver Drive	Settlers to Furrow	0.0	68.5	68.6	68.6	5.0	Yes
154	Culver Drive	Meadowood to Portola Parkway	68.3	69.0	69.0	0.7	1.5	No
155	Discovery Drive	Irvine Center Drive to Laguna Canyon Road	56.6	65.5	65.5	8.9	5.0	Yes
156	Discovery Drive	Waterworks Way to Irvine Center Drive	0.0	63.6	63.6	63.6	5.0	Yes
157	East Yale Loop	Alton Parkway to Witherspoon	64.6	65.6	65.6	1.0	3.0	No
158	East Yale Loop	Osborn Street to Barranca Parkway	64.3	65.4	65.4	1.1	3.0	No
159	East Yale Loop	Yale Avenue to Springbrook South	62.3	65.0	65.0	2.7	3.0	No
160	East Yale Loop	Springbrook North to Alton Parkway	62.3	63.6	63.6	1.3	3.0	No
161	East Yale Loop	Woodspring to Yale Avenue	62.3	62.8	62.9	0.6	3.0	No
162	East Yale Loop	Barranca Parkway to Eastshore	62.3	62.4	62.5	0.2	3.0	No
163	Eastwood	Bryan Avenue to Monticello	59.5	60.8	60.9	1.4	5.0	No
164	Eastwood	Columbus to Bryan Avenue	58.5	58.8	58.9	0.4	5.0	No
165	El Camino Real	Jamboree Road to Alliance (SR-261 Bridge)	66.9	67.1	67.2	0.3	1.5	No
166	El Camino Real North	El Camino Real to Bryan Avenue	62.2	62.4	62.4	0.2	3.0	No
167	Fairbanks	Alton Parkway to Astor	61.3	69.8	69.9	8.6	3.0	Yes
168	Fairbanks	Irvine Boulevard to Alton Parkway	0.0	66.9	66.9	66.9	5.0	Yes
169	Fairchild Road	MacArthur Boulevard to Jamboree Road	63.3	64.0	64.0	0.7	3.0	No
170	Gateway Boulevard	Alton Parkway to Irvine Center Drive	57.0	63.5	63.5	6.5	5.0	Yes
171	Gateway Boulevard	Spectrum Center Drive (Fortune Drive) to Alton Parkway	59.4	62.3	62.2	2.8	5.0	No
172	Gateway Boulevard	Irvine Center Drive to Meridian	56.8	59.2	59.2	2.4	5.0	No
173	Great Park Boulevard	Sand Canyon to Ridge Valley	70.5	74.6	74.6	4.1	1.5	Yes
174	Great Park Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	64.0	70.3	70.4	6.4	3.0	Yes
175	Great Park Boulevard (EB)	Bosque to Skyhawk	0.0	69.0	69.1	69.1	5.0	Yes
176	Great Park Boulevard (WB)	Bosque to Skyhawk	0.0	68.4	68.4	68.4	5.0	Yes
177	Harvard Avenue	University Drive to Michelson Drive	71.2	72.0	72.1	0.9	1.5	No
178	Harvard Avenue	Michelson Drive to Coronado	69.5	70.4	70.5	1.0	1.5	No
179	Harvard Avenue	San Marino to Alton Parkway	69.4	70.2	70.3	0.9	1.5	No



Table 14

180	Harvard Avenue	Coronado to Main Street	69.3	70.1	70.2	0.9	1.5	No
181	Harvard Avenue	San Carlo to San Marino	69.4	70.1	70.2	0.8	1.5	No
182	Harvard Avenue	Main Street to San Carlo	69.3	70.0	70.1	0.8	1.5	No
183	Harvard Avenue	Alton Parkway to San Leon	68.5	68.8	68.6	0.1	1.5	No
184	Harvard Avenue	San Juan to Barranca Parkway	68.5	68.8	68.7	0.2	1.5	No
185	Harvard Avenue	San Leon to San Juan	68.4	68.6	68.6	0.2	1.5	No
186	Harvard Avenue	Irvine Center Drive to Deerfield Avenue	65.5	67.5	67.5	2.0	1.5	Yes
187	Harvard Avenue	Deerfield Avenue to Poplar Street	65.5	67.4	67.4	1.9	1.5	Yes
188	Harvard Avenue	Barranca Parkway to Warner Avenue	67.6	67.9	67.9	0.3	1.5	No
189	Harvard Avenue	Bridge Road to University Drive	67.2	67.9	67.8	0.6	1.5	No
190	Harvard Avenue	Paseo Westpark to Irvine Center Drive	66.1	67.8	67.8	1.7	1.5	Yes
191	Harvard Avenue	Poplar Street to Walnut Avenue	66.8	68.8	68.9	2.1	1.5	Yes
192	Harvard Avenue	California Avenue to Berkeley Avenue	66.1	67.4	67.3	1.2	1.5	No
193	Harvard Avenue	Culver Drive to California Avenue	66.1	67.3	67.3	1.2	1.5	No
194	Harvard Avenue	Berkeley to Bridge Road	66.1	67.2	67.2	1.1	1.5	No
195	Harvard Avenue	Warner Avenue to Paseo Westpark	65.9	66.7	66.8	0.9	1.5	No
196	Hicks Canyon Drive	Delamesa to Yale Avenue	58.2	58.2	58.2	0.0	5.0	No
197	Hornet (5th St)	Ridge Valley (O Street) to Bosque	0.0	57.5	57.5	57.5	5.0	Yes
198	Hubble	Irvine Center Drive to Bunsen	55.5	55.9	56.1	0.6	5.0	No
199	Irvine Boulevard	SR-133 NB Off- Ramp to Ridge Valley (O Street)	72.1	72.2	72.3	0.2	1.5	No
200	Irvine Boulevard	SR-133 SB Off-Ramp to SR-133 NB Off-Ramp	72.0	72.2	72.2	0.2	1.5	No
201	Irvine Boulevard	Sand Canyon to SR-133 SB Off-Ramp	72.9	73.0	73.0	0.1	1.5	No
202	Irvine Boulevard	Merit to Alton	71.4	71.6	71.6	0.2	1.5	No
203	Irvine Boulevard	Journey to Sand Canyon Avenue	71.4	71.6	71.7	0.3	1.5	No
204	Irvine Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	70.9	71.1	71.2	0.3	1.5	No
205	Irvine Boulevard	Pusan Way to Chinon (B Street)	70.8	71.0	71.0	0.2	1.5	No
206	Irvine Boulevard	Palo Lado to Yale Avenue	70.4	71.2	71.3	0.9	1.5	No
207	Irvine Boulevard	Culver Drive to Palo Lado	70.5	71.2	71.3	0.8	1.5	No
208	Irvine Boulevard	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.5	71.1	71.1	0.6	1.5	No
209	Irvine Boulevard	Old Myford Road to Market Place	70.3	71.1	71.2	0.9	1.5	No
210	Irvine Boulevard	Bosque (LY Street) to Modjeska	70.5	71.1	71.2	0.7	1.5	No
211	Irvine Boulevard	Jamboree Road to Old Myford Road	70.3	71.0	71.1	0.8	1.5	No
212	Irvine Boulevard	Market Place to SR-261 SB Off-Ramp	70.3	71.0	71.1	0.8	1.5	No
213	Irvine Boulevard	Jeffrey Road to Groveland	70.6	70.9	71.1	0.5	1.5	No
214	Irvine Boulevard	Bake Parkway to Lake Forest Drive	69.8	70.5	70.6	0.8	1.5	No
215	Irvine Boulevard	Independence Way (The Groves)/ The Groves to Jeffrey Road	70.2	70.7	70.8	0.6	1.5	No
216	Irvine Boulevard	Chinon (B Street) to Merit	70.2	70.5	70.5	0.3	1.5	No

Table 14

217	Irvine Boulevard	SR-261 NB Off-Ramp to Central Park	70.1	70.6	70.7	0.6	1.5	No
218	Irvine Boulevard	Pueblo Norte to Independence Way (The Groves)/ Parkwood	69.9	70.5	70.6	0.7	1.5	No
219	Irvine Boulevard	Yale Avenue to Pueblo Norte	69.9	70.4	70.5	0.6	1.5	No
220	Irvine Boulevard	Modjeska to Pusan Way	70.0	70.2	70.2	0.2	1.5	No
221	Irvine Boulevard	Central Park Avenue to Culver Drive	69.5	70.0	70.0	0.5	1.5	No
222	Irvine Boulevard	Parker to Bake Parkway	69.0	69.6	69.7	0.7	1.5	No
223	Irvine Boulevard	Alton Parkway to Fairbanks	68.4	68.6	68.6	0.2	1.5	No
224	Irvine Center Drive	Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp	71.3	72.7	72.8	1.5	1.5	Yes
225	Irvine Center Drive	Orange Tree to Valley Oak Drive	69.7	72.0	72.0	2.3	1.5	Yes
226	Irvine Center Drive	I-405 SB Off-Ramp to Research	70.9	72.2	72.3	1.4	1.5	No
227	Irvine Center Drive	Irvine Valley College to Orange Tree	69.7	71.9	71.9	2.2	1.5	Yes
228	Irvine Center Drive	Fontaine Avenue to Jeffrey Road	69.5	71.7	71.7	2.2	1.5	Yes
229	Irvine Center Drive	Culver Drive to Deerwood	69.7	71.6	71.6	1.9	1.5	Yes
230	Irvine Center Drive	Deerwood to Yale Avenue	69.6	71.6	71.6	2.0	1.5	Yes
231	Irvine Center Drive	Yale Avenue to Fontaine Avenue	69.4	71.6	71.7	2.3	1.5	Yes
232	Irvine Center Drive	Jeffrey Road to Irvine Valley College	69.7	71.5	71.5	1.8	1.5	Yes
233	Irvine Center Drive	Alton Parkway to Spectrum	68.9	71.3	71.4	2.5	1.5	Yes
234	Irvine Center Drive	Spectrum to Pacifica	68.9	71.3	71.3	2.4	1.5	Yes
235	Irvine Center Drive	Hearthstone to Culver Drive	69.2	71.0	71.0	1.8	1.5	Yes
236	Irvine Center Drive	Charter to Barranca Parkway	68.1	70.9	71.0	2.9	1.5	Yes
237	Irvine Center Drive	Jamboree Road to Harvard Avenue	69.7	70.6	70.6	0.9	1.5	No
238	Irvine Center Drive	Pacifica to Entertainment (Enterprise/Fortune)	69.1	70.7	70.7	1.6	1.5	Yes
239	Irvine Center Drive	Valley Oak Drive to Sand Canyon Avenue	68.1	70.7	70.7	2.6	1.5	Yes
240	Irvine Center Drive	Harvard Avenue to Hearthstone	69.2	70.3	70.3	1.1	1.5	No
241	Irvine Center Drive	Research to Hubble	67.9	69.8	70.0	2.1	1.5	Yes
242	Irvine Center Drive	Barranca Parkway to Gateway Boulevard	66.9	70.1	70.2	3.3	1.5	Yes
243	Irvine Center Drive	Bake Parkway to Muller	67.9	69.7	69.8	1.9	1.5	Yes
244	Irvine Center Drive	Discovery to Charter	67.3	70.2	70.2	2.9	1.5	Yes
245	Irvine Center Drive	Hubble to Bake Parkway	67.8	69.5	69.6	1.8	1.5	Yes
246	Irvine Center Drive	Muller to Tesla	67.7	69.3	69.4	1.7	1.5	Yes
247	Irvine Center Drive	Sand Canyon Avenue to Odyssey	67.6	69.4	69.4	1.8	1.5	Yes
248	Irvine Center Drive	Tesla to Scientific Way	67.1	68.9	69.1	2.0	1.5	Yes
249	Irvine Center Drive	Scientific Way to Lake Forest Drive	67.2	68.7	68.9	1.7	1.5	Yes
250	Irvine Center Drive	Gateway Boulevard to Alton Parkway	66.7	68.8	68.9	2.2	1.5	Yes
251	Irvine Center Drive	Laguna Canyon Road to Discovery	66.8	68.8	68.9	2.1	1.5	Yes
252	Irvine Center Drive	Odyssey to Laguna Canyon Road	66.8	68.8	68.9	2.1	1.5	Yes
253	Irvine Center Drive (Edinger)	Redhill Avenue to Jamboree Road	69.6	71.0	71.1	1.5	1.5	Yes

Table 14

254	Jamboree Road	I-5 SB Off-Ramp to I-5 NB Off-Ramp	74.3	74.5	74.5	0.2	1.5	No
255	Jamboree Road	I-405 SB Off-Ramp to I-405 NB Off Ramp	75.1	75.6	75.7	0.6	1.5	No
256	Jamboree Road	Walnut Avenue to Michelle Drive	73.5	73.9	73.9	0.4	1.5	No
257	Jamboree Road	I-405 NB Off-Ramp to Main Street	76.5	77.0	77.0	0.5	1.5	No
258	Jamboree Road	Michelle Drive to I-5 SB Off-Ramp	73.5	73.6	73.6	0.1	1.5	No
259	Jamboree Road	Main Street to Kelvin Avenue	75.7	76.4	76.4	0.7	1.5	No
260	Jamboree Road	Michelson Drive to I-405 SB Off-Ramp	73.6	74.4	74.4	0.8	1.5	No
261	Jamboree Road	Kelvin Avenue to McGaw Avenue	75.5	76.0	76.1	0.6	1.5	No
262	Jamboree Road	McGaw Avenue to Alton Parkway	75.4	76.0	76.0	0.6	1.5	No
263	Jamboree Road	Birch Street to Campus Drive	72.1	73.0	73.1	1.0	1.5	No
264	Jamboree Road	Dupont Drive to Michelson Drive	73.3	73.9	74.0	0.7	1.5	No
265	Jamboree Road	Alton Parkway to Beckman	75.2	75.6	75.7	0.5	1.5	No
266	Jamboree Road	Fairchild Road to Birch Street	72.2	73.5	73.6	1.4	1.5	No
267	Jamboree Road	Beckman to Barranca Parkway	75.0	75.3	75.3	0.3	1.5	No
268	Jamboree Road	I-5 NB Off-Ramp to El Camino Real	74.9	75.1	75.1	0.2	1.5	No
269	Jamboree Road	Campus Drive to Dupont Drive	72.5	73.2	73.2	0.7	1.5	No
270	Jamboree Road	El Camino Real to West Drive	74.9	75.0	74.9	0.0	1.5	No
271	Jamboree Road	West Drive to Bryan Avenue	74.9	74.9	74.9	0.0	1.5	No
272	Jamboree Road	Bryan Avenue to Irvine Boulevard	74.5	74.6	74.6	0.1	1.5	No
273	Jamboree Road	Koll Center to Fairchild Road	71.7	72.8	72.9	1.2	1.5	No
274	Jamboree Road	MacArthur Boulevard to Koll Center	71.8	72.8	72.8	1.0	1.5	No
275	Jamboree Road	Irvine Boulevard to Portola Parkway	70.0	70.7	70.7	0.7	1.5	No
276	Jamboree Road	Warner Avenue to Edinger Avenue	79.0	79.2	79.2	0.2	1.5	No
277	Jamboree Road	Barranca Parkway to Warner Avenue	78.1	78.3	78.4	0.3	1.5	No
278	Jamboree Road	Edinger Avenue to Walnut Avenue	77.8	78.0	78.0	0.2	1.5	No
279	Jeffrey Road	Walnut Avenue to I-5 NB Off-Ramp	70.9	71.4	71.4	0.5	1.5	No
280	Jeffrey Road	I-5 NB Off-Ramp to Roosevelt	71.8	72.3	72.3	0.5	1.5	No
281	Jeffrey Road	Poplar (Meadows) to Walnut Avenue	70.4	70.9	71.0	0.6	1.5	No
282	Jeffrey Road	Alton Parkway to Barranca Parkway	70.3	70.9	70.9	0.6	1.5	No
283	Jeffrey Road	Irvine Center Drive to Poplar (Meadows)	70.2	70.7	70.8	0.6	1.5	No
284	Jeffrey Road	I-405 NB Off-Ramp to Quail Creek	70.4	70.9	71.0	0.6	1.5	No
285	Jeffrey Road	Barranca Parkway to Irvine Valley College	70.3	70.7	70.7	0.4	1.5	No
286	Jeffrey Road	Quail Creek to Alton Parkway	70.4	70.8	70.8	0.4	1.5	No
287	Jeffrey Road	Irvine Valley College to Irvine Center Drive	70.1	70.5	70.5	0.4	1.5	No
288	Jeffrey Road	Trabuco Road to Hideaway	69.4	69.6	69.7	0.3	1.5	No
289	Jeffrey Road	Hideaway to Bryan Avenue	69.4	69.6	69.7	0.3	1.5	No
290	Jeffrey Road	Roosevelt to Grove	70.0	70.4	70.4	0.4	1.5	No

Table 14

291	Jeffrey Road	Grove to Trabuco Road	70.0	70.2	70.2	0.2	1.5	No
292	Jeffrey Road	Bryan Avenue to Irvine Boulevard	68.1	68.5	68.6	0.5	1.5	No
293	Jeffrey Road	Encore to Portola Parkway	64.0	65.8	65.5	1.5	3.0	No
294	Jeffrey Road	Irvine Boulevard to Encore	64.0	65.5	65.4	1.4	3.0	No
295	Jeronimo Road	Goodyear to Bake Parkway	64.4	64.6	64.6	0.2	3.0	No
296	Jeronimo Road	Alton Parkway to Goodyear	64.1	64.3	64.3	0.2	3.0	No
297	Laguna Canyon Road	Old Laguna Canyon Road to Lake Forest Drive	72.6	73.3	73.4	0.8	1.5	No
298	Laguna Canyon Road	Laguna Canyon Freeway to Quail Hill Parkway	67.7	69.9	70.0	2.3	1.5	Yes
299	Laguna Canyon Road	Discovery to Sand Canyon Avenue	64.8	69.5	69.5	4.7	3.0	Yes
300	Laguna Canyon Road	I-405 Overcrossing to Pasteur	66.0	67.9	68.0	2.0	1.5	Yes
301	Laguna Canyon Road	Irvine Center Drive to Discovery	63.6	69.0	69.0	5.4	3.0	Yes
302	Laguna Canyon Road	Quail Hill Parkway to I-405 Overcrossing	66.0	67.9	68.0	2.0	1.5	Yes
303	Laguna Canyon Road	Pasteur to Alton Parkway	65.5	67.0	67.1	1.6	1.5	Yes
304	Laguna Canyon Road	Waterworks to Irvine Center Drive	64.5	67.5	67.5	3.0	3.0	Yes
305	Laguna Canyon Road	Alton Parkway to Barranca Parkway	64.8	66.3	66.4	1.6	3.0	No
306	Laguna Canyon Road	Barranca Parkway to Waterworks	63.9	66.2	66.3	2.4	3.0	No
307	Lake Forest Drive	Hidden Canyon to Laguna Canyon Road	68.3	69.4	69.6	1.3	1.5	No
308	Lake Forest Drive	Bake Parkway to Hidden Canyon (Romano)	68.3	69.3	69.5	1.2	1.5	No
309	Lake Forest Drive	Tesla to Bake Parkway	65.3	66.4	66.6	1.3	1.5	No
310	Lake Road	Alton Parkway to Barranca Parkway	59.0	59.2	59.2	0.2	5.0	No
311	Lynx	Irvine Boulevard to Astor	0.0	53.2	53.2	53.2	5.0	Yes
312	MacArthur Boulevard	I-405 SB Off-Ramp to Michelson Drive	76.0	76.7	76.8	0.8	1.5	No
313	MacArthur Boulevard	Main Street to I-405 NB Off-Ramp	75.8	76.7	76.7	0.9	1.5	No
314	MacArthur Boulevard	I-405 NB Off-Ramp and I-405 SB Off-Ramp	75.7	76.6	76.6	0.9	1.5	No
315	MacArthur Boulevard	Jamboree Road to Fairchild Road	69.7	69.9	69.9	0.2	1.5	No
316	MacArthur Boulevard	Fairchild Road to University Drive	69.7	69.8	69.8	0.1	1.5	No
317	MacArthur Boulevard	Fitch to Red Hill Avenue	70.4	70.5	70.5	0.1	1.5	No
318	MacArthur Boulevard	Michelson Drive to Douglas	71.3	72.2	72.3	1.0	1.5	No
319	MacArthur Boulevard	Douglas to Campus Drive	71.3	72.1	72.3	1.0	1.5	No
320	MacArthur Boulevard	Skypark to Main Street	69.0	69.5	69.5	0.5	1.5	No
321	MacArthur Boulevard	Redhill Avenue to Skypark	68.0	68.3	68.4	0.4	1.5	No
322	MacArthur Boulevard	Birch Street to Jamboree Road	66.5	67.1	67.2	0.7	1.5	No
323	MacArthur Boulevard	Campus Drive to Birch Street	68.5	69.3	69.5	1.0	1.5	No
324	Main Street	Gillette Avenue to Von Karman Avenue	69.4	70.9	70.9	1.5	1.5	Yes
325	Main Street	MacArthur Boulevard to Mercantile	69.4	70.3	70.3	0.9	1.5	No
326	Main Street	Executive Park to MacArthur Boulevard	67.7	68.4	68.5	0.8	1.5	No
327	Main Street	Von Karman Avenue to Cartwright	67.2	68.5	68.5	1.3	1.5	No

Table 14

328	Main Street	McDermott to Red Hill Avenue	67.9	68.1	68.1	0.2	1.5	No
329	Main Street	Red Hill Avenue to Executive Circle	67.7	68.0	68.0	0.3	1.5	No
330	Main Street	Jamboree Road to Union	67.4	67.8	67.9	0.5	1.5	No
331	Main Street	Culver Drive to West Yale Loop	67.0	67.2	67.2	0.2	1.5	No
332	Main Street	Siglo to Jamboree Road	67.2	67.7	67.7	0.5	1.5	No
333	Main Street	Veneto to Harvard Avenue	67.4	67.5	67.6	0.2	1.5	No
334	Main Street	Paseo Westpark to Culver Drive	66.2	66.3	66.4	0.2	1.5	No
335	Main Street	Harvard Avenue to San Mateo	66.2	66.3	66.3	0.1	1.5	No
336	Marine Way	Sand Canyon Avenue to Ridge Valley (O Street)	67.8	72.3	72.3	4.5	1.5	Yes
337	Marine Way	Alton Parkway to Bake Parkway	0.0	69.4	69.5	69.5	5.0	Yes
338	Marine Way	Lynx to Barranca Parkway	0.0	69.3	69.3	69.3	5.0	Yes
339	Marine Way	County Access to Treble	59.3	68.5	68.5	9.2	5.0	Yes
340	Marine Way	Ridge Valley (O Street) to Skyhawk	62.0	68.3	68.3	6.3	3.0	Yes
341	Marine Way	Skyhawk to County Access	59.3	67.4	67.4	8.1	5.0	Yes
342	Marine Way	Barranca Parkway to Alton Parkway	52.7	66.8	66.8	14.1	5.0	Yes
343	Marine Way	Treble to Lynx	0.0	66.5	66.6	66.6	5.0	Yes
344	McGaw Avenue	Von Karman Avenue to Jamboree Road	62.2	64.5	64.5	2.3	3.0	No
345	McGaw Avenue	Red Hill Avenue to Von Karman Avenue	62.1	64.3	64.4	2.3	3.0	No
346	McGaw Avenue	Daimler to Red Hill Avenue	61.0	62.4	62.4	1.4	3.0	No
347	McGaw Avenue	Jamboree Road to Murphy Avenue	57.6	59.6	59.5	1.9	5.0	No
348	Meadowood	Culver Drive to Canyonwood	59.5	59.8	59.6	0.1	5.0	No
349	Meridian	Spectrum to Alton Parkway	54.7	55.6	55.7	1.0	5.0	No
350	Meridian	Alton Parkway to Gateway Boulevard	53.5	54.7	54.8	1.3	5.0	No
351	Merit	Irvine Boulevard to Cadence	59.3	58.0	58.0	-1.3	5.0	No
352	Michelson Drive	Riparian to Harvard Avenue	66.7	68.3	68.3	1.6	1.5	Yes
353	Michelson Drive	Almond Tree Lane to Yale Avenue	66.3	67.2	67.2	0.9	1.5	No
354	Michelson Drive	Von Karman Avenue to Obsidian	66.7	68.2	68.1	1.4	1.5	No
355	Michelson Drive	Parkside to Culver Drive	66.2	67.8	67.8	1.6	1.5	Yes
356	Michelson Drive	Gillman to Seton/Sandburg Way	66.3	66.9	66.9	0.6	1.5	No
357	Michelson Drive	Carlson to Prince	65.4	67.3	67.3	1.9	1.5	Yes
358	Michelson Drive	MacArthur Boulevard to Dupont Drive	66.7	67.5	67.5	0.8	1.5	No
359	Michelson Drive	Harvard Avenue to Parkside	66.2	66.8	66.8	0.6	1.5	No
360	Michelson Drive	Bixby to Von Karman Avenue	64.9	66.8	66.9	2.0	3.0	No
361	Michelson Drive	Jamboree Road to Carlson	68.0	69.6	69.6	1.6	1.5	Yes
362	Michelson Drive	Teller to Jamboree Road	68.7	69.6	69.6	0.9	1.5	No
363	Michelson Drive	Jordan East to University Drive	66.6	67.1	67.1	0.5	1.5	No
364	Michelson Drive	Culver Drive to Angell	65.9	66.3	66.3	0.4	1.5	No

Table 14

365	Modjeska (A Street)	Portola Springs to Irvine Boulevard	70.7	71.7	71.7	1.0	1.5	No
366	Modjeska (A Street)	South of Irvine Boulevard	61.4	61.1	61.0	-0.4	3.0	No
367	Muirlands Boulevard	Bake Parkway to City Limits	66.4	67.2	67.3	0.9	1.5	No
368	Muirlands Boulevard	Alton Parkway to Sterling	66.1	66.3	66.2	0.1	1.5	No
369	Muirlands Boulevard	Wrigley to Bake Parkway	66.1	66.3	66.3	0.2	1.5	No
370	Newport Coast Drive	SR-73 NB Off-Ramp to Turtle Ridge	65.9	66.6	66.7	0.8	1.5	No
371	Newport Coast Drive	Turtle Crest to Bonita Canyon Drive	65.0	65.1	65.1	0.1	1.5	No
372	Nightmist	Sand Canyon Avenue to Tulip (Road C)	60.8	61.8	61.7	0.9	3.0	No
373	Northwood	Yale Avenue to Savannah	62.3	62.5	62.5	0.2	3.0	No
374	Northwood	Goldrush to Yale Avenue	60.5	61.5	61.6	1.1	3.0	No
375	Oak Canyon Drive	Valley Oak Drive to Sand Canyon Avenue	66.2	69.7	69.7	3.5	1.5	Yes
376	Pacifica	Gateway to Barranca Parkway	63.3	65.3	65.3	2.0	3.0	No
377	Pacifica	Alton Parkway to Gateway	61.8	64.1	64.2	2.4	3.0	No
378	Pacifica	Irvine Center Drive to Fortune Drive (Spectrum Center Drive)	61.7	62.7	62.7	1.0	3.0	No
379	Pacifica	Meridian to Alton Parkway	58.1	60.9	60.9	2.8	5.0	No
380	Park Place	Christamon South to Yale Avenue	56.8	57.0	57.0	0.2	5.0	No
381	Portola Parkway	Bee Canyon Access Road to Sand Canyon Avenue	70.3	71.7	71.8	1.5	1.5	Yes
382	Portola Parkway	Jeffrey Road to Bee Canyon Access Road	70.3	71.7	71.8	1.5	1.5	Yes
383	Portola Parkway	Arrowhead to Ridge Valley Parkway	69.6	71.4	71.5	1.9	1.5	Yes
384	Portola Parkway	Sand Canyon Avenue to Arrowhead	69.6	71.1	71.1	1.5	1.5	Yes
385	Portola Parkway	Portola Springs to SR-241 SB Off-Ramp	65.5	70.1	70.1	4.6	1.5	Yes
386	Portola Parkway	Gatepark to Culver Drive	69.6	70.7	70.9	1.3	1.5	No
387	Portola Parkway	ETC-6 (SR-261) NB Off-Ramp to Gatepark	69.6	70.7	70.8	1.2	1.5	No
388	Portola Parkway	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	69.6	70.6	70.7	1.1	1.5	No
389	Portola Parkway	Jamboree Road to Bellevue	69.6	70.5	70.6	1.0	1.5	No
390	Portola Parkway	Bellevue to ETC-6 (SR-261) SB Off-Ramp	69.6	70.5	70.6	1.0	1.5	No
391	Portola Parkway	Yale Avenue to Jeffrey Road	68.6	70.2	70.4	1.8	1.5	Yes
392	Portola Parkway	Culver Drive to Yale Avenue	68.6	69.7	69.8	1.2	1.5	No
393	Portola Parkway	Silverado to Portola Springs	66.5	68.6	68.7	2.2	1.5	Yes
394	Pusan	Irvine Boulevard to Cadence	54.0	56.2	56.1	2.1	5.0	No
395	Quail Hill Parkway	Shady Canyon Drive to Passage	67.3	67.5	67.5	0.2	1.5	No
396	Quail Hill Parkway	East Knollcrest to Laguna Canyon Road	64.8	65.4	65.4	0.6	3.0	No
397	Quassar Drive (Spectrum)	Irvine Center Drive to Spectrum Center Drive (Fortune)	54.4	54.9	55.0	0.6	5.0	No
398	Red Hill Avenue	MacArthur Boulevard to McGaw Avenue	70.8	71.6	71.7	0.9	1.5	No
399	Red Hill Avenue	I-405 Over Crossing to Main Street	69.6	70.2	70.3	0.7	1.5	No
400	Red Hill Avenue	Alton Parkway to Deere Avenue	69.5	70.1	70.1	0.6	1.5	No
401	Red Hill Avenue	McGaw Avenue to Alton Parkway	69.3	69.9	70.1	0.8	1.5	No

Table 14

402	Red Hill Avenue	Deere Avenue to Barranca Parkway	69.3	69.8	69.9	0.6	1.5	No
403	Red Hill Avenue	Skypark East to MacArthur Boulevard	70.2	71.4	71.5	1.3	1.5	No
404	Red Hill Avenue	Main Street to Skypark East	69.6	70.8	70.9	1.3	1.5	No
405	Research Drive	Hubble to Bake Parkway	65.4	69.6	69.7	4.3	1.5	Yes
406	Research Drive	Scientific to Lake Forest Drive	65.6	67.4	67.8	2.2	1.5	Yes
407	Research Drive	Bake Parkway to Muller	66.2	66.7	66.8	0.6	1.5	No
408	Research Drive	Irvine Center Drive to Bunsen	64.9	65.7	65.8	0.9	3.0	No
409	Ridge Valley (O Street)	Irvine Boulevard to Trabuco Road (Great Park Boulevard)	65.5	67.3	67.3	1.8	1.5	Yes
410	Ridge Valley (O Street)	Portola Parkway to Irvine Boulevard	65.9	66.4	66.4	0.5	1.5	No
411	Ridge Valley (O Street)	Trabuco Road (Great Park Boulevard) to Marine Way	65.8	66.0	66.0	0.2	1.5	No
412	Ridge Valley (O Street)	Ranchland to Portola Parkway	58.0	58.1	58.1	0.1	5.0	No
413	Ridgeline Drive	Concordia East to University Drive	67.7	68.8	68.8	1.1	1.5	No
414	Ridgeline Drive	Turtle Rock Drive to San Simeon	67.7	68.5	68.5	0.8	1.5	No
415	Rockfield Avenue	Whatney to McLaren	66.3	67.7	67.8	1.5	1.5	Yes
416	Rockfield Avenue	Bake Parkway to Whatney	62.5	64.3	64.4	1.9	3.0	No
417	Rockfield Avenue	Thomas to Bake Parkway	62.5	63.1	63.2	0.7	3.0	No
418	Roosevelt	Jeffrey Road to Vision	65.2	66.6	66.7	1.5	1.5	Yes
419	Roosevelt	Yale Avenue to Van Buren	67.9	68.3	68.3	0.4	1.5	No
420	Roosevelt	Vision to Bay Tree	64.5	66.3	66.5	2.0	3.0	No
421	Roosevelt	Nimitz to Jeffrey Road	65.2	65.9	65.9	0.7	1.5	No
422	Roosevelt	Tulip (Road C) to Sand Canyon Avenue	63.7	65.6	65.7	2.0	3.0	No
423	Royal Oak	Alton Parkway to Eaglecreek	63.8	64.0	64.0	0.2	3.0	No
424	Sand Canyon Avenue	Oak Canyon Drive to Burt Road	70.7	72.2	72.2	1.5	1.5	Yes
425	Sand Canyon Avenue	Irvine Center Drive to Oak Canyon Drive	70.6	72.0	72.0	1.4	1.5	No
426	Sand Canyon Avenue	I-405 NB Off-Ramp to Alton Parkway	73.6	74.7	74.7	1.1	1.5	No
427	Sand Canyon Avenue	Burt Road to I-5 SB Off-Ramp	71.2	72.7	72.8	1.6	1.5	Yes
428	Sand Canyon Avenue	Marine to I-5 NB Off-Ramp	72.7	74.6	74.8	2.1	1.5	Yes
429	Sand Canyon Avenue	Trabuco Road to Towngate	70.0	71.0	71.2	1.2	1.5	No
430	Sand Canyon Avenue	Barranca Parkway to Waterworks	69.2	70.9	71.0	1.8	1.5	Yes
431	Sand Canyon Avenue	I-5 SB Off-Ramp to Marine	72.7	73.9	74.0	1.3	1.5	No
432	Sand Canyon Avenue	Hospital to Barranca Parkway	69.3	70.8	70.9	1.6	1.5	Yes
433	Sand Canyon Avenue	Nightmist to Roosevelt	73.3	73.5	73.6	0.3	1.5	No
434	Sand Canyon Avenue	I-405 SB Off-Ramp to I-405 NB Off-Ramp	72.4	73.6	73.6	1.2	1.5	No
435	Sand Canyon Avenue	I-5 NB Off-Ramp to Nightmist	73.2	73.5	73.6	0.4	1.5	No
436	Sand Canyon Avenue	Towngate to Irvine Boulevard	69.3	70.3	70.6	1.3	1.5	No
437	Sand Canyon Avenue	Waterworks to Irvine Center Drive	69.2	70.2	70.3	1.1	1.5	No
438	Sand Canyon Avenue	Irvine Boulevard to Portola Parkway	68.0	69.2	70.3	2.3	1.5	Yes

Table 14

439	Sand Canyon Avenue	Roosevelt to Trabuco Road	72.6	72.8	72.8	0.2	1.5	No
440	Sand Canyon Avenue	Alton Parkway to Hospital	69.7	70.8	70.9	1.2	1.5	No
441	Sand Canyon/Shady Canyon	Quail Hill Parkway to I-405 SB Ramps	71.3	71.8	71.8	0.5	1.5	No
442	Scientific Way	Irvine Center Drive to Wald	54.6	55.0	55.0	0.4	5.0	No
443	Shady Canyon Drive	Culver Drive/Bonita Canyon Drive to Cloverfield	68.6	69.3	69.4	0.8	1.5	No
444	Shady Canyon Drive	Bommer Canyon Road to Sunnyhill	67.1	67.7	67.8	0.7	1.5	No
445	Skyhawk	Great Park Boulevard to Marine Way	52.8	59.6	59.5	6.7	5.0	Yes
446	Southwood	Yale Avenue to Colt	60.5	60.6	60.6	0.1	3.0	No
447	Southwood	Challenger to Yale Avenue	59.9	60.4	60.4	0.5	5.0	No
448	Spectrum Center Drive (Fortune Drive)	Pacifica to Quassar Drive (Spectrum )	61.4	62.0	61.9	0.5	3.0	No
449	Spectrum Center Drive (Fortune Drive)	Quassar Drive (Spectrum ) to Gatewayb	62.0	62.5	62.5	0.5	3.0	No
450	Sunnyhill	Shady Canyon Drive to Turtle Rock Drive	56.9	57.7	57.8	0.9	5.0	No
451	Technology Drive	Barranca Parkway to Alton Parkway	67.0	70.8	70.8	3.8	1.5	Yes
452	Technology Drive	Old Laguna Canyon Road to I-5/SR-133 Undercrossing	63.2	69.6	69.6	6.4	3.0	Yes
453	Technology Drive	I-5/SR-133 to Barranca Parkway	62.8	69.4	69.4	6.6	3.0	Yes
454	Technology Drive	Ada to Alton Parkway	57.8	63.7	63.7	5.9	5.0	Yes
455	Toledo Way	Bake Parkway to City Limits	65.5	65.6	65.6	0.1	1.5	No
456	Toledo Way	Goodyear to Bake Parkway	64.5	64.7	64.7	0.2	3.0	No
457	Toledo Way	Alton Parkway to Parker	63.9	64.5	64.5	0.6	3.0	No
458	Trabuco Road	Keystone to Sand Canyon Avenue	66.7	67.2	67.3	0.6	1.5	No
459	Trabuco Road	Jeffrey Road to Keystone	66.7	67.1	67.1	0.4	1.5	No
460	Trabuco Road	Culver Drive to I-5 NB Off-Ramp	66.3	66.8	66.9	0.6	1.5	No
461	Trabuco Road	Monroe to Yale Avenue	66.3	66.8	66.9	0.6	1.5	No
462	Trabuco Road	I-5 NB Off-Ramp to Monroe	66.3	66.7	66.8	0.5	1.5	No
463	Trabuco Road	Yale Avenue to Remington	65.7	66.4	66.5	0.8	1.5	No
464	Trabuco Road	Remington to Jeffrey Road	65.7	66.1	66.2	0.5	1.5	No
465	Turtle Ridge Drive	Federation Way to Bonita Canyon	0.0	68.7	68.7	68.7	5.0	Yes
466	Turtle Rock Drive	Ridgeline to Willowleaf	66.9	67.9	67.9	1.0	1.5	No
467	Turtle Rock Drive	Silkwood to Sunnyhill	67.0	67.8	67.8	0.8	1.5	No
468	Turtle Rock Drive	Canyon Park to Ridgeline	66.7	67.1	67.1	0.4	1.5	No
469	Turtle Rock Drive	Sunnyhill to Southernwood	63.9	64.0	64.0	0.1	3.0	No
470	Turtle Rock Drive	Campus Drive to Hillgate	63.8	64.1	64.2	0.4	3.0	No
471	Turtle Rock Drive	Paseo Segovia to Campus Drive	65.3	65.5	65.4	0.1	1.5	No
472	University Drive	Golden Glow to Yale Avenue	72.2	73.0	73.1	0.9	1.5	No
473	University Drive	Ridgeline to Michelson Drive	72.1	72.6	72.6	0.5	1.5	No
474	University Drive	Culver Drive to Golden Glow	72.1	72.9	72.9	0.8	1.5	No
475	University Drive	Yale Avenue to Ridgeline	72.0	72.4	72.4	0.4	1.5	No



Table 14

476	University Drive	Michelson Drive to I-405 SB Off-Ramp	72.3	72.7	72.8	0.5	1.5	No
477	University Drive	Mesa to Campus Drive	73.3	74.5	74.6	1.3	1.5	No
478	University Drive	MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	73.3	74.4	74.7	1.4	1.5	No
479	University Drive	California Avenue to Mesa	73.3	74.4	74.5	1.2	1.5	No
480	University Drive	Campus Drive to Harvard Avenue	69.5	70.7	70.8	1.3	1.5	No
481	University Drive	SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	70.4	71.6	71.8	1.4	1.5	No
482	University Drive	SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps	69.2	70.2	70.4	1.2	1.5	No
483	University Drive	San Joaquin to Culver Drive	68.7	69.8	69.9	1.2	1.5	No
484	University Drive	Harvard Avenue to San Joaquin	68.7	69.8	69.9	1.2	1.5	No
485	Valley Oak Drive	Hawkcreek to Barranca Parkway	63.0	68.1	68.1	5.1	3.0	Yes
486	Valley Oak Drive	Irvine Center Drive to Oak Canyon Drive	65.2	69.6	69.5	4.3	1.5	Yes
487	Valley Oak Drive	Barranca Parkway to Irvine Center Drive	62.9	67.1	67.2	4.3	3.0	Yes
488	Valley Oak Drive	Alton Parkway to Hawkcreek	63.8	64.9	64.9	1.1	3.0	No
489	Von Karman Avenue	Marriott to Morse Avenue	68.9	71.0	71.0	2.1	1.5	Yes
490	Von Karman Avenue	Michelson Drive to Quartz	68.8	70.9	70.9	2.1	1.5	Yes
491	Von Karman Avenue	McGaw Avenue to Alton Parkway	69.3	70.8	70.8	1.5	1.5	Yes
492	Von Karman Avenue	Alton Parkway to Barranca Parkway	68.4	70.4	70.4	2.0	1.5	Yes
493	Von Karman Avenue	Main Street to Anchor	69.2	70.7	70.7	1.5	1.5	Yes
494	Von Karman Avenue	Anchor to McGaw Avenue	69.2	70.5	70.6	1.4	1.5	No
495	Von Karman Avenue	Morse to Main Street	69.2	70.3	70.3	1.1	1.5	No
496	Von Karman Avenue	Martin to Dupont Drive	67.8	69.6	69.7	1.9	1.5	Yes
497	Von Karman Avenue	Campus Drive to Martin	67.8	69.5	69.6	1.8	1.5	Yes
498	Von Karman Avenue	Dupont Drive to Michelson Drive	67.8	69.5	69.6	1.8	1.5	Yes
499	Walnut Avenue	Jeffrey Road to I-5 SB Off-Ramp	68.9	70.9	71.0	2.1	1.5	Yes
500	Walnut Avenue	Myford Road to Jamboree Road SB Off-Ramp	68.6	69.1	69.2	0.6	1.5	No
501	Walnut Avenue	The Mall Street to Culver Drive	68.2	68.8	68.9	0.7	1.5	No
502	Walnut Avenue	Harvard Avenue to The Mall Street	68.2	68.8	68.8	0.6	1.5	No
503	Walnut Avenue	Franciscan Street to Ravenwood Street	68.0	68.5	68.6	0.6	1.5	No
504	Walnut Avenue	Ravenwood Street to Yale Avenue	68.0	68.5	68.5	0.5	1.5	No
505	Walnut Avenue	Culver Drive to Franciscan Street	68.0	68.4	68.4	0.4	1.5	No
506	Walnut Avenue	Peters Canyon Road to Harvard Avenue	67.0	68.0	68.1	1.1	1.5	No
507	Walnut Avenue	Jamboree Road NB Off-Ramp to Peters Canyon Road	67.0	67.9	67.9	0.9	1.5	No
508	Walnut Avenue	Yale Avenue to Kazan Street	66.3	67.3	67.3	1.0	1.5	No
509	Walnut Avenue	Wisteria to Jeffrey Road	66.3	67.2	67.2	0.9	1.5	No
510	Warner Avenue	Jamboree Road SB Off-ramp to Construction North	69.6	70.2	70.1	0.5	1.5	No
511	Warner Avenue	Construction North to Harvard Avenue	67.8	68.6	68.6	0.8	1.5	No
512	Warner Avenue	Harvard Avenue to Paseo Westpark	66.1	67.1	67.1	1.0	1.5	No

Table 14

513	Warner Avenue	Santa Ynez to Culver Drive	65.1	66.2	66.2	1.1	1.5	No
514	Warner Avenue	Culver Drive to West Yale Loop	64.9	65.8	65.9	1.0	3.0	No
515	West Yale Loop	Alton Parkway to Blue Lake North	63.3	64.0	64.0	0.7	3.0	No
516	West Yale Loop	Eagle Run to Main Street	63.3	63.9	63.8	0.5	3.0	No
517	West Yale Loop	Thunder Run to Yale Avenue	62.7	64.0	64.0	1.3	3.0	No
518	West Yale Loop	Main Street to Timber Run	62.7	62.8	62.9	0.2	3.0	No
519	West Yale Loop	Yale Avenue to Shorebird	61.8	63.2	63.3	1.5	3.0	No
520	West Yale Loop	Warner Avenue to Stonecreek South	61.8	62.7	62.7	0.9	3.0	No
521	West Yale Loop	Barranca Parkway to Alton Parkway	61.7	62.4	62.4	0.7	3.0	No
522	West Yale Loop	Stonecreek North to Warner Avenue	61.8	62.6	62.6	0.8	3.0	No
523	West Yale Loop	Birdsong to Barranca Parkway	61.8	62.4	62.5	0.7	3.0	No
524	Westwood	Yorktown to Bryan Avenue	63.2	63.5	63.5	0.3	3.0	No
525	Westwood	Bryan Avenue to Leaf	61.3	61.6	61.6	0.3	3.0	No
526	Yale Avenue	Deerfield Avenue to Winvale Avenue	68.5	68.6	68.6	0.1	1.5	No
527	Yale Avenue	Hicks Canyon Drive to Meadowood	67.2	67.3	67.3	0.1	1.5	No
528	Yale Avenue	Walnut Avenue to Roosevelt	70.7	71.1	71.2	0.5	1.5	No
529	Yale Avenue	Roosevelt to Trabuco Road	66.9	67.1	67.1	0.2	1.5	No
530	Yale Avenue	Irvine Center Drive to Deerfield Avenue	66.5	66.9	66.8	0.3	1.5	No
531	Yale Avenue	West Yale Loop to Irvine Center Drive	65.0	66.5	66.6	1.6	1.5	Yes
532	Yale Avenue	Winvale Avenue to Karen Ann Lane	65.6	65.7	65.8	0.2	1.5	No
533	Yale Avenue	Karen Ann Lane to Walnut Avenue	65.6	65.7	65.8	0.2	1.5	No
534	Yale Avenue	Trabuco Road to Southwood	65.1	65.6	65.7	0.6	1.5	No
535	Yale Avenue	Southwood to Bryan Avenue	65.1	65.4	65.4	0.3	1.5	No
536	Yale Avenue	Northwood to Irvine Boulevard	64.8	65.1	65.2	0.4	3.0	No
537	Yale Avenue	Bryan Avenue to Monticello	64.8	65.0	65.0	0.2	3.0	No
538	Yale Avenue	Irvine Boulevard to Park Place	64.1	64.2	64.2	0.1	3.0	No
539	Yale Avenue	University Drive to Royce	57.9	63.6	63.5	5.6	5.0	Yes
540	Yale Court	Arborwood to Portola Parkway	60.0	60.4	60.4	0.4	1.5	No
<sup>1</sup> Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses. <sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use. <sup>3</sup> Does the Project create an incremental noise level increase exceeding the significance criteria?								

Table 15

Table 15: Existing and Cumulative Preferred Plan Traffic Noise Level Increases

ID	Road	Segment	CNEL at Receiving Land Use (dBA) <sup>2</sup>				Incremental Noise Level Increase Threshold <sup>3</sup>	
			Existing	Preferred	Cumulative Preferred	Cumulative Increase	Limit	Exceeded?
1	Ada	Barranca Parkway to Marine Way	0.0	70.8	70.8	70.8	5.0	Yes
2	Ada	Alton Parkway to Barranca Parkway	60.3	69.2	69.2	8.9	3.0	Yes
3	Alton Parkway	Enterprise to I-5 NB Off-Ramp	71.3	73.9	73.9	2.6	1.5	Yes
4	Alton Parkway	I-5 NB Off-Ramp to Technology Drive West	72.1	74.5	74.5	2.4	1.5	Yes
5	Alton Parkway	East Yale Loop to Jeffrey Road	71.3	71.8	71.8	0.5	1.5	No
6	Alton Parkway	Gateway Boulevard to Enterprise	69.3	71.7	71.7	2.4	1.5	Yes
7	Alton Parkway	Jeffrey Road to Royal Oak	70.1	70.7	70.8	0.7	1.5	No
8	Alton Parkway	Daimler Street to Red Hill Avenue	63.7	70.6	70.6	6.9	3.0	Yes
9	Alton Parkway	Culver Drive to West Yale Loop	70.4	70.6	70.6	0.2	1.5	No
10	Alton Parkway	West Yale Loop to Lake Road	70.3	70.6	70.6	0.3	1.5	No
11	Alton Parkway	Technology Drive West to Ada	70.2	72.4	72.4	2.2	1.5	Yes
12	Alton Parkway	Creek Road to East Yale Loop	70.1	70.5	70.6	0.5	1.5	No
13	Alton Parkway	Red Hill Avenue to Von Karman Avenue	68.1	70.4	70.5	2.4	1.5	Yes
14	Alton Parkway	Lake Road to Creek Road	70.1	70.3	70.3	0.2	1.5	No
15	Alton Parkway	Telemetry to Banting	69.0	70.3	70.4	1.4	1.5	No
16	Alton Parkway	Irvine Boulevard to Commercentre	70.3	70.8	70.9	0.6	1.5	No
17	Alton Parkway	Jenner to Telemetry	69.0	70.3	70.3	1.3	1.5	No
18	Alton Parkway	Irvine Center Drive to Gateway Boulevard	68.6	71.0	71.0	2.4	1.5	Yes
19	Alton Parkway	Sand Canyon Avenue to Hospital	72.1	73.7	73.7	1.6	1.5	Yes
20	Alton Parkway	Laguna Canyon Road to Jenner	69.0	70.2	70.2	1.2	1.5	No
21	Alton Parkway	Technology Drive East to Barranca Pkwy/Muirlands Blvd	69.1	70.8	70.8	1.7	1.5	Yes
22	Alton Parkway	Royal Oak to Valley Oak Drive	69.4	70.0	70.0	0.6	1.5	No
23	Alton Parkway	Banting to Pacifica	68.4	69.9	69.9	1.5	1.5	Yes
24	Alton Parkway	Barranca Pkwy/Muirlands Blvd to Jeronimo Road	70.1	70.3	70.3	0.2	1.5	No
25	Alton Parkway	Ada to Technology Drive East	69.2	70.3	70.3	1.1	1.5	No
26	Alton Parkway	Von Karman Avenue to Jamboree Road	68.7	69.6	69.7	1.0	1.5	No
27	Alton Parkway	Jeronimo Road to Hughes	69.8	70.0	70.0	0.2	1.5	No
28	Alton Parkway	Hughes to Morgan	69.5	69.8	69.8	0.3	1.5	No
29	Alton Parkway	Morgan to Toledo Way	68.8	69.0	69.0	0.2	1.5	No
30	Alton Parkway	San Marino to Culver Drive	68.8	69.1	69.1	0.3	1.5	No
31	Alton Parkway	Jamboree Road to Murphy Avenue	68.0	68.9	69.1	1.1	1.5	No

Table 15

32	Alton Parkway	Hospital to Laguna Canyon Road	70.7	71.9	72.0	1.3	1.5	No
33	Alton Parkway	Valley Oak Drive to Sand Canyon Avenue	71.1	71.8	71.8	0.7	1.5	No
34	Alton Parkway	Murphy Avenue to Harvard Avenue	68.1	68.7	68.9	0.8	1.5	No
35	Alton Parkway	Foster to Irvine Boulevard	68.0	68.7	68.7	0.7	1.5	No
36	Alton Parkway	Fairbanks to Foster	67.5	68.4	68.5	1.0	1.5	No
37	Alton Parkway	Toledo Way to Berteia	68.2	68.4	68.4	0.2	1.5	No
38	Alton Parkway	Pacifica to Meridian	69.7	71.5	71.6	1.9	1.5	Yes
39	Alton Parkway	Berteia to Fairbanks	68.1	68.3	68.3	0.2	1.5	No
40	Alton Parkway	Meridian to Irvine Center Drive	66.6	68.2	68.2	1.6	1.5	Yes
41	Alton Parkway	Paseo Westpark to San Marino	67.9	68.1	68.2	0.3	1.5	No
42	Alton Parkway	Harvard Avenue to Paseo Westpark	66.9	67.5	67.7	0.8	1.5	No
43	Astor	Lynx to Fairbanks	57.5	67.0	67.0	9.5	5.0	Yes
44	Astor	Cadence to Lynx	0.0	65.8	65.8	65.8	5.0	Yes
45	Bake Parkway	I-5 NB Off-Ramp to Rockfield Boulevard	75.4	76.6	76.6	1.2	1.5	No
46	Bake Parkway	Muirlands Boulevard to Jeronimo Road	72.7	72.9	72.9	0.2	1.5	No
47	Bake Parkway	Rockfield Boulevard to Muirlands Boulevard	74.7	75.0	75.0	0.3	1.5	No
48	Bake Parkway	Jeronimo Road to Toledo Way	71.9	72.0	72.0	0.1	1.5	No
49	Bake Parkway	Toledo Way to Cromwell	71.5	71.6	71.7	0.2	1.5	No
50	Bake Parkway	Cromwell to Irvine Boulevard	71.4	71.6	71.6	0.2	1.5	No
51	Bake Parkway	Research Drive to I-5 SB Off-Ramp	68.5	69.5	69.6	1.1	1.5	No
52	Bake Parkway	Irvine Center Drive to Research Drive	64.1	64.8	65.0	0.9	3.0	No
53	Bake Parkway	Lake Forest Drive to Irvine Center Drive	61.9	63.4	63.7	1.8	3.0	No
54	Banting	Alton Parkway to Barranca Parkway	57.6	60.2	60.1	2.5	5.0	No
55	Barranca Parkway	Pacifica to Irvine Center Drive	70.5	73.1	73.1	2.6	1.5	Yes
56	Barranca Parkway	Banting to Pacifica	70.7	72.7	72.7	2.0	1.5	Yes
57	Barranca Parkway	I-5 HOV Ramp to Technology Drive West	69.8	72.6	72.7	2.9	1.5	Yes
58	Barranca Parkway	Technology Drive West to Ada	70.4	72.6	72.6	2.2	1.5	Yes
59	Barranca Parkway	Irvine Center Drive to I-5 HOV Ramp	69.3	72.3	72.4	3.1	1.5	Yes
60	Barranca Parkway	Culver Drive to West Yale Loop	71.9	72.2	72.2	0.3	1.5	No
61	Barranca Parkway	East Yale Loop to Jeffrey Road	71.7	72.1	72.1	0.4	1.5	No
62	Barranca Parkway	West Yale Loop to Lake Road	71.6	72.0	72.0	0.4	1.5	No
63	Barranca Parkway	Ada to Alton Parkway	70.2	72.0	72.0	1.8	1.5	Yes
64	Barranca Parkway	Lake Road to Creek Road	71.2	71.7	71.7	0.5	1.5	No
65	Barranca Parkway	Red Hill Avenue to Armstrong Avenue	73.3	74.7	74.7	1.4	1.5	No
66	Barranca Parkway	Discovery/Herchel to Banting	69.7	71.6	71.6	1.9	1.5	Yes
67	Barranca Parkway	Lyon to East Yale Loop	71.0	71.5	71.5	0.5	1.5	No
68	Barranca Parkway	Creek Road to Lyon	70.9	71.4	71.4	0.5	1.5	No

Table 15

69	Barranca Parkway	Von Karman Avenue to Jamboree Road	71.5	72.7	72.7	1.2	1.5	No
70	Barranca Parkway	Sand Canyon Avenue to Laguna Canyon Road	68.5	70.8	70.8	2.3	1.5	Yes
71	Barranca Parkway	Armstrong Avenue to Von Karman Avenue	72.0	72.3	72.4	0.4	1.5	No
72	Barranca Parkway	Valley Oak Drive to Sand Canyon Avenue	69.1	70.6	70.7	1.6	1.5	Yes
73	Barranca Parkway	Jamboree Road to Construction Circle	70.1	71.0	71.1	1.0	1.5	No
74	Barranca Parkway	Santa Rosa to Culver Drive	69.8	70.9	71.0	1.2	1.5	No
75	Barranca Parkway	FedEx to Discovery/Herchel	68.8	70.2	70.3	1.5	1.5	Yes
76	Barranca Parkway	Jeffrey Road to Valley Oak Drive	68.3	70.2	70.3	2.0	1.5	Yes
77	Barranca Parkway	Laguna Canyon Road to FedEx	68.8	70.1	70.1	1.3	1.5	No
78	Barranca Parkway	Pullman Street to Red Hill Avenue	72.7	73.6	73.6	0.9	1.5	No
79	Barranca Parkway	Construction Circle to Fire Station	69.4	70.5	70.5	1.1	1.5	No
80	Barranca Parkway	Fire Station to Harvard Avenue	69.4	70.5	70.5	1.1	1.5	No
81	Barranca Parkway	Paseo Westpark to Santa Rosa	69.3	70.4	70.5	1.2	1.5	No
82	Barranca Parkway	Harvard Avenue to Paseo Westpark	69.2	70.1	70.2	1.0	1.5	No
83	Bay Tree	Trabuco Road to Roosevelt	56.1	57.2	57.2	1.1	5.0	No
84	Beacon	Ridge Valley to Benchmark	0.0	59.6	59.7	59.7	5.0	Yes
85	Benchmark (LN Street)	Ridge Valley (O Street) to Bosque	0.0	56.5	56.5	56.5	5.0	Yes
86	Bison Avenue	SR-73 NB Off-Ramp to California Avenue	68.6	69.6	69.7	1.1	1.5	No
87	Bonita Canyon Drive	MacArthur Boulevard to SR-73	70.0	70.3	70.3	0.3	1.5	No
88	Bonita Canyon Drive	Turtle Ridge to Shady Canyon Drive	67.5	68.6	68.6	1.1	1.5	No
89	Bonita Canyon Drive	Newport Coast Drive to Turtle Ridge	67.5	68.2	68.2	0.7	1.5	No
90	Bonita Canyon Drive	SR-73 NB Off-Ramp to Newport Coast Drive	67.5	68.0	68.0	0.5	1.5	No
91	Bosque	Cadence to Great Park Boulevard	63.0	65.2	65.2	2.2	3.0	No
92	Bosque	Irvine Boulevard to Benchmark (LN Street)	59.7	63.5	63.5	3.8	5.0	No
93	Bosque	Benchmark to Cadence	59.7	63.1	63.1	3.4	5.0	No
94	Bosque	Great Park Boulevard to Beacon	0.0	56.7	56.7	56.7	5.0	Yes
95	Bosque	Beacon to S 5th Street	0.0	56.1	56.1	56.1	5.0	Yes
96	Bryan Avenue	Jamboree Road to Market Place	68.7	68.9	69.0	0.3	1.5	No
97	Bryan Avenue	Market Place to El Camino Real	68.7	68.9	68.9	0.2	1.5	No
98	Bryan Avenue	Rubicon to Culver Drive	68.7	68.9	68.9	0.2	1.5	No
99	Bryan Avenue	El Camino Real to Rubicon	68.7	68.8	68.9	0.2	1.5	No
100	Bryan Avenue	Eastwood to Jeffrey Road	65.8	66.9	67.0	1.2	1.5	No
101	Bryan Avenue	Westwood to Yale Avenue	66.3	66.6	66.7	0.4	1.5	No
102	Bryan Avenue	Culver Drive to Westwood	66.3	66.6	66.6	0.3	1.5	No
103	Bryan Avenue	Yale Avenue to Eastwood	65.8	66.4	66.5	0.7	1.5	No
104	Cadence	Pusan to Chinon	64.5	65.6	65.6	1.1	3.0	No
105	Cadence	Bosque to Pusan	65.7	65.3	65.3	-0.4	1.5	No

Table 15

106	Cadence	Ridge Valley (O Street) to Bosque	62.6	63.9	63.9	1.3	3.0	No
107	Cadence	Chinon to Merit	62.6	62.2	62.2	-0.4	3.0	No
108	Cadence	Merit to Astor	0.0	59.4	59.4	59.4	5.0	Yes
109	California Avenue	University Drive to Academy Way	64.3	66.2	67.2	2.9	3.0	No
110	California Avenue	Campus Drive to Harvard Avenue	63.2	64.2	64.2	1.0	3.0	No
111	California Avenue	Theory to Bison Avenue	63.1	63.9	64.0	0.9	3.0	No
112	Campus Drive	Carlson Avenue to University Drive	70.9	73.2	73.3	2.4	1.5	Yes
113	Campus Drive	University Drive to Bridge Road	70.1	71.8	71.7	1.6	1.5	Yes
114	Campus Drive	Jamboree Road to Carlson Avenue	69.0	71.5	71.5	2.5	1.5	Yes
115	Campus Drive	Stanford Court to Berkeley Avenue	70.1	71.1	71.0	0.9	1.5	No
116	Campus Drive	California Avenue to Culver Drive	68.9	70.9	70.9	2.0	1.5	Yes
117	Campus Drive	Berkeley Avenue to Cornell	68.9	70.0	69.9	1.0	1.5	No
118	Campus Drive	Martin to Von Karman Avenue	67.5	69.0	69.1	1.6	1.5	Yes
119	Campus Drive	Culver Drive to Paseo Montoya (Turtle Rock Drive)	68.5	68.7	68.7	0.2	1.5	No
120	Campus Drive	Von Karman Avenue to Teller Avenue	66.8	68.3	68.5	1.7	1.5	Yes
121	Campus Drive	MacArthur Boulevard to Martin	67.5	68.2	68.3	0.8	1.5	No
122	Campus Drive	Teller Avenue to Jamboree Road	66.8	67.5	67.5	0.7	1.5	No
123	Carlson Avenue	Michelson Drive to Campus Drive	64.5	67.9	67.9	3.4	3.0	Yes
124	Chinon	Irvine Boulevard to Cadence	56.6	59.0	59.0	2.4	5.0	No
125	Creek Road	Alton Parkway to Barranca Parkway	55.3	56.1	56.2	0.9	5.0	No
126	Culver Drive	Michelson Drive to I-405 SB Off-Ramp	73.4	73.9	73.9	0.5	1.5	No
127	Culver Drive	I-405 SB Off-Ramp to I-405 NB Off Ramp	73.4	73.8	73.8	0.4	1.5	No
128	Culver Drive	I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)	73.7	73.9	73.9	0.2	1.5	No
129	Culver Drive	Scottsdale Drive to I-5 SB Off- Ramp	73.7	73.9	73.9	0.2	1.5	No
130	Culver Drive	I-405 NB Off-Ramp to San Leandro	73.4	73.6	73.6	0.2	1.5	No
131	Culver Drive	San Leandro to Main Street	73.2	73.3	73.3	0.1	1.5	No
132	Culver Drive	Harvard Avenue to University Drive	72.7	73.3	73.3	0.6	1.5	No
133	Culver Drive	Trabuco Road to Farwell Avenue	74.1	74.3	74.2	0.1	1.5	No
134	Culver Drive	Alton Parkway to Barranca Parkway	72.9	73.2	73.2	0.3	1.5	No
135	Culver Drive	Main Street to Alton Parkway	72.7	73.1	73.1	0.4	1.5	No
136	Culver Drive	Warner Avenue to Irvine Center Drive	72.7	73.0	73.0	0.3	1.5	No
137	Culver Drive	Walnut Avenue to Scottsdale Dive	72.6	72.9	72.9	0.3	1.5	No
138	Culver Drive	Barranca Parkway to Warner Avenue	72.6	72.8	72.9	0.3	1.5	No
139	Culver Drive	Shady Canyon Drive to Palo Verde	71.4	72.0	72.0	0.6	1.5	No
140	Culver Drive	Deerfield Avenue to Walnut Avenue	72.3	72.5	72.5	0.2	1.5	No
141	Culver Drive	Sandburg Way to Michelson Drive	71.9	72.5	72.5	0.6	1.5	No
142	Culver Drive	Irvine Center Drive to Deerfield Avenue	72.1	72.4	72.4	0.3	1.5	No

Table 15

143	Culver Drive	Palo Verde to Campus Drive	71.4	71.6	71.6	0.2	1.5	No
144	Culver Drive	University Drive to Sandburg Way	71.5	72.2	72.2	0.7	1.5	No
145	Culver Drive	Farwell Avenue to Bryan Avenue	72.8	73.2	73.2	0.4	1.5	No
146	Culver Drive	Campus Drive to High School	71.6	72.1	72.1	0.5	1.5	No
147	Culver Drive	High School to Harvard Avenue	71.6	72.0	72.0	0.4	1.5	No
148	Culver Drive	Bryan Avenue to Florence	71.5	71.8	71.8	0.3	1.5	No
149	Culver Drive	Portola Parkway to Settlers	68.9	71.1	71.2	2.3	1.5	Yes
150	Culver Drive	Florence to Irvine Boulevard	71.3	71.7	71.7	0.4	1.5	No
151	Culver Drive	Irvine Boulevard to Viewpark	70.0	70.5	70.5	0.5	1.5	No
152	Culver Drive	Viewpark to Meadowood	70.0	70.4	70.4	0.4	1.5	No
153	Culver Drive	Settlers to Furrow	0.0	68.4	68.5	68.5	5.0	Yes
154	Culver Drive	Meadowood to Portola Parkway	68.3	69.0	69.0	0.7	1.5	No
155	Discovery Drive	Irvine Center Drive to Laguna Canyon Road	56.6	64.0	64.0	7.4	5.0	Yes
156	Discovery Drive	Waterworks Way to Irvine Center Drive	0.0	61.2	61.2	61.2	5.0	Yes
157	East Yale Loop	Alton Parkway to Witherspoon	64.6	65.5	65.5	0.9	3.0	No
158	East Yale Loop	Osborn Street to Barranca Parkway	64.3	65.3	65.3	1.0	3.0	No
159	East Yale Loop	Yale Avenue to Springbrook South	62.3	64.8	64.9	2.6	3.0	No
160	East Yale Loop	Springbrook North to Alton Parkway	62.3	63.5	63.6	1.3	3.0	No
161	East Yale Loop	Woodspring to Yale Avenue	62.3	62.7	62.7	0.4	3.0	No
162	East Yale Loop	Barranca Parkway to Eastshore	62.3	62.4	62.4	0.1	3.0	No
163	Eastwood	Bryan Avenue to Monticello	59.5	60.8	60.8	1.3	5.0	No
164	Eastwood	Columbus to Bryan Avenue	58.5	58.7	58.8	0.3	5.0	No
165	El Camino Real	Jamboree Road to Alliance (SR-261 Bridge)	66.9	67.1	67.1	0.2	1.5	No
166	El Camino Real North	El Camino Real to Bryan Avenue	62.2	62.4	62.4	0.2	3.0	No
167	Fairbanks	Alton Parkway to Astor	61.3	69.7	69.8	8.5	3.0	Yes
168	Fairbanks	Irvine Boulevard to Alton Parkway	0.0	66.9	66.9	66.9	5.0	Yes
169	Fairchild Road	MacArthur Boulevard to Jamboree Road	63.3	64.1	64.0	0.7	3.0	No
170	Gateway Boulevard	Alton Parkway to Irvine Center Drive	57.0	63.3	63.3	6.3	5.0	Yes
171	Gateway Boulevard	Spectrum Center Drive (Fortune Drive) to Alton Parkway	59.4	62.1	62.1	2.7	5.0	No
172	Gateway Boulevard	Irvine Center Drive to Meridian	56.8	59.1	59.2	2.4	5.0	No
173	Great Park Boulevard	Sand Canyon to Ridge Valley	70.5	74.4	74.5	4.0	1.5	Yes
174	Great Park Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	64.0	70.2	70.2	6.2	3.0	Yes
175	Great Park Boulevard (EB)	Bosque to Skyhawk	0.0	68.8	68.9	68.9	5.0	Yes
176	Great Park Boulevard (WB)	Bosque to Skyhawk	0.0	68.3	68.3	68.3	5.0	Yes
177	Harvard Avenue	University Drive to Michelson Drive	71.2	72.0	72.0	0.8	1.5	No
178	Harvard Avenue	Michelson Drive to Coronado	69.5	70.4	70.5	1.0	1.5	No
179	Harvard Avenue	San Marino to Alton Parkway	69.4	70.1	70.2	0.8	1.5	No

Table 15

180	Harvard Avenue	Coronado to Main Street	69.3	70.1	70.2	0.9	1.5	No
181	Harvard Avenue	San Carlo to San Marino	69.4	70.0	70.1	0.7	1.5	No
182	Harvard Avenue	Main Street to San Carlo	69.3	70.0	70.0	0.7	1.5	No
183	Harvard Avenue	Alton Parkway to San Leon	68.5	68.8	68.6	0.1	1.5	No
184	Harvard Avenue	San Juan to Barranca Parkway	68.5	68.8	68.7	0.2	1.5	No
185	Harvard Avenue	San Leon to San Juan	68.4	68.6	68.6	0.2	1.5	No
186	Harvard Avenue	Irvine Center Drive to Deerfield Avenue	65.5	67.4	67.4	1.9	1.5	Yes
187	Harvard Avenue	Deerfield Avenue to Poplar Street	65.5	67.3	67.4	1.9	1.5	Yes
188	Harvard Avenue	Barranca Parkway to Warner Avenue	67.6	67.8	67.9	0.3	1.5	No
189	Harvard Avenue	Bridge Road to University Drive	67.2	67.8	67.8	0.6	1.5	No
190	Harvard Avenue	Paseo Westpark to Irvine Center Drive	66.1	67.8	67.8	1.7	1.5	Yes
191	Harvard Avenue	Poplar Street to Walnut Avenue	66.8	68.7	68.8	2.0	1.5	Yes
192	Harvard Avenue	California Avenue to Berkeley Avenue	66.1	67.2	67.2	1.1	1.5	No
193	Harvard Avenue	Culver Drive to California Avenue	66.1	67.2	67.2	1.1	1.5	No
194	Harvard Avenue	Berkeley to Bridge Road	66.1	67.1	67.1	1.0	1.5	No
195	Harvard Avenue	Warner Avenue to Paseo Westpark	65.9	66.8	66.8	0.9	1.5	No
196	Hicks Canyon Drive	Delamesa to Yale Avenue	58.2	58.2	58.2	0.0	5.0	No
197	Hornet (5th St)	Ridge Valley (O Street) to Bosque	0.0	57.5	57.6	57.6	5.0	Yes
198	Hubble	Irvine Center Drive to Bunsen	55.5	55.9	56.1	0.6	5.0	No
199	Irvine Boulevard	SR-133 NB Off- Ramp to Ridge Valley (O Street)	72.1	72.3	72.3	0.2	1.5	No
200	Irvine Boulevard	SR-133 SB Off-Ramp to SR-133 NB Off-Ramp	72.0	72.2	72.1	0.1	1.5	No
201	Irvine Boulevard	Sand Canyon to SR-133 SB Off-Ramp	72.9	73.1	73.1	0.2	1.5	No
202	Irvine Boulevard	Merit to Alton	71.4	71.6	71.6	0.2	1.5	No
203	Irvine Boulevard	Journey to Sand Canyon Avenue	71.4	71.6	71.7	0.3	1.5	No
204	Irvine Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	70.9	71.2	71.1	0.2	1.5	No
205	Irvine Boulevard	Pusan Way to Chinon (B Street)	70.8	71.0	71.0	0.2	1.5	No
206	Irvine Boulevard	Palo Lado to Yale Avenue	70.4	71.1	71.2	0.8	1.5	No
207	Irvine Boulevard	Culver Drive to Palo Lado	70.5	71.0	71.1	0.6	1.5	No
208	Irvine Boulevard	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.5	70.9	71.0	0.5	1.5	No
209	Irvine Boulevard	Old Myford Road to Market Place	70.3	71.0	71.0	0.7	1.5	No
210	Irvine Boulevard	Bosque (LY Street) to Modjeska	70.5	70.9	71.0	0.5	1.5	No
211	Irvine Boulevard	Jamboree Road to Old Myford Road	70.3	70.9	70.9	0.6	1.5	No
212	Irvine Boulevard	Market Place to SR-261 SB Off-Ramp	70.3	70.9	70.9	0.6	1.5	No
213	Irvine Boulevard	Jeffrey Road to Groveland	70.6	70.8	71.0	0.4	1.5	No
214	Irvine Boulevard	Bake Parkway to Lake Forest Drive	69.8	70.6	70.7	0.9	1.5	No
215	Irvine Boulevard	Independence Way (The Groves)/ The Groves to Jeffrey Road	70.2	70.6	70.6	0.4	1.5	No
216	Irvine Boulevard	Chinon (B Street) to Merit	70.2	70.5	70.5	0.3	1.5	No



Table 15

217	Irvine Boulevard	SR-261 NB Off-Ramp to Central Park	70.1	70.5	70.5	0.4	1.5	No
218	Irvine Boulevard	Pueblo Norte to Independence Way (The Groves)/ Parkwood	69.9	70.3	70.4	0.5	1.5	No
219	Irvine Boulevard	Yale Avenue to Pueblo Norte	69.9	70.3	70.4	0.5	1.5	No
220	Irvine Boulevard	Modjeska to Pusan Way	70.0	70.2	70.2	0.2	1.5	No
221	Irvine Boulevard	Central Park Avenue to Culver Drive	69.5	69.9	69.9	0.4	1.5	No
222	Irvine Boulevard	Parker to Bake Parkway	69.0	69.5	69.7	0.7	1.5	No
223	Irvine Boulevard	Alton Parkway to Fairbanks	68.4	68.6	68.6	0.2	1.5	No
224	Irvine Center Drive	Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp	71.3	72.6	72.7	1.4	1.5	No
225	Irvine Center Drive	Orange Tree to Valley Oak Drive	69.7	71.8	71.9	2.2	1.5	Yes
226	Irvine Center Drive	I-405 SB Off-Ramp to Research	70.9	72.1	72.3	1.4	1.5	No
227	Irvine Center Drive	Irvine Valley College to Orange Tree	69.7	71.7	71.8	2.1	1.5	Yes
228	Irvine Center Drive	Fontaine Avenue to Jeffrey Road	69.5	71.5	71.5	2.0	1.5	Yes
229	Irvine Center Drive	Culver Drive to Deerwood	69.7	71.4	71.5	1.8	1.5	Yes
230	Irvine Center Drive	Deerwood to Yale Avenue	69.6	71.4	71.4	1.8	1.5	Yes
231	Irvine Center Drive	Yale Avenue to Fontaine Avenue	69.4	71.4	71.5	2.1	1.5	Yes
232	Irvine Center Drive	Jeffrey Road to Irvine Valley College	69.7	71.3	71.4	1.7	1.5	Yes
233	Irvine Center Drive	Alton Parkway to Spectrum	68.9	71.0	71.1	2.2	1.5	Yes
234	Irvine Center Drive	Spectrum to Pacifica	68.9	71.0	71.0	2.1	1.5	Yes
235	Irvine Center Drive	Hearthstone to Culver Drive	69.2	70.9	70.9	1.7	1.5	Yes
236	Irvine Center Drive	Charter to Barranca Parkway	68.1	70.6	70.7	2.6	1.5	Yes
237	Irvine Center Drive	Jamboree Road to Harvard Avenue	69.7	70.5	70.5	0.8	1.5	No
238	Irvine Center Drive	Pacifica to Entertainment (Enterprise/Fortune)	69.1	70.5	70.6	1.5	1.5	Yes
239	Irvine Center Drive	Valley Oak Drive to Sand Canyon Avenue	68.1	70.5	70.5	2.4	1.5	Yes
240	Irvine Center Drive	Harvard Avenue to Hearthstone	69.2	70.2	70.2	1.0	1.5	No
241	Irvine Center Drive	Research to Hubble	67.9	69.7	70.0	2.1	1.5	Yes
242	Irvine Center Drive	Barranca Parkway to Gateway Boulevard	66.9	69.8	69.9	3.0	1.5	Yes
243	Irvine Center Drive	Bake Parkway to Muller	67.9	69.7	69.9	2.0	1.5	Yes
244	Irvine Center Drive	Discovery to Charter	67.3	69.8	69.9	2.6	1.5	Yes
245	Irvine Center Drive	Hubble to Bake Parkway	67.8	69.5	69.6	1.8	1.5	Yes
246	Irvine Center Drive	Muller to Tesla	67.7	69.3	69.4	1.7	1.5	Yes
247	Irvine Center Drive	Sand Canyon Avenue to Odyssey	67.6	69.2	69.2	1.6	1.5	Yes
248	Irvine Center Drive	Tesla to Scientific Way	67.1	68.9	69.1	2.0	1.5	Yes
249	Irvine Center Drive	Scientific Way to Lake Forest Drive	67.2	68.7	68.9	1.7	1.5	Yes
250	Irvine Center Drive	Gateway Boulevard to Alton Parkway	66.7	68.6	68.7	2.0	1.5	Yes
251	Irvine Center Drive	Laguna Canyon Road to Discovery	66.8	68.6	68.7	1.9	1.5	Yes
252	Irvine Center Drive	Odyssey to Laguna Canyon Road	66.8	68.5	68.6	1.8	1.5	Yes
253	Irvine Center Drive (Edinger)	Redhill Avenue to Jamboree Road	69.6	70.9	70.9	1.3	1.5	No

Table 15

254	Jamboree Road	I-5 SB Off-Ramp to I-5 NB Off-Ramp	74.3	74.5	74.5	0.2	1.5	No
255	Jamboree Road	I-405 SB Off-Ramp to I-405 NB Off Ramp	75.1	75.6	75.6	0.5	1.5	No
256	Jamboree Road	Walnut Avenue to Michelle Drive	73.5	73.9	73.9	0.4	1.5	No
257	Jamboree Road	I-405 NB Off-Ramp to Main Street	76.5	77.0	77.0	0.5	1.5	No
258	Jamboree Road	Michelle Drive to I-5 SB Off-Ramp	73.5	73.6	73.7	0.2	1.5	No
259	Jamboree Road	Main Street to Kelvin Avenue	75.7	76.3	76.4	0.7	1.5	No
260	Jamboree Road	Michelson Drive to I-405 SB Off-Ramp	73.6	74.3	74.3	0.7	1.5	No
261	Jamboree Road	Kelvin Avenue to McGaw Avenue	75.5	76.0	76.0	0.5	1.5	No
262	Jamboree Road	McGaw Avenue to Alton Parkway	75.4	75.9	76.0	0.6	1.5	No
263	Jamboree Road	Birch Street to Campus Drive	72.1	72.9	73.0	0.9	1.5	No
264	Jamboree Road	Dupont Drive to Michelson Drive	73.3	73.8	73.9	0.6	1.5	No
265	Jamboree Road	Alton Parkway to Beckman	75.2	75.5	75.6	0.4	1.5	No
266	Jamboree Road	Fairchild Road to Birch Street	72.2	73.4	73.5	1.3	1.5	No
267	Jamboree Road	Beckman to Barranca Parkway	75.0	75.2	75.3	0.3	1.5	No
268	Jamboree Road	I-5 NB Off-Ramp to El Camino Real	74.9	75.1	75.1	0.2	1.5	No
269	Jamboree Road	Campus Drive to Dupont Drive	72.5	73.1	73.1	0.6	1.5	No
270	Jamboree Road	El Camino Real to West Drive	74.9	75.0	74.9	0.0	1.5	No
271	Jamboree Road	West Drive to Bryan Avenue	74.9	75.0	75.0	0.1	1.5	No
272	Jamboree Road	Bryan Avenue to Irvine Boulevard	74.5	74.7	74.6	0.1	1.5	No
273	Jamboree Road	Koll Center to Fairchild Road	71.7	72.7	72.7	1.0	1.5	No
274	Jamboree Road	MacArthur Boulevard to Koll Center	71.8	72.6	72.7	0.9	1.5	No
275	Jamboree Road	Irvine Boulevard to Portola Parkway	70.0	70.7	70.7	0.7	1.5	No
276	Jamboree Road	Warner Avenue to Edinger Avenue	79.0	79.1	79.1	0.1	1.5	No
277	Jamboree Road	Barranca Parkway to Warner Avenue	78.1	78.3	78.3	0.2	1.5	No
278	Jamboree Road	Edinger Avenue to Walnut Avenue	77.8	78.0	78.0	0.2	1.5	No
279	Jeffrey Road	Walnut Avenue to I-5 NB Off-Ramp	70.9	71.3	71.4	0.5	1.5	No
280	Jeffrey Road	I-5 NB Off-Ramp to Roosevelt	71.8	72.2	72.3	0.5	1.5	No
281	Jeffrey Road	Poplar (Meadows) to Walnut Avenue	70.4	70.9	70.9	0.5	1.5	No
282	Jeffrey Road	Alton Parkway to Barranca Parkway	70.3	70.8	70.8	0.5	1.5	No
283	Jeffrey Road	Irvine Center Drive to Poplar (Meadows)	70.2	70.7	70.7	0.5	1.5	No
284	Jeffrey Road	I-405 NB Off-Ramp to Quail Creek	70.4	70.7	70.8	0.4	1.5	No
285	Jeffrey Road	Barranca Parkway to Irvine Valley College	70.3	70.6	70.6	0.3	1.5	No
286	Jeffrey Road	Quail Creek to Alton Parkway	70.4	70.6	70.7	0.3	1.5	No
287	Jeffrey Road	Irvine Valley College to Irvine Center Drive	70.1	70.4	70.4	0.3	1.5	No
288	Jeffrey Road	Trabuco Road to Hideaway	69.4	69.6	69.7	0.3	1.5	No
289	Jeffrey Road	Hideaway to Bryan Avenue	69.4	69.6	69.7	0.3	1.5	No
290	Jeffrey Road	Roosevelt to Grove	70.0	70.4	70.4	0.4	1.5	No

Table 15

291	Jeffrey Road	Grove to Trabuco Road	70.0	70.2	70.2	0.2	1.5	No
292	Jeffrey Road	Bryan Avenue to Irvine Boulevard	68.1	68.5	68.5	0.4	1.5	No
293	Jeffrey Road	Encore to Portola Parkway	64.0	65.8	65.6	1.6	3.0	No
294	Jeffrey Road	Irvine Boulevard to Encore	64.0	65.5	65.4	1.4	3.0	No
295	Jeronimo Road	Goodyear to Bake Parkway	64.4	64.6	64.5	0.1	3.0	No
296	Jeronimo Road	Alton Parkway to Goodyear	64.1	64.3	64.3	0.2	3.0	No
297	Laguna Canyon Road	Old Laguna Canyon Road to Lake Forest Drive	72.6	73.3	73.4	0.8	1.5	No
298	Laguna Canyon Road	Laguna Canyon Freeway to Quail Hill Parkway	67.7	69.9	70.0	2.3	1.5	Yes
299	Laguna Canyon Road	Discovery to Sand Canyon Avenue	64.8	69.1	69.1	4.3	3.0	Yes
300	Laguna Canyon Road	I-405 Overcrossing to Pasteur	66.0	67.9	68.0	2.0	1.5	Yes
301	Laguna Canyon Road	Irvine Center Drive to Discovery	63.6	67.5	67.5	3.9	3.0	Yes
302	Laguna Canyon Road	Quail Hill Parkway to I-405 Overcrossing	66.0	67.9	68.0	2.0	1.5	Yes
303	Laguna Canyon Road	Pasteur to Alton Parkway	65.5	66.9	67.0	1.5	1.5	Yes
304	Laguna Canyon Road	Waterworks to Irvine Center Drive	64.5	66.4	66.4	1.9	3.0	No
305	Laguna Canyon Road	Alton Parkway to Barranca Parkway	64.8	66.1	66.1	1.3	3.0	No
306	Laguna Canyon Road	Barranca Parkway to Waterworks	63.9	65.6	65.6	1.7	3.0	No
307	Lake Forest Drive	Hidden Canyon to Laguna Canyon Road	68.3	69.3	69.5	1.2	1.5	No
308	Lake Forest Drive	Bake Parkway to Hidden Canyon (Romano)	68.3	69.3	69.5	1.2	1.5	No
309	Lake Forest Drive	Tesla to Bake Parkway	65.3	66.3	66.6	1.3	1.5	No
310	Lake Road	Alton Parkway to Barranca Parkway	59.0	59.2	59.2	0.2	5.0	No
311	Lynx	Irvine Boulevard to Astor	0.0	53.2	53.2	53.2	5.0	Yes
312	MacArthur Boulevard	I-405 SB Off-Ramp to Michelson Drive	76.0	76.7	76.7	0.7	1.5	No
313	MacArthur Boulevard	Main Street to I-405 NB Off-Ramp	75.8	76.6	76.7	0.9	1.5	No
314	MacArthur Boulevard	I-405 NB Off-Ramp and I-405 SB Off-Ramp	75.7	76.6	76.6	0.9	1.5	No
315	MacArthur Boulevard	Jamboree Road to Fairchild Road	69.7	69.9	69.9	0.2	1.5	No
316	MacArthur Boulevard	Fairchild Road to University Drive	69.7	69.9	69.8	0.1	1.5	No
317	MacArthur Boulevard	Fitch to Red Hill Avenue	70.4	70.5	70.5	0.1	1.5	No
318	MacArthur Boulevard	Michelson Drive to Douglas	71.3	72.1	72.2	0.9	1.5	No
319	MacArthur Boulevard	Douglas to Campus Drive	71.3	72.1	72.2	0.9	1.5	No
320	MacArthur Boulevard	Skypark to Main Street	69.0	69.5	69.5	0.5	1.5	No
321	MacArthur Boulevard	Redhill Avenue to Skypark	68.0	68.3	68.4	0.4	1.5	No
322	MacArthur Boulevard	Birch Street to Jamboree Road	66.5	67.0	67.1	0.6	1.5	No
323	MacArthur Boulevard	Campus Drive to Birch Street	68.5	69.3	69.4	0.9	1.5	No
324	Main Street	Gillette Avenue to Von Karman Avenue	69.4	70.7	70.8	1.4	1.5	No
325	Main Street	MacArthur Boulevard to Mercantile	69.4	70.2	70.3	0.9	1.5	No
326	Main Street	Executive Park to MacArthur Boulevard	67.7	68.4	68.4	0.7	1.5	No
327	Main Street	Von Karman Avenue to Cartwright	67.2	68.3	68.4	1.2	1.5	No

Table 15

328	Main Street	McDermott to Red Hill Avenue	67.9	68.1	68.1	0.2	1.5	No
329	Main Street	Red Hill Avenue to Executive Circle	67.7	68.0	68.0	0.3	1.5	No
330	Main Street	Jamboree Road to Union	67.4	67.8	67.8	0.4	1.5	No
331	Main Street	Culver Drive to West Yale Loop	67.0	67.1	67.2	0.2	1.5	No
332	Main Street	Siglo to Jamboree Road	67.2	67.7	67.7	0.5	1.5	No
333	Main Street	Veneto to Harvard Avenue	67.4	67.5	67.5	0.1	1.5	No
334	Main Street	Paseo Westpark to Culver Drive	66.2	66.4	66.3	0.1	1.5	No
335	Main Street	Harvard Avenue to San Mateo	66.2	66.4	66.3	0.1	1.5	No
336	Marine Way	Sand Canyon Avenue to Ridge Valley (O Street)	67.8	72.3	72.3	4.5	1.5	Yes
337	Marine Way	Alton Parkway to Bake Parkway	0.0	69.3	69.3	69.3	5.0	Yes
338	Marine Way	Lynx to Barranca Parkway	0.0	69.3	69.3	69.3	5.0	Yes
339	Marine Way	County Access to Treble	59.3	68.4	68.4	9.1	5.0	Yes
340	Marine Way	Ridge Valley (O Street) to Skyhawk	62.0	68.2	68.2	6.2	3.0	Yes
341	Marine Way	Skyhawk to County Access	59.3	67.1	67.2	7.9	5.0	Yes
342	Marine Way	Barranca Parkway to Alton Parkway	52.7	66.8	66.8	14.1	5.0	Yes
343	Marine Way	Treble to Lynx	0.0	66.4	66.4	66.4	5.0	Yes
344	McGaw Avenue	Von Karman Avenue to Jamboree Road	62.2	64.3	64.3	2.1	3.0	No
345	McGaw Avenue	Red Hill Avenue to Von Karman Avenue	62.1	64.1	64.2	2.1	3.0	No
346	McGaw Avenue	Daimler to Red Hill Avenue	61.0	62.4	62.5	1.5	3.0	No
347	McGaw Avenue	Jamboree Road to Murphy Avenue	57.6	59.3	59.4	1.8	5.0	No
348	Meadowood	Culver Drive to Canyonwood	59.5	59.8	59.8	0.3	5.0	No
349	Meridian	Spectrum to Alton Parkway	54.7	55.3	55.5	0.8	5.0	No
350	Meridian	Alton Parkway to Gateway Boulevard	53.5	54.6	54.7	1.2	5.0	No
351	Merit	Irvine Boulevard to Cadence	59.3	57.9	58.0	-1.3	5.0	No
352	Michelson Drive	Riparian to Harvard Avenue	66.7	68.3	68.3	1.6	1.5	Yes
353	Michelson Drive	Almond Tree Lane to Yale Avenue	66.3	67.1	67.1	0.8	1.5	No
354	Michelson Drive	Von Karman Avenue to Obsidian	66.7	68.0	68.0	1.3	1.5	No
355	Michelson Drive	Parkside to Culver Drive	66.2	67.8	67.8	1.6	1.5	Yes
356	Michelson Drive	Gillman to Seton/Sandburg Way	66.3	66.8	66.8	0.5	1.5	No
357	Michelson Drive	Carlson to Prince	65.4	67.3	67.3	1.9	1.5	Yes
358	Michelson Drive	MacArthur Boulevard to Dupont Drive	66.7	67.3	67.3	0.6	1.5	No
359	Michelson Drive	Harvard Avenue to Parkside	66.2	66.8	66.8	0.6	1.5	No
360	Michelson Drive	Bixby to Von Karman Avenue	64.9	66.7	66.7	1.8	3.0	No
361	Michelson Drive	Jamboree Road to Carlson	68.0	69.6	69.6	1.6	1.5	Yes
362	Michelson Drive	Teller to Jamboree Road	68.7	69.6	69.6	0.9	1.5	No
363	Michelson Drive	Jordan East to University Drive	66.6	66.9	66.9	0.3	1.5	No
364	Michelson Drive	Culver Drive to Angell	65.9	66.2	66.2	0.3	1.5	No

Table 15

365	Modjeska (A Street)	Portola Springs to Irvine Boulevard	70.7	71.7	71.7	1.0	1.5	No
366	Modjeska (A Street)	South of Irvine Boulevard	61.4	61.1	61.0	-0.4	3.0	No
367	Muirlands Boulevard	Bake Parkway to City Limits	66.4	67.1	67.2	0.8	1.5	No
368	Muirlands Boulevard	Alton Parkway to Sterling	66.1	66.3	66.3	0.2	1.5	No
369	Muirlands Boulevard	Wrigley to Bake Parkway	66.1	66.3	66.3	0.2	1.5	No
370	Newport Coast Drive	SR-73 NB Off-Ramp to Turtle Ridge	65.9	66.6	66.6	0.7	1.5	No
371	Newport Coast Drive	Turtle Crest to Bonita Canyon Drive	65.0	65.1	65.1	0.1	1.5	No
372	Nightmist	Sand Canyon Avenue to Tulip (Road C)	60.8	61.9	61.8	1.0	3.0	No
373	Northwood	Yale Avenue to Savannah	62.3	62.5	62.5	0.2	3.0	No
374	Northwood	Goldrush to Yale Avenue	60.5	61.5	61.5	1.0	3.0	No
375	Oak Canyon Drive	Valley Oak Drive to Sand Canyon Avenue	66.2	69.2	69.2	3.0	1.5	Yes
376	Pacifica	Gateway to Barranca Parkway	63.3	65.2	65.2	1.9	3.0	No
377	Pacifica	Alton Parkway to Gateway	61.8	64.0	64.0	2.2	3.0	No
378	Pacifica	Irvine Center Drive to Fortune Drive (Spectrum Center Drive)	61.7	62.7	62.8	1.1	3.0	No
379	Pacifica	Meridian to Alton Parkway	58.1	60.8	60.8	2.7	5.0	No
380	Park Place	Christamon South to Yale Avenue	56.8	57.0	57.0	0.2	5.0	No
381	Portola Parkway	Bee Canyon Access Road to Sand Canyon Avenue	70.3	71.5	71.7	1.4	1.5	No
382	Portola Parkway	Jeffrey Road to Bee Canyon Access Road	70.3	71.5	71.7	1.4	1.5	No
383	Portola Parkway	Arrowhead to Ridge Valley Parkway	69.6	71.4	71.5	1.9	1.5	Yes
384	Portola Parkway	Sand Canyon Avenue to Arrowhead	69.6	71.0	71.1	1.5	1.5	Yes
385	Portola Parkway	Portola Springs to SR-241 SB Off-Ramp	65.5	70.1	70.1	4.6	1.5	Yes
386	Portola Parkway	Gatepark to Culver Drive	69.6	70.6	70.7	1.1	1.5	No
387	Portola Parkway	ETC-6 (SR-261) NB Off-Ramp to Gatepark	69.6	70.5	70.7	1.1	1.5	No
388	Portola Parkway	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	69.6	70.4	70.5	0.9	1.5	No
389	Portola Parkway	Jamboree Road to Bellevue	69.6	70.4	70.5	0.9	1.5	No
390	Portola Parkway	Bellevue to ETC-6 (SR-261) SB Off-Ramp	69.6	70.3	70.4	0.8	1.5	No
391	Portola Parkway	Yale Avenue to Jeffrey Road	68.6	70.1	70.2	1.6	1.5	Yes
392	Portola Parkway	Culver Drive to Yale Avenue	68.6	69.6	69.7	1.1	1.5	No
393	Portola Parkway	Silverado to Portola Springs	66.5	68.5	68.6	2.1	1.5	Yes
394	Pusan	Irvine Boulevard to Cadence	54.0	56.2	56.1	2.1	5.0	No
395	Quail Hill Parkway	Shady Canyon Drive to Passage	67.3	67.4	67.4	0.1	1.5	No
396	Quail Hill Parkway	East Knollcrest to Laguna Canyon Road	64.8	65.5	65.5	0.7	3.0	No
397	Quassar Drive (Spectrum)	Irvine Center Drive to Spectrum Center Drive (Fortune)	54.4	54.8	54.9	0.5	5.0	No
398	Red Hill Avenue	MacArthur Boulevard to McGaw Avenue	70.8	71.5	71.6	0.8	1.5	No
399	Red Hill Avenue	I-405 Over Crossing to Main Street	69.6	70.1	70.2	0.6	1.5	No
400	Red Hill Avenue	Alton Parkway to Deere Avenue	69.5	70.0	70.1	0.6	1.5	No
401	Red Hill Avenue	McGaw Avenue to Alton Parkway	69.3	69.9	70.0	0.7	1.5	No

Table 15

402	Red Hill Avenue	Deere Avenue to Barranca Parkway	69.3	69.8	69.9	0.6	1.5	No
403	Red Hill Avenue	Skypark East to MacArthur Boulevard	70.2	71.3	71.4	1.2	1.5	No
404	Red Hill Avenue	Main Street to Skypark East	69.6	70.6	70.8	1.2	1.5	No
405	Research Drive	Hubble to Bake Parkway	65.4	69.5	69.5	4.1	1.5	Yes
406	Research Drive	Scientific to Lake Forest Drive	65.6	67.4	67.8	2.2	1.5	Yes
407	Research Drive	Bake Parkway to Muller	66.2	66.6	66.7	0.5	1.5	No
408	Research Drive	Irvine Center Drive to Bunsen	64.9	65.6	65.7	0.8	3.0	No
409	Ridge Valley (O Street)	Irvine Boulevard to Trabuco Road (Great Park Boulevard)	65.5	67.3	67.3	1.8	1.5	Yes
410	Ridge Valley (O Street)	Portola Parkway to Irvine Boulevard	65.9	66.4	66.4	0.5	1.5	No
411	Ridge Valley (O Street)	Trabuco Road (Great Park Boulevard) to Marine Way	65.8	66.0	66.0	0.2	1.5	No
412	Ridge Valley (O Street)	Ranchland to Portola Parkway	58.0	58.1	58.1	0.1	5.0	No
413	Ridgeline Drive	Concordia East to University Drive	67.7	68.7	68.7	1.0	1.5	No
414	Ridgeline Drive	Turtle Rock Drive to San Simeon	67.7	68.4	68.4	0.7	1.5	No
415	Rockfield Avenue	Whatney to McLaren	66.3	67.6	67.7	1.4	1.5	No
416	Rockfield Avenue	Bake Parkway to Whatney	62.5	64.1	64.2	1.7	3.0	No
417	Rockfield Avenue	Thomas to Bake Parkway	62.5	63.1	63.1	0.6	3.0	No
418	Roosevelt	Jeffrey Road to Vision	65.2	66.5	66.6	1.4	1.5	No
419	Roosevelt	Yale Avenue to Van Buren	67.9	68.2	68.2	0.3	1.5	No
420	Roosevelt	Vision to Bay Tree	64.5	66.2	66.4	1.9	3.0	No
421	Roosevelt	Nimitz to Jeffrey Road	65.2	65.9	65.9	0.7	1.5	No
422	Roosevelt	Tulip (Road C) to Sand Canyon Avenue	63.7	65.6	65.7	2.0	3.0	No
423	Royal Oak	Alton Parkway to Eaglecreek	63.8	64.0	64.0	0.2	3.0	No
424	Sand Canyon Avenue	Oak Canyon Drive to Burt Road	70.7	72.1	72.1	1.4	1.5	No
425	Sand Canyon Avenue	Irvine Center Drive to Oak Canyon Drive	70.6	71.9	72.0	1.4	1.5	No
426	Sand Canyon Avenue	I-405 NB Off-Ramp to Alton Parkway	73.6	74.6	74.6	1.0	1.5	No
427	Sand Canyon Avenue	Burt Road to I-5 SB Off-Ramp	71.2	72.7	72.7	1.5	1.5	Yes
428	Sand Canyon Avenue	Marine to I-5 NB Off-Ramp	72.7	74.6	74.8	2.1	1.5	Yes
429	Sand Canyon Avenue	Trabuco Road to Towngate	70.0	71.1	71.3	1.3	1.5	No
430	Sand Canyon Avenue	Barranca Parkway to Waterworks	69.2	70.8	70.9	1.7	1.5	Yes
431	Sand Canyon Avenue	I-5 SB Off-Ramp to Marine	72.7	73.8	74.0	1.3	1.5	No
432	Sand Canyon Avenue	Hospital to Barranca Parkway	69.3	70.6	70.6	1.3	1.5	No
433	Sand Canyon Avenue	Nightmist to Roosevelt	73.3	73.5	73.5	0.2	1.5	No
434	Sand Canyon Avenue	I-405 SB Off-Ramp to I-405 NB Off-Ramp	72.4	73.5	73.5	1.1	1.5	No
435	Sand Canyon Avenue	I-5 NB Off-Ramp to Nightmist	73.2	73.5	73.7	0.5	1.5	No
436	Sand Canyon Avenue	Towngate to Irvine Boulevard	69.3	70.4	70.7	1.4	1.5	No
437	Sand Canyon Avenue	Waterworks to Irvine Center Drive	69.2	70.2	70.3	1.1	1.5	No
438	Sand Canyon Avenue	Irvine Boulevard to Portola Parkway	68.0	69.2	70.4	2.4	1.5	Yes

Table 15

439	Sand Canyon Avenue	Roosevelt to Trabuco Road	72.6	72.8	72.8	0.2	1.5	No
440	Sand Canyon Avenue	Alton Parkway to Hospital	69.7	70.6	70.6	0.9	1.5	No
441	Sand Canyon/Shady Canyon	Quail Hill Parkway to I-405 SB Ramps	71.3	71.7	71.8	0.5	1.5	No
442	Scientific Way	Irvine Center Drive to Wald	54.6	55.0	54.9	0.3	5.0	No
443	Shady Canyon Drive	Culver Drive/Bonita Canyon Drive to Cloverfield	68.6	69.2	69.2	0.6	1.5	No
444	Shady Canyon Drive	Bommer Canyon Road to Sunnyhill	67.1	67.5	67.6	0.5	1.5	No
445	Skyhawk	Great Park Boulevard to Marine Way	52.8	59.6	59.6	6.8	5.0	Yes
446	Southwood	Yale Avenue to Colt	60.5	60.5	60.6	0.1	3.0	No
447	Southwood	Challenger to Yale Avenue	59.9	60.2	60.3	0.4	5.0	No
448	Spectrum Center Drive (Fortune Drive)	Pacifica to Quassar Drive (Spectrum )	61.4	61.9	62.0	0.6	3.0	No
449	Spectrum Center Drive (Fortune Drive)	Quassar Drive (Spectrum ) to Gatewayb	62.0	62.4	62.5	0.5	3.0	No
450	Sunnyhill	Shady Canyon Drive to Turtle Rock Drive	56.9	57.6	57.6	0.7	5.0	No
451	Technology Drive	Barranca Parkway to Alton Parkway	67.0	70.6	70.6	3.6	1.5	Yes
452	Technology Drive	Old Laguna Canyon Road to I-5/SR-133 Undercrossing	63.2	69.2	69.3	6.1	3.0	Yes
453	Technology Drive	I-5/SR-133 to Barranca Parkway	62.8	69.1	69.1	6.3	3.0	Yes
454	Technology Drive	Ada to Alton Parkway	57.8	63.0	63.1	5.3	5.0	Yes
455	Toledo Way	Bake Parkway to City Limits	65.5	65.7	65.7	0.2	1.5	No
456	Toledo Way	Goodyear to Bake Parkway	64.5	64.7	64.7	0.2	3.0	No
457	Toledo Way	Alton Parkway to Parker	63.9	64.3	64.4	0.5	3.0	No
458	Trabuco Road	Keystone to Sand Canyon Avenue	66.7	67.1	67.2	0.5	1.5	No
459	Trabuco Road	Jeffrey Road to Keystone	66.7	66.9	66.9	0.2	1.5	No
460	Trabuco Road	Culver Drive to I-5 NB Off-Ramp	66.3	66.7	66.8	0.5	1.5	No
461	Trabuco Road	Monroe to Yale Avenue	66.3	66.6	66.7	0.4	1.5	No
462	Trabuco Road	I-5 NB Off-Ramp to Monroe	66.3	66.5	66.6	0.3	1.5	No
463	Trabuco Road	Yale Avenue to Remington	65.7	66.2	66.3	0.6	1.5	No
464	Trabuco Road	Remington to Jeffrey Road	65.7	66.0	66.1	0.4	1.5	No
465	Turtle Ridge Drive	Federation Way to Bonita Canyon	0.0	68.8	68.7	68.7	5.0	Yes
466	Turtle Rock Drive	Ridgeline to Willowleaf	66.9	67.8	67.8	0.9	1.5	No
467	Turtle Rock Drive	Silkwood to Sunnyhill	67.0	67.7	67.8	0.8	1.5	No
468	Turtle Rock Drive	Canyon Park to Ridgeline	66.7	67.0	67.0	0.3	1.5	No
469	Turtle Rock Drive	Sunnyhill to Southernwood	63.9	64.0	64.0	0.1	3.0	No
470	Turtle Rock Drive	Campus Drive to Hillgate	63.8	64.1	64.0	0.2	3.0	No
471	Turtle Rock Drive	Paseo Segovia to Campus Drive	65.3	65.4	65.4	0.1	1.5	No
472	University Drive	Golden Glow to Yale Avenue	72.2	72.9	73.0	0.8	1.5	No
473	University Drive	Ridgeline to Michelson Drive	72.1	72.5	72.6	0.5	1.5	No
474	University Drive	Culver Drive to Golden Glow	72.1	72.8	72.9	0.8	1.5	No
475	University Drive	Yale Avenue to Ridgeline	72.0	72.3	72.4	0.4	1.5	No

Table 15

476	University Drive	Michelson Drive to I-405 SB Off-Ramp	72.3	72.7	72.7	0.4	1.5	No
477	University Drive	Mesa to Campus Drive	73.3	74.5	74.6	1.3	1.5	No
478	University Drive	MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	73.3	74.4	74.6	1.3	1.5	No
479	University Drive	California Avenue to Mesa	73.3	74.3	74.4	1.1	1.5	No
480	University Drive	Campus Drive to Harvard Avenue	69.5	70.6	70.7	1.2	1.5	No
481	University Drive	SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	70.4	71.5	71.7	1.3	1.5	No
482	University Drive	SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps	69.2	70.1	70.3	1.1	1.5	No
483	University Drive	San Joaquin to Culver Drive	68.7	69.7	69.8	1.1	1.5	No
484	University Drive	Harvard Avenue to San Joaquin	68.7	69.7	69.8	1.1	1.5	No
485	Valley Oak Drive	Hawkcreek to Barranca Parkway	63.0	68.0	68.0	5.0	3.0	Yes
486	Valley Oak Drive	Irvine Center Drive to Oak Canyon Drive	65.2	69.0	69.1	3.9	1.5	Yes
487	Valley Oak Drive	Barranca Parkway to Irvine Center Drive	62.9	66.7	66.8	3.9	3.0	Yes
488	Valley Oak Drive	Alton Parkway to Hawkcreek	63.8	64.8	64.8	1.0	3.0	No
489	Von Karman Avenue	Marriott to Morse Avenue	68.9	70.9	70.9	2.0	1.5	Yes
490	Von Karman Avenue	Michelson Drive to Quartz	68.8	70.7	70.8	2.0	1.5	Yes
491	Von Karman Avenue	McGaw Avenue to Alton Parkway	69.3	70.7	70.7	1.4	1.5	No
492	Von Karman Avenue	Alton Parkway to Barranca Parkway	68.4	70.3	70.4	2.0	1.5	Yes
493	Von Karman Avenue	Main Street to Anchor	69.2	70.6	70.6	1.4	1.5	No
494	Von Karman Avenue	Anchor to McGaw Avenue	69.2	70.4	70.5	1.3	1.5	No
495	Von Karman Avenue	Morse to Main Street	69.2	70.2	70.2	1.0	1.5	No
496	Von Karman Avenue	Martin to Dupont Drive	67.8	69.5	69.6	1.8	1.5	Yes
497	Von Karman Avenue	Campus Drive to Martin	67.8	69.5	69.5	1.7	1.5	Yes
498	Von Karman Avenue	Dupont Drive to Michelson Drive	67.8	69.5	69.5	1.7	1.5	Yes
499	Walnut Avenue	Jeffrey Road to I-5 SB Off-Ramp	68.9	70.9	70.9	2.0	1.5	Yes
500	Walnut Avenue	Myford Road to Jamboree Road SB Off-Ramp	68.6	69.1	69.1	0.5	1.5	No
501	Walnut Avenue	The Mall Street to Culver Drive	68.2	68.7	68.8	0.6	1.5	No
502	Walnut Avenue	Harvard Avenue to The Mall Street	68.2	68.7	68.7	0.5	1.5	No
503	Walnut Avenue	Franciscan Street to Ravenwood Street	68.0	68.4	68.5	0.5	1.5	No
504	Walnut Avenue	Ravenwood Street to Yale Avenue	68.0	68.4	68.3	0.3	1.5	No
505	Walnut Avenue	Culver Drive to Franciscan Street	68.0	68.3	68.4	0.4	1.5	No
506	Walnut Avenue	Peters Canyon Road to Harvard Avenue	67.0	67.9	68.0	1.0	1.5	No
507	Walnut Avenue	Jamboree Road NB Off-Ramp to Peters Canyon Road	67.0	67.8	67.8	0.8	1.5	No
508	Walnut Avenue	Yale Avenue to Kazan Street	66.3	67.1	67.2	0.9	1.5	No
509	Walnut Avenue	Wisteria to Jeffrey Road	66.3	67.1	67.2	0.9	1.5	No
510	Warner Avenue	Jamboree Road SB Off-ramp to Construction North	69.6	70.2	70.1	0.5	1.5	No
511	Warner Avenue	Construction North to Harvard Avenue	67.8	68.6	68.5	0.7	1.5	No
512	Warner Avenue	Harvard Avenue to Paseo Westpark	66.1	67.0	67.0	0.9	1.5	No



Table 15

513	Warner Avenue	Santa Ynez to Culver Drive	65.1	66.0	66.0	0.9	1.5	No
514	Warner Avenue	Culver Drive to West Yale Loop	64.9	65.7	65.7	0.8	3.0	No
515	West Yale Loop	Alton Parkway to Blue Lake North	63.3	64.0	64.0	0.7	3.0	No
516	West Yale Loop	Eagle Run to Main Street	63.3	63.8	63.9	0.6	3.0	No
517	West Yale Loop	Thunder Run to Yale Avenue	62.7	63.9	63.9	1.2	3.0	No
518	West Yale Loop	Main Street to Timber Run	62.7	62.9	62.8	0.1	3.0	No
519	West Yale Loop	Yale Avenue to Shorebird	61.8	62.9	63.0	1.2	3.0	No
520	West Yale Loop	Warner Avenue to Stonecreek South	61.8	62.6	62.6	0.8	3.0	No
521	West Yale Loop	Barranca Parkway to Alton Parkway	61.7	62.4	62.4	0.7	3.0	No
522	West Yale Loop	Stonecreek North to Warner Avenue	61.8	62.4	62.5	0.7	3.0	No
523	West Yale Loop	Birdsong to Barranca Parkway	61.8	62.3	62.3	0.5	3.0	No
524	Westwood	Yorktown to Bryan Avenue	63.2	63.6	63.5	0.3	3.0	No
525	Westwood	Bryan Avenue to Leaf	61.3	61.5	61.5	0.2	3.0	No
526	Yale Avenue	Deerfield Avenue to Winvale Avenue	68.5	68.6	68.6	0.1	1.5	No
527	Yale Avenue	Hicks Canyon Drive to Meadowood	67.2	67.3	67.3	0.1	1.5	No
528	Yale Avenue	Walnut Avenue to Roosevelt	70.7	71.0	71.0	0.3	1.5	No
529	Yale Avenue	Roosevelt to Trabuco Road	66.9	67.0	67.1	0.2	1.5	No
530	Yale Avenue	Irvine Center Drive to Deerfield Avenue	66.5	66.9	66.9	0.4	1.5	No
531	Yale Avenue	West Yale Loop to Irvine Center Drive	65.0	66.3	66.4	1.4	1.5	No
532	Yale Avenue	Winvale Avenue to Karen Ann Lane	65.6	65.7	65.7	0.1	1.5	No
533	Yale Avenue	Karen Ann Lane to Walnut Avenue	65.6	65.7	65.7	0.1	1.5	No
534	Yale Avenue	Trabuco Road to Southwood	65.1	65.6	65.7	0.6	1.5	No
535	Yale Avenue	Southwood to Bryan Avenue	65.1	65.4	65.5	0.4	1.5	No
536	Yale Avenue	Northwood to Irvine Boulevard	64.8	65.1	65.1	0.3	3.0	No
537	Yale Avenue	Bryan Avenue to Monticello	64.8	65.0	65.0	0.2	3.0	No
538	Yale Avenue	Irvine Boulevard to Park Place	64.1	64.3	64.3	0.2	3.0	No
539	Yale Avenue	University Drive to Royce	57.9	63.4	63.5	5.6	5.0	Yes
540	Yale Court	Arborwood to Portola Parkway	60.0	60.3	60.3	0.3	1.5	No
<sup>1</sup> Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses. <sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use. <sup>3</sup> Does the Project create an incremental noise level increase exceeding the significance criteria?								

Table 16

Table 16: Current General Plan and Cumulative Conservative Plan Traffic Noise Level Increases

ID	Road	Segment	CNEL at Receiving Land Use (dBA) <sup>2</sup>				Incremental Noise Level Increase Threshold <sup>3</sup>	
			Current General Plan	Conservative	Cumulative Conservative	Cumulative Increase	Limit	Exceeded?
1	Ada	Barranca Parway to Marine Way	0.0	70.8	70.8	70.8	5.0	Yes
2	Ada	Alton Parkway to Barranca Parkway	67.1	69.3	69.3	2.2	1.5	Yes
3	Alton Parkway	Enterprise to I-5 NB Off-Ramp	72.6	74.1	74.1	1.5	1.5	Yes
4	Alton Parkway	I-5 NB Off-Ramp to Technology Drive West	73.3	74.8	74.8	1.5	1.5	Yes
5	Alton Parkway	East Yale Loop to Jeffrey Road	71.5	71.8	71.8	0.3	1.5	No
6	Alton Parkway	Gateway Boulevard to Enterprise	70.5	72.0	72.0	1.5	1.5	Yes
7	Alton Parkway	Jeffrey Road to Royal Oak	70.4	70.9	70.9	0.5	1.5	No
8	Alton Parkway	Daimler Street to Red Hill Avenue	70.4	70.7	70.7	0.3	1.5	No
9	Alton Parkway	Culver Drive to West Yale Loop	70.5	70.7	70.7	0.2	1.5	No
10	Alton Parkway	West Yale Loop to Lake Road	70.5	70.7	70.7	0.2	1.5	No
11	Alton Parkway	Technology Drive West to Ada	71.4	72.6	72.6	1.2	1.5	No
12	Alton Parkway	Creek Road to East Yale Loop	70.3	70.6	70.7	0.4	1.5	No
13	Alton Parkway	Red Hill Avenue to Von Karman Avenue	69.9	70.5	70.6	0.7	1.5	No
14	Alton Parkway	Lake Road to Creek Road	70.3	70.4	70.4	0.1	1.5	No
15	Alton Parkway	Telemetry to Banting	69.8	70.4	70.5	0.7	1.5	No
16	Alton Parkway	Irvine Boulevard to Commercentre	71.0	70.8	70.8	-0.2	1.5	No
17	Alton Parkway	Jenner to Telemetry	69.7	70.4	70.4	0.7	1.5	No
18	Alton Parkway	Irvine Center Drive to Gateway Boulevard	69.8	71.2	71.3	1.5	1.5	Yes
19	Alton Parkway	Sand Canyon Avenue to Hospital	73.6	73.7	73.7	0.1	1.5	No
20	Alton Parkway	Laguna Canyon Road to Jenner	69.7	70.3	70.3	0.6	1.5	No
21	Alton Parkway	Technology Drive East to Barranca Pkwy/Muirlands Blvd	70.4	71.2	71.2	0.8	1.5	No
22	Alton Parkway	Royal Oak to Valley Oak Drive	69.7	70.1	70.1	0.4	1.5	No
23	Alton Parkway	Banting to Pacifica	69.3	70.0	70.1	0.8	1.5	No
24	Alton Parkway	Barranca Pkwy/Muirlands Blvd to Jeronimo Road	70.3	70.9	71.0	0.7	1.5	No
25	Alton Parkway	Ada to Technology Drive East	70.2	70.7	70.7	0.5	1.5	No
26	Alton Parkway	Von Karman Avenue to Jamboree Road	69.2	69.7	69.8	0.6	1.5	No
27	Alton Parkway	Jeronimo Road to Hughes	69.9	69.9	69.9	0.0	1.5	No
28	Alton Parkway	Hughes to Morgan	69.7	69.8	69.8	0.1	1.5	No
29	Alton Parkway	Morgan to Toledo Way	69.0	69.1	69.1	0.1	1.5	No
30	Alton Parkway	San Marino to Culver Drive	69.0	69.2	69.2	0.2	1.5	No
31	Alton Parkway	Jamboree Road to Murphy Avenue	68.6	69.0	69.2	0.6	1.5	No

Table 16

32	Alton Parkway	Hospital to Laguna Canyon Road	71.5	72.0	72.1	0.6	1.5	No
33	Alton Parkway	Valley Oak Drive to Sand Canyon Avenue	71.4	71.8	71.9	0.5	1.5	No
34	Alton Parkway	Murphy Avenue to Harvard Avenue	68.5	68.8	69.0	0.5	1.5	No
35	Alton Parkway	Foster to Irvine Boulevard	69.0	68.7	68.7	-0.3	1.5	No
36	Alton Parkway	Fairbanks to Foster	68.7	68.5	68.6	-0.1	1.5	No
37	Alton Parkway	Toledo Way to Berteia	68.4	68.4	68.4	0.0	1.5	No
38	Alton Parkway	Pacifica to Meridian	70.7	71.7	71.7	1.0	1.5	No
39	Alton Parkway	Berteia to Fairbanks	68.3	68.3	68.3	0.0	1.5	No
40	Alton Parkway	Meridian to Irvine Center Drive	67.5	68.3	68.3	0.8	1.5	No
41	Alton Parkway	Paseo Westpark to San Marino	68.0	68.3	68.3	0.3	1.5	No
42	Alton Parkway	Harvard Avenue to Paseo Westpark	67.1	67.7	67.9	0.8	1.5	No
43	Astor	Lynx to Fairbanks	66.9	67.1	67.1	0.2	1.5	No
44	Astor	Cadence to Lynx	66.0	65.9	65.9	-0.1	1.5	No
45	Bake Parkway	I-5 NB Off-Ramp to Rockfield Boulevard	76.4	76.7	76.7	0.3	1.5	No
46	Bake Parkway	Muirlands Boulevard to Jeronimo Road	72.9	73.0	73.1	0.2	1.5	No
47	Bake Parkway	Rockfield Boulevard to Muirlands Boulevard	75.1	75.1	75.1	0.0	1.5	No
48	Bake Parkway	Jeronimo Road to Toledo Way	72.0	72.1	72.2	0.2	1.5	No
49	Bake Parkway	Toledo Way to Cromwell	71.6	71.7	71.7	0.1	1.5	No
50	Bake Parkway	Cromwell to Irvine Boulevard	71.6	71.6	71.6	0.0	1.5	No
51	Bake Parkway	Research Drive to I-5 SB Off-Ramp	69.3	69.6	69.7	0.4	1.5	No
52	Bake Parkway	Irvine Center Drive to Research Drive	64.6	64.9	65.1	0.5	3.0	No
53	Bake Parkway	Lake Forest Drive to Irvine Center Drive	63.0	63.4	63.7	0.7	3.0	No
54	Banting	Alton Parkway to Barranca Parkway	59.3	60.3	60.3	1.0	5.0	No
55	Barranca Parkway	Pacifica to Irvine Center Drive	71.7	73.3	73.3	1.6	1.5	Yes
56	Barranca Parkway	Banting to Pacifica	71.8	72.8	72.8	1.0	1.5	No
57	Barranca Parkway	I-5 HOV Ramp to Technology Drive West	70.9	73.0	73.0	2.1	1.5	Yes
58	Barranca Parkway	Technology Drive West to Ada	71.5	72.7	72.7	1.2	1.5	No
59	Barranca Parkway	Irvine Center Drive to I-5 HOV Ramp	70.8	72.6	72.6	1.8	1.5	Yes
60	Barranca Parkway	Culver Drive to West Yale Loop	72.0	72.3	72.3	0.3	1.5	No
61	Barranca Parkway	East Yale Loop to Jeffrey Road	71.7	72.2	72.3	0.6	1.5	No
62	Barranca Parkway	West Yale Loop to Lake Road	71.8	72.1	72.1	0.3	1.5	No
63	Barranca Parkway	Ada to Alton Parkway	72.3	72.1	72.2	-0.1	1.5	No
64	Barranca Parkway	Lake Road to Creek Road	71.4	71.8	71.8	0.4	1.5	No
65	Barranca Parkway	Red Hill Avenue to Armstrong Avenue	74.4	74.7	74.8	0.4	1.5	No
66	Barranca Parkway	Discovery/Herchel to Banting	71.1	71.6	71.7	0.6	1.5	No
67	Barranca Parkway	Lyon to East Yale Loop	71.1	71.6	71.6	0.5	1.5	No
68	Barranca Parkway	Creek Road to Lyon	71.1	71.5	71.5	0.4	1.5	No

Table 16

69	Barranca Parkway	Von Karman Avenue to Jamboree Road	72.4	72.8	72.8	0.4	1.5	No
70	Barranca Parkway	Sand Canyon Avenue to Laguna Canyon Road	70.6	71.1	71.1	0.5	1.5	No
71	Barranca Parkway	Armstrong Avenue to Von Karman Avenue	72.1	72.5	72.5	0.4	1.5	No
72	Barranca Parkway	Valley Oak Drive to Sand Canyon Avenue	70.4	70.8	70.8	0.4	1.5	No
73	Barranca Parkway	Jamboree Road to Construction Circle	70.7	71.2	71.2	0.5	1.5	No
74	Barranca Parkway	Santa Rosa to Culver Drive	70.6	71.0	71.1	0.5	1.5	No
75	Barranca Parkway	FedEx to Discovery/Herchel	69.6	70.5	70.6	1.0	1.5	No
76	Barranca Parkway	Jeffrey Road to Valley Oak Drive	69.7	70.4	70.5	0.8	1.5	No
77	Barranca Parkway	Laguna Canyon Road to FedEx	69.4	70.4	70.4	1.0	1.5	No
78	Barranca Parkway	Pullman Street to Red Hill Avenue	73.4	73.7	73.6	0.2	1.5	No
79	Barranca Parkway	Construction Circle to Fire Station	70.1	70.6	70.6	0.5	1.5	No
80	Barranca Parkway	Fire Station to Harvard Avenue	70.1	70.6	70.6	0.5	1.5	No
81	Barranca Parkway	Paseo Westpark to Santa Rosa	70.1	70.6	70.6	0.5	1.5	No
82	Barranca Parkway	Harvard Avenue to Paseo Westpark	69.7	70.2	70.3	0.6	1.5	No
83	Bay Tree	Trabuco Road to Roosevelt	57.2	57.1	57.1	-0.1	5.0	No
84	Beacon	Ridge Valley to Benchmark	59.0	59.7	59.7	0.7	5.0	No
85	Benchmark (LN Street)	Ridge Valley (O Street) to Bosque	56.7	56.5	56.5	-0.2	5.0	No
86	Bison Avenue	SR-73 NB Off-Ramp to California Avenue	69.7	69.6	69.7	0.0	1.5	No
87	Bonita Canyon Drive	MacArthur Boulevard to SR-73	70.2	70.3	70.3	0.1	1.5	No
88	Bonita Canyon Drive	Turtle Ridge to Shady Canyon Drive	68.5	68.6	68.6	0.1	1.5	No
89	Bonita Canyon Drive	Newport Coast Drive to Turtle Ridge	68.2	68.2	68.2	0.0	1.5	No
90	Bonita Canyon Drive	SR-73 NB Off-Ramp to Newport Coast Drive	67.9	68.0	68.1	0.2	1.5	No
91	Bosque	Cadence to Great Park Boulevard	64.8	65.2	65.2	0.4	3.0	No
92	Bosque	Irvine Boulevard to Benchmark (LN Street)	63.0	63.6	63.6	0.6	3.0	No
93	Bosque	Benchmark to Cadence	63.0	63.2	63.2	0.2	3.0	No
94	Bosque	Great Park Boulevard to Beacon	56.9	56.8	56.8	-0.1	5.0	No
95	Bosque	Beacon to S 5th Street	55.9	56.2	56.2	0.3	5.0	No
96	Bryan Avenue	Jamboree Road to Market Place	68.9	69.0	69.1	0.2	1.5	No
97	Bryan Avenue	Market Place to El Camino Real	68.9	68.9	68.8	-0.1	1.5	No
98	Bryan Avenue	Rubicon to Culver Drive	68.9	68.8	68.9	0.0	1.5	No
99	Bryan Avenue	El Camino Real to Rubicon	68.9	68.8	68.9	0.0	1.5	No
100	Bryan Avenue	Eastwood to Jeffrey Road	66.3	67.1	67.2	0.9	1.5	No
101	Bryan Avenue	Westwood to Yale Avenue	66.3	66.8	66.8	0.5	1.5	No
102	Bryan Avenue	Culver Drive to Westwood	66.4	66.7	66.7	0.3	1.5	No
103	Bryan Avenue	Yale Avenue to Eastwood	66.0	66.7	66.8	0.8	1.5	No
104	Cadence	Pusan to Chinon	64.1	65.6	65.6	1.5	3.0	No
105	Cadence	Bosque to Pusan	64.2	65.3	65.3	1.1	3.0	No

Table 16

106	Cadence	Ridge Valley (O Street) to Bosque	64.0	64.0	64.0	0.0	3.0	No
107	Cadence	Chinon to Merit	59.1	62.3	62.4	3.3	5.0	No
108	Cadence	Merit to Astor	58.6	59.4	59.4	0.8	5.0	No
109	California Avenue	University Drive to Academy Way	66.2	66.2	67.3	1.1	1.5	No
110	California Avenue	Campus Drive to Harvard Avenue	64.1	64.2	64.2	0.1	3.0	No
111	California Avenue	Theory to Bison Avenue	64.0	63.9	64.0	0.0	3.0	No
112	Campus Drive	Carlson Avenue to University Drive	73.0	73.2	73.3	0.3	1.5	No
113	Campus Drive	University Drive to Bridge Road	71.7	71.8	71.8	0.1	1.5	No
114	Campus Drive	Jamboree Road to Carlson Avenue	71.3	71.5	71.6	0.3	1.5	No
115	Campus Drive	Stanford Court to Berkeley Avenue	71.0	71.1	71.1	0.1	1.5	No
116	Campus Drive	California Avenue to Culver Drive	70.9	70.9	70.9	0.0	1.5	No
117	Campus Drive	Berkeley Avenue to Cornell	69.9	70.0	69.9	0.0	1.5	No
118	Campus Drive	Martin to Von Karman Avenue	68.7	69.1	69.2	0.5	1.5	No
119	Campus Drive	Culver Drive to Paseo Montoya (Turtle Rock Drive)	68.6	68.7	68.7	0.1	1.5	No
120	Campus Drive	Von Karman Avenue to Teller Avenue	68.1	68.4	68.5	0.4	1.5	No
121	Campus Drive	MacArthur Boulevard to Martin	68.1	68.2	68.3	0.2	1.5	No
122	Campus Drive	Teller Avenue to Jamboree Road	67.2	67.5	67.6	0.4	1.5	No
123	Carlson Avenue	Michelson Drive to Campus Drive	67.8	67.9	67.9	0.1	1.5	No
124	Chinon	Irvine Boulevard to Cadence	58.3	58.8	58.8	0.5	5.0	No
125	Creek Road	Alton Parkway to Barranca Parkway	56.0	56.3	56.3	0.3	5.0	No
126	Culver Drive	Michelson Drive to I-405 SB Off-Ramp	73.7	74.0	73.9	0.2	1.5	No
127	Culver Drive	I-405 SB Off-Ramp to I-405 NB Off Ramp	73.9	73.9	73.8	-0.1	1.5	No
128	Culver Drive	I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)	73.9	73.9	73.9	0.0	1.5	No
129	Culver Drive	Scottsdale Drive to I-5 SB Off- Ramp	73.9	73.8	73.8	-0.1	1.5	No
130	Culver Drive	I-405 NB Off-Ramp to San Leandro	73.6	73.6	73.6	0.0	1.5	No
131	Culver Drive	San Leandro to Main Street	73.3	73.3	73.3	0.0	1.5	No
132	Culver Drive	Harvard Avenue to University Drive	73.3	73.4	73.4	0.1	1.5	No
133	Culver Drive	Trabuco Road to Farwell Avenue	74.4	74.2	74.2	-0.2	1.5	No
134	Culver Drive	Alton Parkway to Barranca Parkway	73.2	73.2	73.2	0.0	1.5	No
135	Culver Drive	Main Street to Alton Parkway	73.1	73.1	73.1	0.0	1.5	No
136	Culver Drive	Warner Avenue to Irvine Center Drive	73.0	73.0	73.0	0.0	1.5	No
137	Culver Drive	Walnut Avenue to Scottsdale Dive	72.9	72.9	72.8	-0.1	1.5	No
138	Culver Drive	Barranca Parkway to Warner Avenue	72.8	72.8	72.9	0.1	1.5	No
139	Culver Drive	Shady Canyon Drive to Palo Verde	72.1	72.0	72.0	-0.1	1.5	No
140	Culver Drive	Deerfield Avenue to Walnut Avenue	72.6	72.5	72.5	-0.1	1.5	No
141	Culver Drive	Sandburg Way to Michelson Drive	72.5	72.5	72.5	0.0	1.5	No
142	Culver Drive	Irvine Center Drive to Deerfield Avenue	72.4	72.4	72.4	0.0	1.5	No

Table 16

143	Culver Drive	Palo Verde to Campus Drive	71.6	71.6	71.6	0.0	1.5	No
144	Culver Drive	University Drive to Sandburg Way	72.2	72.2	72.2	0.0	1.5	No
145	Culver Drive	Farwell Avenue to Bryan Avenue	73.3	73.2	73.2	-0.1	1.5	No
146	Culver Drive	Campus Drive to High School	72.1	72.1	72.1	0.0	1.5	No
147	Culver Drive	High School to Harvard Avenue	72.0	72.0	72.0	0.0	1.5	No
148	Culver Drive	Bryan Avenue to Florence	71.8	71.8	71.8	0.0	1.5	No
149	Culver Drive	Portola Parkway to Settlers	71.1	71.2	71.2	0.1	1.5	No
150	Culver Drive	Florence to Irvine Boulevard	71.7	71.7	71.7	0.0	1.5	No
151	Culver Drive	Irvine Boulevard to Viewpark	70.5	70.5	70.5	0.0	1.5	No
152	Culver Drive	Viewpark to Meadowood	70.5	70.4	70.4	-0.1	1.5	No
153	Culver Drive	Settlers to Furrow	68.3	68.5	68.6	0.3	1.5	No
154	Culver Drive	Meadowood to Portola Parkway	69.0	69.0	69.0	0.0	1.5	No
155	Discovery Drive	Irvine Center Drive to Laguna Canyon Road	63.8	65.5	65.5	1.7	3.0	No
156	Discovery Drive	Waterworks Way to Irvine Center Drive	60.7	63.6	63.6	2.9	3.0	No
157	East Yale Loop	Alton Parkway to Witherspoon	65.3	65.6	65.6	0.3	1.5	No
158	East Yale Loop	Osborn Street to Barranca Parkway	65.0	65.4	65.4	0.4	1.5	No
159	East Yale Loop	Yale Avenue to Springbrook South	64.3	65.0	65.0	0.7	3.0	No
160	East Yale Loop	Springbrook North to Alton Parkway	63.4	63.6	63.6	0.2	3.0	No
161	East Yale Loop	Woodspring to Yale Avenue	62.5	62.8	62.9	0.4	3.0	No
162	East Yale Loop	Barranca Parkway to Eastshore	62.5	62.4	62.5	0.0	3.0	No
163	Eastwood	Bryan Avenue to Monticello	60.5	60.8	60.9	0.4	3.0	No
164	Eastwood	Columbus to Bryan Avenue	58.8	58.8	58.9	0.1	5.0	No
165	El Camino Real	Jamboree Road to Alliance (SR-261 Bridge)	67.0	67.1	67.2	0.2	1.5	No
166	El Camino Real North	El Camino Real to Bryan Avenue	62.4	62.4	62.4	0.0	3.0	No
167	Fairbanks	Alton Parkway to Astor	69.7	69.8	69.9	0.2	1.5	No
168	Fairbanks	Irvine Boulevard to Alton Parkway	66.8	66.9	66.9	0.1	1.5	No
169	Fairchild Road	MacArthur Boulevard to Jamboree Road	64.0	64.0	64.0	0.0	3.0	No
170	Gateway Boulevard	Alton Parkway to Irvine Center Drive	62.8	63.5	63.5	0.7	3.0	No
171	Gateway Boulevard	Spectrum Center Drive (Fortune Drive) to Alton Parkway	61.6	62.3	62.2	0.6	3.0	No
172	Gateway Boulevard	Irvine Center Drive to Meridian	58.4	59.2	59.2	0.8	5.0	No
173	Great Park Boulevard	Sand Canyon to Ridge Valley	74.1	74.6	74.6	0.5	1.5	No
174	Great Park Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	69.7	70.3	70.4	0.7	1.5	No
175	Great Park Boulevard (EB)	Bosque to Skyhawk	68.0	69.0	69.1	1.1	1.5	No
176	Great Park Boulevard (WB)	Bosque to Skyhawk	67.6	68.4	68.4	0.8	1.5	No
177	Harvard Avenue	University Drive to Michelson Drive	71.8	72.0	72.1	0.3	1.5	No
178	Harvard Avenue	Michelson Drive to Coronado	70.2	70.4	70.5	0.3	1.5	No
179	Harvard Avenue	San Marino to Alton Parkway	70.0	70.2	70.3	0.3	1.5	No

Table 16

180	Harvard Avenue	Coronado to Main Street	70.0	70.1	70.2	0.2	1.5	No
181	Harvard Avenue	San Carlo to San Marino	69.9	70.1	70.2	0.3	1.5	No
182	Harvard Avenue	Main Street to San Carlo	69.8	70.0	70.1	0.3	1.5	No
183	Harvard Avenue	Alton Parkway to San Leon	68.8	68.8	68.6	-0.2	1.5	No
184	Harvard Avenue	San Juan to Barranca Parkway	68.6	68.8	68.7	0.1	1.5	No
185	Harvard Avenue	San Leon to San Juan	68.6	68.6	68.6	0.0	1.5	No
186	Harvard Avenue	Irvine Center Drive to Deerfield Avenue	67.4	67.5	67.5	0.1	1.5	No
187	Harvard Avenue	Deerfield Avenue to Poplar Street	67.4	67.4	67.4	0.0	1.5	No
188	Harvard Avenue	Barranca Parkway to Warner Avenue	67.9	67.9	67.9	0.0	1.5	No
189	Harvard Avenue	Bridge Road to University Drive	67.6	67.9	67.8	0.2	1.5	No
190	Harvard Avenue	Paseo Westpark to Irvine Center Drive	67.7	67.8	67.8	0.1	1.5	No
191	Harvard Avenue	Poplar Street to Walnut Avenue	68.7	68.8	68.9	0.2	1.5	No
192	Harvard Avenue	California Avenue to Berkeley Avenue	67.0	67.4	67.3	0.3	1.5	No
193	Harvard Avenue	Culver Drive to California Avenue	66.9	67.3	67.3	0.4	1.5	No
194	Harvard Avenue	Berkeley to Bridge Road	67.0	67.2	67.2	0.2	1.5	No
195	Harvard Avenue	Warner Avenue to Paseo Westpark	66.8	66.7	66.8	0.0	1.5	No
196	Hicks Canyon Drive	Delamesa to Yale Avenue	58.4	58.2	58.2	-0.2	5.0	No
197	Hornet (5th St)	Ridge Valley (O Street) to Bosque	57.5	57.5	57.5	0.0	5.0	No
198	Hubble	Irvine Center Drive to Bunsen	55.7	55.9	56.1	0.4	5.0	No
199	Irvine Boulevard	SR-133 NB Off- Ramp to Ridge Valley (O Street)	72.3	72.2	72.3	0.0	1.5	No
200	Irvine Boulevard	SR-133 SB Off-Ramp to SR-133 NB Off-Ramp	72.2	72.2	72.2	0.0	1.5	No
201	Irvine Boulevard	Sand Canyon to SR-133 SB Off-Ramp	73.1	73.0	73.0	-0.1	1.5	No
202	Irvine Boulevard	Merit to Alton	71.6	71.6	71.6	0.0	1.5	No
203	Irvine Boulevard	Journey to Sand Canyon Avenue	71.6	71.6	71.7	0.1	1.5	No
204	Irvine Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	71.2	71.1	71.2	0.0	1.5	No
205	Irvine Boulevard	Pusan Way to Chinon (B Street)	71.0	71.0	71.0	0.0	1.5	No
206	Irvine Boulevard	Palo Lado to Yale Avenue	70.6	71.2	71.3	0.7	1.5	No
207	Irvine Boulevard	Culver Drive to Palo Lado	70.6	71.2	71.3	0.7	1.5	No
208	Irvine Boulevard	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.6	71.1	71.1	0.5	1.5	No
209	Irvine Boulevard	Old Myford Road to Market Place	70.5	71.1	71.2	0.7	1.5	No
210	Irvine Boulevard	Bosque (LY Street) to Modjeska	70.7	71.1	71.2	0.5	1.5	No
211	Irvine Boulevard	Jamboree Road to Old Myford Road	70.5	71.0	71.1	0.6	1.5	No
212	Irvine Boulevard	Market Place to SR-261 SB Off-Ramp	70.4	71.0	71.1	0.7	1.5	No
213	Irvine Boulevard	Jeffrey Road to Groveland	70.8	70.9	71.1	0.3	1.5	No
214	Irvine Boulevard	Bake Parkway to Lake Forest Drive	70.9	70.5	70.6	-0.3	1.5	No
215	Irvine Boulevard	Independence Way (The Groves)/ The Groves to Jeffrey Road	70.5	70.7	70.8	0.3	1.5	No
216	Irvine Boulevard	Chinon (B Street) to Merit	70.5	70.5	70.5	0.0	1.5	No

Table 16

217	Irvine Boulevard	SR-261 NB Off-Ramp to Central Park	70.2	70.6	70.7	0.5	1.5	No
218	Irvine Boulevard	Pueblo Norte to Independence Way (The Groves)/ Parkwood	70.1	70.5	70.6	0.5	1.5	No
219	Irvine Boulevard	Yale Avenue to Pueblo Norte	70.1	70.4	70.5	0.4	1.5	No
220	Irvine Boulevard	Modjeska to Pusan Way	70.2	70.2	70.2	0.0	1.5	No
221	Irvine Boulevard	Central Park Avenue to Culver Drive	69.6	70.0	70.0	0.4	1.5	No
222	Irvine Boulevard	Parker to Bake Parkway	69.6	69.6	69.7	0.1	1.5	No
223	Irvine Boulevard	Alton Parkway to Fairbanks	68.6	68.6	68.6	0.0	1.5	No
224	Irvine Center Drive	Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp	72.5	72.7	72.8	0.3	1.5	No
225	Irvine Center Drive	Orange Tree to Valley Oak Drive	71.4	72.0	72.0	0.6	1.5	No
226	Irvine Center Drive	I-405 SB Off-Ramp to Research	72.1	72.2	72.3	0.2	1.5	No
227	Irvine Center Drive	Irvine Valley College to Orange Tree	71.3	71.9	71.9	0.6	1.5	No
228	Irvine Center Drive	Fontaine Avenue to Jeffrey Road	71.0	71.7	71.7	0.7	1.5	No
229	Irvine Center Drive	Culver Drive to Deerwood	71.0	71.6	71.6	0.6	1.5	No
230	Irvine Center Drive	Deerwood to Yale Avenue	71.0	71.6	71.6	0.6	1.5	No
231	Irvine Center Drive	Yale Avenue to Fontaine Avenue	70.9	71.6	71.7	0.8	1.5	No
232	Irvine Center Drive	Jeffrey Road to Irvine Valley College	71.1	71.5	71.5	0.4	1.5	No
233	Irvine Center Drive	Alton Parkway to Spectrum	70.4	71.3	71.4	1.0	1.5	No
234	Irvine Center Drive	Spectrum to Pacifica	70.3	71.3	71.3	1.0	1.5	No
235	Irvine Center Drive	Hearthstone to Culver Drive	70.6	71.0	71.0	0.4	1.5	No
236	Irvine Center Drive	Charter to Barranca Parkway	70.2	70.9	71.0	0.8	1.5	No
237	Irvine Center Drive	Jamboree Road to Harvard Avenue	70.3	70.6	70.6	0.3	1.5	No
238	Irvine Center Drive	Pacifica to Entertainment (Enterprise/Fortune)	70.3	70.7	70.7	0.4	1.5	No
239	Irvine Center Drive	Valley Oak Drive to Sand Canyon Avenue	70.0	70.7	70.7	0.7	1.5	No
240	Irvine Center Drive	Harvard Avenue to Hearthstone	70.0	70.3	70.3	0.3	1.5	No
241	Irvine Center Drive	Research to Hubble	69.8	69.8	70.0	0.2	1.5	No
242	Irvine Center Drive	Barranca Parkway to Gateway Boulevard	69.4	70.1	70.2	0.8	1.5	No
243	Irvine Center Drive	Bake Parkway to Muller	69.9	69.7	69.8	-0.1	1.5	No
244	Irvine Center Drive	Discovery to Charter	69.3	70.2	70.2	0.9	1.5	No
245	Irvine Center Drive	Hubble to Bake Parkway	69.7	69.5	69.6	-0.1	1.5	No
246	Irvine Center Drive	Muller to Tesla	69.5	69.3	69.4	-0.1	1.5	No
247	Irvine Center Drive	Sand Canyon Avenue to Odyssey	69.0	69.4	69.4	0.4	1.5	No
248	Irvine Center Drive	Tesla to Scientific Way	69.2	68.9	69.1	-0.1	1.5	No
249	Irvine Center Drive	Scientific Way to Lake Forest Drive	68.9	68.7	68.9	0.0	1.5	No
250	Irvine Center Drive	Gateway Boulevard to Alton Parkway	68.3	68.8	68.9	0.6	1.5	No
251	Irvine Center Drive	Laguna Canyon Road to Discovery	68.2	68.8	68.9	0.7	1.5	No
252	Irvine Center Drive	Odyssey to Laguna Canyon Road	68.3	68.8	68.9	0.6	1.5	No
253	Irvine Center Drive (Edinger)	Redhill Avenue to Jamboree Road	70.8	71.0	71.1	0.3	1.5	No



Table 16

254	Jamboree Road	I-5 SB Off-Ramp to I-5 NB Off-Ramp	74.5	74.5	74.5	0.0	1.5	No
255	Jamboree Road	I-405 SB Off-Ramp to I-405 NB Off Ramp	75.4	75.6	75.7	0.3	1.5	No
256	Jamboree Road	Walnut Avenue to Michelle Drive	73.8	73.9	73.9	0.1	1.5	No
257	Jamboree Road	I-405 NB Off-Ramp to Main Street	76.9	77.0	77.0	0.1	1.5	No
258	Jamboree Road	Michelle Drive to I-5 SB Off-Ramp	73.6	73.6	73.6	0.0	1.5	No
259	Jamboree Road	Main Street to Kelvin Avenue	76.2	76.4	76.4	0.2	1.5	No
260	Jamboree Road	Michelson Drive to I-405 SB Off-Ramp	74.2	74.4	74.4	0.2	1.5	No
261	Jamboree Road	Kelvin Avenue to McGaw Avenue	75.8	76.0	76.1	0.3	1.5	No
262	Jamboree Road	McGaw Avenue to Alton Parkway	75.8	76.0	76.0	0.2	1.5	No
263	Jamboree Road	Birch Street to Campus Drive	72.6	73.0	73.1	0.5	1.5	No
264	Jamboree Road	Dupont Drive to Michelson Drive	73.5	73.9	74.0	0.5	1.5	No
265	Jamboree Road	Alton Parkway to Beckman	75.4	75.6	75.7	0.3	1.5	No
266	Jamboree Road	Fairchild Road to Birch Street	73.2	73.5	73.6	0.4	1.5	No
267	Jamboree Road	Beckman to Barranca Parkway	75.2	75.3	75.3	0.1	1.5	No
268	Jamboree Road	I-5 NB Off-Ramp to El Camino Real	75.1	75.1	75.1	0.0	1.5	No
269	Jamboree Road	Campus Drive to Dupont Drive	72.7	73.2	73.2	0.5	1.5	No
270	Jamboree Road	El Camino Real to West Drive	75.1	75.0	74.9	-0.2	1.5	No
271	Jamboree Road	West Drive to Bryan Avenue	75.1	74.9	74.9	-0.2	1.5	No
272	Jamboree Road	Bryan Avenue to Irvine Boulevard	74.8	74.6	74.6	-0.2	1.5	No
273	Jamboree Road	Koll Center to Fairchild Road	72.5	72.8	72.9	0.4	1.5	No
274	Jamboree Road	MacArthur Boulevard to Koll Center	72.5	72.8	72.8	0.3	1.5	No
275	Jamboree Road	Irvine Boulevard to Portola Parkway	70.8	70.7	70.7	-0.1	1.5	No
276	Jamboree Road	Warner Avenue to Edinger Avenue	79.1	79.2	79.2	0.1	1.5	No
277	Jamboree Road	Barranca Parkway to Warner Avenue	78.2	78.3	78.4	0.2	1.5	No
278	Jamboree Road	Edinger Avenue to Walnut Avenue	77.9	78.0	78.0	0.1	1.5	No
279	Jeffrey Road	Walnut Avenue to I-5 NB Off-Ramp	71.3	71.4	71.4	0.1	1.5	No
280	Jeffrey Road	I-5 NB Off-Ramp to Roosevelt	72.2	72.3	72.3	0.1	1.5	No
281	Jeffrey Road	Poplar (Meadows) to Walnut Avenue	70.8	70.9	71.0	0.2	1.5	No
282	Jeffrey Road	Alton Parkway to Barranca Parkway	70.5	70.9	70.9	0.4	1.5	No
283	Jeffrey Road	Irvine Center Drive to Poplar (Meadows)	70.6	70.7	70.8	0.2	1.5	No
284	Jeffrey Road	I-405 NB Off-Ramp to Quail Creek	70.5	70.9	71.0	0.5	1.5	No
285	Jeffrey Road	Barranca Parkway to Irvine Valley College	70.4	70.7	70.7	0.3	1.5	No
286	Jeffrey Road	Quail Creek to Alton Parkway	70.5	70.8	70.8	0.3	1.5	No
287	Jeffrey Road	Irvine Valley College to Irvine Center Drive	70.3	70.5	70.5	0.2	1.5	No
288	Jeffrey Road	Trabuco Road to Hideaway	69.7	69.6	69.7	0.0	1.5	No
289	Jeffrey Road	Hideaway to Bryan Avenue	69.7	69.6	69.7	0.0	1.5	No
290	Jeffrey Road	Roosevelt to Grove	70.4	70.4	70.4	0.0	1.5	No

Table 16

291	Jeffrey Road	Grove to Trabuco Road	70.3	70.2	70.2	-0.1	1.5	No
292	Jeffrey Road	Bryan Avenue to Irvine Boulevard	68.5	68.5	68.6	0.1	1.5	No
293	Jeffrey Road	Encore to Portola Parkway	66.1	65.8	65.5	-0.6	1.5	No
294	Jeffrey Road	Irvine Boulevard to Encore	65.6	65.5	65.4	-0.2	1.5	No
295	Jeronimo Road	Goodyear to Bake Parkway	64.8	64.6	64.6	-0.2	3.0	No
296	Jeronimo Road	Alton Parkway to Goodyear	64.7	64.3	64.3	-0.4	3.0	No
297	Laguna Canyon Road	Old Laguna Canyon Road to Lake Forest Drive	73.3	73.3	73.4	0.1	1.5	No
298	Laguna Canyon Road	Laguna Canyon Freeway to Quail Hill Parkway	70.0	69.9	70.0	0.0	1.5	No
299	Laguna Canyon Road	Discovery to Sand Canyon Avenue	68.1	69.5	69.5	1.4	1.5	No
300	Laguna Canyon Road	I-405 Overcrossing to Pasteur	68.0	67.9	68.0	0.0	1.5	No
301	Laguna Canyon Road	Irvine Center Drive to Discovery	67.3	69.0	69.0	1.7	1.5	Yes
302	Laguna Canyon Road	Quail Hill Parkway to I-405 Overcrossing	68.0	67.9	68.0	0.0	1.5	No
303	Laguna Canyon Road	Pasteur to Alton Parkway	66.9	67.0	67.1	0.2	1.5	No
304	Laguna Canyon Road	Waterworks to Irvine Center Drive	66.2	67.5	67.5	1.3	1.5	No
305	Laguna Canyon Road	Alton Parkway to Barranca Parkway	66.0	66.3	66.4	0.4	1.5	No
306	Laguna Canyon Road	Barranca Parkway to Waterworks	65.6	66.2	66.3	0.7	1.5	No
307	Lake Forest Drive	Hidden Canyon to Laguna Canyon Road	69.2	69.4	69.6	0.4	1.5	No
308	Lake Forest Drive	Bake Parkway to Hidden Canyon (Romano)	69.2	69.3	69.5	0.3	1.5	No
309	Lake Forest Drive	Tesla to Bake Parkway	66.2	66.4	66.6	0.4	1.5	No
310	Lake Road	Alton Parkway to Barranca Parkway	59.2	59.2	59.2	0.0	5.0	No
311	Lynx	Irvine Boulevard to Astor	53.5	53.2	53.2	-0.3	5.0	No
312	MacArthur Boulevard	I-405 SB Off-Ramp to Michelson Drive	76.4	76.7	76.8	0.4	1.5	No
313	MacArthur Boulevard	Main Street to I-405 NB Off-Ramp	76.5	76.7	76.7	0.2	1.5	No
314	MacArthur Boulevard	I-405 NB Off-Ramp and I-405 SB Off-Ramp	76.4	76.6	76.6	0.2	1.5	No
315	MacArthur Boulevard	Jamboree Road to Fairchild Road	69.9	69.9	69.9	0.0	1.5	No
316	MacArthur Boulevard	Fairchild Road to University Drive	69.8	69.8	69.8	0.0	1.5	No
317	MacArthur Boulevard	Fitch to Red Hill Avenue	70.5	70.5	70.5	0.0	1.5	No
318	MacArthur Boulevard	Michelson Drive to Douglas	71.8	72.2	72.3	0.5	1.5	No
319	MacArthur Boulevard	Douglas to Campus Drive	71.9	72.1	72.3	0.4	1.5	No
320	MacArthur Boulevard	Skypark to Main Street	69.6	69.5	69.5	-0.1	1.5	No
321	MacArthur Boulevard	Redhill Avenue to Skypark	68.5	68.3	68.4	-0.1	1.5	No
322	MacArthur Boulevard	Birch Street to Jamboree Road	66.8	67.1	67.2	0.4	1.5	No
323	MacArthur Boulevard	Campus Drive to Birch Street	69.1	69.3	69.5	0.4	1.5	No
324	Main Street	Gillette Avenue to Von Karman Avenue	70.2	70.9	70.9	0.7	1.5	No
325	Main Street	MacArthur Boulevard to Mercantile	69.9	70.3	70.3	0.4	1.5	No
326	Main Street	Executive Park to MacArthur Boulevard	68.2	68.4	68.5	0.3	1.5	No
327	Main Street	Von Karman Avenue to Cartwright	67.8	68.5	68.5	0.7	1.5	No

Table 16

328	Main Street	McDermott to Red Hill Avenue	68.0	68.1	68.1	0.1	1.5	No
329	Main Street	Red Hill Avenue to Executive Circle	67.9	68.0	68.0	0.1	1.5	No
330	Main Street	Jamboree Road to Union	67.7	67.8	67.9	0.2	1.5	No
331	Main Street	Culver Drive to West Yale Loop	67.2	67.2	67.2	0.0	1.5	No
332	Main Street	Siglo to Jamboree Road	67.4	67.7	67.7	0.3	1.5	No
333	Main Street	Veneto to Harvard Avenue	67.6	67.5	67.6	0.0	1.5	No
334	Main Street	Paseo Westpark to Culver Drive	66.4	66.3	66.4	0.0	1.5	No
335	Main Street	Harvard Avenue to San Mateo	66.3	66.3	66.3	0.0	1.5	No
336	Marine Way	Sand Canyon Avenue to Ridge Valley (O Street)	72.1	72.3	72.3	0.2	1.5	No
337	Marine Way	Alton Parkway to Bake Parkway	69.0	69.4	69.5	0.5	1.5	No
338	Marine Way	Lynx to Barranca Parkway	69.4	69.3	69.3	-0.1	1.5	No
339	Marine Way	County Access to Treble	65.3	68.5	68.5	3.2	1.5	Yes
340	Marine Way	Ridge Valley (O Street) to Skyhawk	67.6	68.3	68.3	0.7	1.5	No
341	Marine Way	Skyhawk to County Access	64.9	67.4	67.4	2.5	3.0	No
342	Marine Way	Barranca Parkway to Alton Parkway	66.3	66.8	66.8	0.5	1.5	No
343	Marine Way	Treble to Lynx	67.1	66.5	66.6	-0.5	1.5	No
344	McGaw Avenue	Von Karman Avenue to Jamboree Road	63.6	64.5	64.5	0.9	3.0	No
345	McGaw Avenue	Red Hill Avenue to Von Karman Avenue	63.6	64.3	64.4	0.8	3.0	No
346	McGaw Avenue	Daimler to Red Hill Avenue	62.4	62.4	62.4	0.0	3.0	No
347	McGaw Avenue	Jamboree Road to Murphy Avenue	59.2	59.6	59.5	0.3	5.0	No
348	Meadowood	Culver Drive to Canyonwood	59.8	59.8	59.6	-0.2	5.0	No
349	Meridian	Spectrum to Alton Parkway	54.9	55.6	55.7	0.8	5.0	No
350	Meridian	Alton Parkway to Gateway Boulevard	54.1	54.7	54.8	0.7	5.0	No
351	Merit	Irvine Boulevard to Cadence	57.3	58.0	58.0	0.7	5.0	No
352	Michelson Drive	Riparian to Harvard Avenue	67.8	68.3	68.3	0.5	1.5	No
353	Michelson Drive	Almond Tree Lane to Yale Avenue	66.7	67.2	67.2	0.5	1.5	No
354	Michelson Drive	Von Karman Avenue to Obsidian	67.8	68.2	68.1	0.3	1.5	No
355	Michelson Drive	Parkside to Culver Drive	66.8	67.8	67.8	1.0	1.5	No
356	Michelson Drive	Gillman to Seton/Sandburg Way	66.5	66.9	66.9	0.4	1.5	No
357	Michelson Drive	Carlson to Prince	67.0	67.3	67.3	0.3	1.5	No
358	Michelson Drive	MacArthur Boulevard to Dupont Drive	67.0	67.5	67.5	0.5	1.5	No
359	Michelson Drive	Harvard Avenue to Parkside	66.8	66.8	66.8	0.0	1.5	No
360	Michelson Drive	Bixby to Von Karman Avenue	66.3	66.8	66.9	0.6	1.5	No
361	Michelson Drive	Jamboree Road to Carlson	69.5	69.6	69.6	0.1	1.5	No
362	Michelson Drive	Teller to Jamboree Road	69.5	69.6	69.6	0.1	1.5	No
363	Michelson Drive	Jordan East to University Drive	66.8	67.1	67.1	0.3	1.5	No
364	Michelson Drive	Culver Drive to Angell	66.1	66.3	66.3	0.2	1.5	No

Table 16

365	Modjeska (A Street)	Portola Springs to Irvine Boulevard	71.7	71.7	71.7	0.0	1.5	No
366	Modjeska (A Street)	South of Irvine Boulevard	60.6	61.1	61.0	0.4	3.0	No
367	Muirlands Boulevard	Bake Parkway to City Limits	67.2	67.2	67.3	0.1	1.5	No
368	Muirlands Boulevard	Alton Parkway to Sterling	66.3	66.3	66.2	-0.1	1.5	No
369	Muirlands Boulevard	Wrigley to Bake Parkway	66.2	66.3	66.3	0.1	1.5	No
370	Newport Coast Drive	SR-73 NB Off-Ramp to Turtle Ridge	66.7	66.6	66.7	0.0	1.5	No
371	Newport Coast Drive	Turtle Crest to Bonita Canyon Drive	65.2	65.1	65.1	-0.1	1.5	No
372	Nightmist	Sand Canyon Avenue to Tulip (Road C)	62.1	61.8	61.7	-0.4	3.0	No
373	Northwood	Yale Avenue to Savannah	62.4	62.5	62.5	0.1	3.0	No
374	Northwood	Goldrush to Yale Avenue	61.3	61.5	61.6	0.3	3.0	No
375	Oak Canyon Drive	Valley Oak Drive to Sand Canyon Avenue	67.4	69.7	69.7	2.3	1.5	Yes
376	Pacifica	Gateway to Barranca Parkway	64.6	65.3	65.3	0.7	3.0	No
377	Pacifica	Alton Parkway to Gateway	63.2	64.1	64.2	1.0	3.0	No
378	Pacifica	Irvine Center Drive to Fortune Drive (Spectrum Center Drive)	63.2	62.7	62.7	-0.5	3.0	No
379	Pacifica	Meridian to Alton Parkway	60.0	60.9	60.9	0.9	1.5	No
380	Park Place	Christamon South to Yale Avenue	57.0	57.0	57.0	0.0	5.0	No
381	Portola Parkway	Bee Canyon Access Road to Sand Canyon Avenue	71.3	71.7	71.8	0.5	1.5	No
382	Portola Parkway	Jeffrey Road to Bee Canyon Access Road	71.3	71.7	71.8	0.5	1.5	No
383	Portola Parkway	Arrowhead to Ridge Valley Parkway	71.3	71.4	71.5	0.2	1.5	No
384	Portola Parkway	Sand Canyon Avenue to Arrowhead	70.9	71.1	71.1	0.2	1.5	No
385	Portola Parkway	Portola Springs to SR-241 SB Off-Ramp	70.0	70.1	70.1	0.1	1.5	No
386	Portola Parkway	Gatepark to Culver Drive	70.3	70.7	70.9	0.6	1.5	No
387	Portola Parkway	ETC-6 (SR-261) NB Off-Ramp to Gatepark	70.2	70.7	70.8	0.6	1.5	No
388	Portola Parkway	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.1	70.6	70.7	0.6	1.5	No
389	Portola Parkway	Jamboree Road to Bellevue	70.1	70.5	70.6	0.5	1.5	No
390	Portola Parkway	Bellevue to ETC-6 (SR-261) SB Off-Ramp	70.0	70.5	70.6	0.6	1.5	No
391	Portola Parkway	Yale Avenue to Jeffrey Road	69.8	70.2	70.4	0.6	1.5	No
392	Portola Parkway	Culver Drive to Yale Avenue	69.4	69.7	69.8	0.4	1.5	No
393	Portola Parkway	Silverado to Portola Springs	68.5	68.6	68.7	0.2	1.5	No
394	Pusan	Irvine Boulevard to Cadence	56.1	56.2	56.1	0.0	5.0	No
395	Quail Hill Parkway	Shady Canyon Drive to Passage	67.6	67.5	67.5	-0.1	1.5	No
396	Quail Hill Parkway	East Knollcrest to Laguna Canyon Road	65.6	65.4	65.4	-0.2	1.5	No
397	Quassar Drive (Spectrum)	Irvine Center Drive to Spectrum Center Drive (Fortune)	54.9	54.9	55.0	0.1	5.0	No
398	Red Hill Avenue	MacArthur Boulevard to McGaw Avenue	71.3	71.6	71.7	0.4	1.5	No
399	Red Hill Avenue	I-405 Over Crossing to Main Street	69.9	70.2	70.3	0.4	1.5	No
400	Red Hill Avenue	Alton Parkway to Deere Avenue	69.9	70.1	70.1	0.2	1.5	No
401	Red Hill Avenue	McGaw Avenue to Alton Parkway	69.7	69.9	70.1	0.4	1.5	No

Table 16

402	Red Hill Avenue	Deere Avenue to Barranca Parkway	69.7	69.8	69.9	0.2	1.5	No
403	Red Hill Avenue	Skypark East to MacArthur Boulevard	71.0	71.4	71.5	0.5	1.5	No
404	Red Hill Avenue	Main Street to Skypark East	70.4	70.8	70.9	0.5	1.5	No
405	Research Drive	Hubble to Bake Parkway	69.5	69.6	69.7	0.2	1.5	No
406	Research Drive	Scientific to Lake Forest Drive	67.6	67.4	67.8	0.2	1.5	No
407	Research Drive	Bake Parkway to Muller	66.5	66.7	66.8	0.3	1.5	No
408	Research Drive	Irvine Center Drive to Bunsen	65.5	65.7	65.8	0.3	1.5	No
409	Ridge Valley (O Street)	Irvine Boulevard to Trabuco Road (Great Park Boulevard)	67.4	67.3	67.3	-0.1	1.5	No
410	Ridge Valley (O Street)	Portola Parkway to Irvine Boulevard	66.5	66.4	66.4	-0.1	1.5	No
411	Ridge Valley (O Street)	Trabuco Road (Great Park Boulevard) to Marine Way	66.0	66.0	66.0	0.0	1.5	No
412	Ridge Valley (O Street)	Ranchland to Portola Parkway	58.1	58.1	58.1	0.0	5.0	No
413	Ridgeline Drive	Concordia East to University Drive	68.6	68.8	68.8	0.2	1.5	No
414	Ridgeline Drive	Turtle Rock Drive to San Simeon	68.2	68.5	68.5	0.3	1.5	No
415	Rockfield Avenue	Whatney to McLaren	67.5	67.7	67.8	0.3	1.5	No
416	Rockfield Avenue	Bake Parkway to Whatney	63.8	64.3	64.4	0.6	3.0	No
417	Rockfield Avenue	Thomas to Bake Parkway	62.6	63.1	63.2	0.6	3.0	No
418	Roosevelt	Jeffrey Road to Vision	66.1	66.6	66.7	0.6	1.5	No
419	Roosevelt	Yale Avenue to Van Buren	68.1	68.3	68.3	0.2	1.5	No
420	Roosevelt	Vision to Bay Tree	65.9	66.3	66.5	0.6	1.5	No
421	Roosevelt	Nimitz to Jeffrey Road	65.8	65.9	65.9	0.1	1.5	No
422	Roosevelt	Tulip (Road C) to Sand Canyon Avenue	65.6	65.6	65.7	0.1	1.5	No
423	Royal Oak	Alton Parkway to Eaglecreek	64.0	64.0	64.0	0.0	3.0	No
424	Sand Canyon Avenue	Oak Canyon Drive to Burt Road	71.9	72.2	72.2	0.3	1.5	No
425	Sand Canyon Avenue	Irvine Center Drive to Oak Canyon Drive	71.6	72.0	72.0	0.4	1.5	No
426	Sand Canyon Avenue	I-405 NB Off-Ramp to Alton Parkway	74.4	74.7	74.7	0.3	1.5	No
427	Sand Canyon Avenue	Burt Road to I-5 SB Off-Ramp	72.6	72.7	72.8	0.2	1.5	No
428	Sand Canyon Avenue	Marine to I-5 NB Off-Ramp	74.6	74.6	74.8	0.2	1.5	No
429	Sand Canyon Avenue	Trabuco Road to Towngate	71.3	71.0	71.2	-0.1	1.5	No
430	Sand Canyon Avenue	Barranca Parkway to Waterworks	70.6	70.9	71.0	0.4	1.5	No
431	Sand Canyon Avenue	I-5 SB Off-Ramp to Marine	73.8	73.9	74.0	0.2	1.5	No
432	Sand Canyon Avenue	Hospital to Barranca Parkway	70.4	70.8	70.9	0.5	1.5	No
433	Sand Canyon Avenue	Nightmist to Roosevelt	73.4	73.5	73.6	0.2	1.5	No
434	Sand Canyon Avenue	I-405 SB Off-Ramp to I-405 NB Off-Ramp	73.4	73.6	73.6	0.2	1.5	No
435	Sand Canyon Avenue	I-5 NB Off-Ramp to Nightmist	73.5	73.5	73.6	0.1	1.5	No
436	Sand Canyon Avenue	Towngate to Irvine Boulevard	70.6	70.3	70.6	0.0	1.5	No
437	Sand Canyon Avenue	Waterworks to Irvine Center Drive	70.0	70.2	70.3	0.3	1.5	No
438	Sand Canyon Avenue	Irvine Boulevard to Portola Parkway	69.3	69.2	70.3	1.0	1.5	No

Table 16

439	Sand Canyon Avenue	Roosevelt to Trabuco Road	72.8	72.8	72.8	0.0	1.5	No
440	Sand Canyon Avenue	Alton Parkway to Hospital	70.5	70.8	70.9	0.4	1.5	No
441	Sand Canyon/Shady Canyon	Quail Hill Parkway to I-405 SB Ramps	71.6	71.8	71.8	0.2	1.5	No
442	Scientific Way	Irvine Center Drive to Wald	54.9	55.0	55.0	0.1	5.0	No
443	Shady Canyon Drive	Culver Drive/Bonita Canyon Drive to Cloverfield	68.8	69.3	69.4	0.6	1.5	No
444	Shady Canyon Drive	Bommer Canyon Road to Sunnyhill	67.3	67.7	67.8	0.5	1.5	No
445	Skyhawk	Great Park Boulevard to Marine Way	60.2	59.6	59.5	-0.7	3.0	No
446	Southwood	Yale Avenue to Colt	60.5	60.6	60.6	0.1	3.0	No
447	Southwood	Challenger to Yale Avenue	60.3	60.4	60.4	0.1	3.0	No
448	Spectrum Center Drive (Fortune Drive)	Pacifica to Quassar Drive (Spectrum )	61.9	62.0	61.9	0.0	3.0	No
449	Spectrum Center Drive (Fortune Drive)	Quassar Drive (Spectrum ) to Gatewayb	62.4	62.5	62.5	0.1	3.0	No
450	Sunnyhill	Shady Canyon Drive to Turtle Rock Drive	57.0	57.7	57.8	0.8	5.0	No
451	Technology Drive	Barranca Parkway to Alton Parkway	69.9	70.8	70.8	0.9	1.5	No
452	Technology Drive	Old Laguna Canyon Road to I-5/SR-133 Undercrossing	67.1	69.6	69.6	2.5	1.5	Yes
453	Technology Drive	I-5/SR-133 to Barranca Parkway	66.1	69.4	69.4	3.3	1.5	Yes
454	Technology Drive	Ada to Alton Parkway	59.9	63.7	63.7	3.8	5.0	No
455	Toledo Way	Bake Parkway to City Limits	65.8	65.6	65.6	-0.2	1.5	No
456	Toledo Way	Goodyear to Bake Parkway	64.9	64.7	64.7	-0.2	3.0	No
457	Toledo Way	Alton Parkway to Parker	64.5	64.5	64.5	0.0	3.0	No
458	Trabuco Road	Keystone to Sand Canyon Avenue	67.0	67.2	67.3	0.3	1.5	No
459	Trabuco Road	Jeffrey Road to Keystone	66.9	67.1	67.1	0.2	1.5	No
460	Trabuco Road	Culver Drive to I-5 NB Off-Ramp	66.6	66.8	66.9	0.3	1.5	No
461	Trabuco Road	Monroe to Yale Avenue	66.5	66.8	66.9	0.4	1.5	No
462	Trabuco Road	I-5 NB Off-Ramp to Monroe	66.5	66.7	66.8	0.3	1.5	No
463	Trabuco Road	Yale Avenue to Remington	66.0	66.4	66.5	0.5	1.5	No
464	Trabuco Road	Remington to Jeffrey Road	66.0	66.1	66.2	0.2	1.5	No
465	Turtle Ridge Drive	Federation Way to Bonita Canyon	68.8	68.7	68.7	-0.1	1.5	No
466	Turtle Rock Drive	Ridgeline to Willowleaf	67.5	67.9	67.9	0.4	1.5	No
467	Turtle Rock Drive	Silkwood to Sunnyhill	67.4	67.8	67.8	0.4	1.5	No
468	Turtle Rock Drive	Canyon Park to Ridgeline	66.8	67.1	67.1	0.3	1.5	No
469	Turtle Rock Drive	Sunnyhill to Southernwood	64.0	64.0	64.0	0.0	3.0	No
470	Turtle Rock Drive	Campus Drive to Hillgate	64.0	64.1	64.2	0.2	3.0	No
471	Turtle Rock Drive	Paseo Segovia to Campus Drive	65.4	65.5	65.4	0.0	1.5	No
472	University Drive	Golden Glow to Yale Avenue	72.6	73.0	73.1	0.5	1.5	No
473	University Drive	Ridgeline to Michelson Drive	72.3	72.6	72.6	0.3	1.5	No
474	University Drive	Culver Drive to Golden Glow	72.5	72.9	72.9	0.4	1.5	No
475	University Drive	Yale Avenue to Ridgeline	72.2	72.4	72.4	0.2	1.5	No

Table 16

476	University Drive	Michelson Drive to I-405 SB Off-Ramp	72.4	72.7	72.8	0.4	1.5	No
477	University Drive	Mesa to Campus Drive	74.2	74.5	74.6	0.4	1.5	No
478	University Drive	MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	74.2	74.4	74.7	0.5	1.5	No
479	University Drive	California Avenue to Mesa	74.1	74.4	74.5	0.4	1.5	No
480	University Drive	Campus Drive to Harvard Avenue	70.3	70.7	70.8	0.5	1.5	No
481	University Drive	SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	71.3	71.6	71.8	0.5	1.5	No
482	University Drive	SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps	70.0	70.2	70.4	0.4	1.5	No
483	University Drive	San Joaquin to Culver Drive	69.4	69.8	69.9	0.5	1.5	No
484	University Drive	Harvard Avenue to San Joaquin	69.4	69.8	69.9	0.5	1.5	No
485	Valley Oak Drive	Hawkcreek to Barranca Parkway	68.0	68.1	68.1	0.1	1.5	No
486	Valley Oak Drive	Irvine Center Drive to Oak Canyon Drive	67.6	69.6	69.5	1.9	1.5	Yes
487	Valley Oak Drive	Barranca Parkway to Irvine Center Drive	65.7	67.1	67.2	1.5	1.5	Yes
488	Valley Oak Drive	Alton Parkway to Hawkcreek	65.0	64.9	64.9	-0.1	1.5	No
489	Von Karman Avenue	Marriott to Morse Avenue	70.6	71.0	71.0	0.4	1.5	No
490	Von Karman Avenue	Michelson Drive to Quartz	70.4	70.9	70.9	0.5	1.5	No
491	Von Karman Avenue	McGaw Avenue to Alton Parkway	70.1	70.8	70.8	0.7	1.5	No
492	Von Karman Avenue	Alton Parkway to Barranca Parkway	69.7	70.4	70.4	0.7	1.5	No
493	Von Karman Avenue	Main Street to Anchor	69.9	70.7	70.7	0.8	1.5	No
494	Von Karman Avenue	Anchor to McGaw Avenue	69.9	70.5	70.6	0.7	1.5	No
495	Von Karman Avenue	Morse to Main Street	69.9	70.3	70.3	0.4	1.5	No
496	Von Karman Avenue	Martin to Dupont Drive	69.2	69.6	69.7	0.5	1.5	No
497	Von Karman Avenue	Campus Drive to Martin	69.2	69.5	69.6	0.4	1.5	No
498	Von Karman Avenue	Dupont Drive to Michelson Drive	69.2	69.5	69.6	0.4	1.5	No
499	Walnut Avenue	Jeffrey Road to I-5 SB Off-Ramp	70.5	70.9	71.0	0.5	1.5	No
500	Walnut Avenue	Myford Road to Jamboree Road SB Off-Ramp	68.9	69.1	69.2	0.3	1.5	No
501	Walnut Avenue	The Mall Street to Culver Drive	68.5	68.8	68.9	0.4	1.5	No
502	Walnut Avenue	Harvard Avenue to The Mall Street	68.4	68.8	68.8	0.4	1.5	No
503	Walnut Avenue	Franciscan Street to Ravenwood Street	68.1	68.5	68.6	0.5	1.5	No
504	Walnut Avenue	Ravenwood Street to Yale Avenue	68.1	68.5	68.5	0.4	1.5	No
505	Walnut Avenue	Culver Drive to Franciscan Street	68.1	68.4	68.4	0.3	1.5	No
506	Walnut Avenue	Peters Canyon Road to Harvard Avenue	67.6	68.0	68.1	0.5	1.5	No
507	Walnut Avenue	Jamboree Road NB Off-Ramp to Peters Canyon Road	67.5	67.9	67.9	0.4	1.5	No
508	Walnut Avenue	Yale Avenue to Kazan Street	67.0	67.3	67.3	0.3	1.5	No
509	Walnut Avenue	Wisteria to Jeffrey Road	67.0	67.2	67.2	0.2	1.5	No
510	Warner Avenue	Jamboree Road SB Off-ramp to Construction North	70.1	70.2	70.1	0.0	1.5	No
511	Warner Avenue	Construction North to Harvard Avenue	68.4	68.6	68.6	0.2	1.5	No
512	Warner Avenue	Harvard Avenue to Paseo Westpark	66.8	67.1	67.1	0.3	1.5	No

Table 16

513	Warner Avenue	Santa Ynez to Culver Drive	65.6	66.2	66.2	0.6	1.5	No
514	Warner Avenue	Culver Drive to West Yale Loop	65.1	65.8	65.9	0.8	1.5	No
515	West Yale Loop	Alton Parkway to Blue Lake North	64.0	64.0	64.0	0.0	3.0	No
516	West Yale Loop	Eagle Run to Main Street	63.8	63.9	63.8	0.0	3.0	No
517	West Yale Loop	Thunder Run to Yale Avenue	63.6	64.0	64.0	0.4	3.0	No
518	West Yale Loop	Main Street to Timber Run	62.9	62.8	62.9	0.0	3.0	No
519	West Yale Loop	Yale Avenue to Shorebird	62.1	63.2	63.3	1.2	3.0	No
520	West Yale Loop	Warner Avenue to Stonecreek South	62.4	62.7	62.7	0.3	3.0	No
521	West Yale Loop	Barranca Parkway to Alton Parkway	62.4	62.4	62.4	0.0	3.0	No
522	West Yale Loop	Stonecreek North to Warner Avenue	62.0	62.6	62.6	0.6	3.0	No
523	West Yale Loop	Birdsong to Barranca Parkway	62.2	62.4	62.5	0.3	3.0	No
524	Westwood	Yorktown to Bryan Avenue	63.6	63.5	63.5	-0.1	3.0	No
525	Westwood	Bryan Avenue to Leaf	61.6	61.6	61.6	0.0	3.0	No
526	Yale Avenue	Deerfield Avenue to Winvale Avenue	68.6	68.6	68.6	0.0	1.5	No
527	Yale Avenue	Hicks Canyon Drive to Meadowood	67.4	67.3	67.3	-0.1	1.5	No
528	Yale Avenue	Walnut Avenue to Roosevelt	70.9	71.1	71.2	0.3	1.5	No
529	Yale Avenue	Roosevelt to Trabuco Road	67.1	67.1	67.1	0.0	1.5	No
530	Yale Avenue	Irvine Center Drive to Deerfield Avenue	67.0	66.9	66.8	-0.2	1.5	No
531	Yale Avenue	West Yale Loop to Irvine Center Drive	65.8	66.5	66.6	0.8	1.5	No
532	Yale Avenue	Winvale Avenue to Karen Ann Lane	65.7	65.7	65.8	0.1	1.5	No
533	Yale Avenue	Karen Ann Lane to Walnut Avenue	65.7	65.7	65.8	0.1	1.5	No
534	Yale Avenue	Trabuco Road to Southwood	65.6	65.6	65.7	0.1	1.5	No
535	Yale Avenue	Southwood to Bryan Avenue	65.6	65.4	65.4	-0.2	1.5	No
536	Yale Avenue	Northwood to Irvine Boulevard	65.3	65.1	65.2	-0.1	1.5	No
537	Yale Avenue	Bryan Avenue to Monticello	65.2	65.0	65.0	-0.2	1.5	No
538	Yale Avenue	Irvine Boulevard to Park Place	64.3	64.2	64.2	-0.1	3.0	No
539	Yale Avenue	University Drive to Royce	63.0	63.6	63.5	0.5	3.0	No
540	Yale Court	Arborwood to Portola Parkway	60.3	60.4	60.4	0.1	3.0	No
<sup>1</sup> Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses. <sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use. <sup>3</sup> Does the Project create an incremental noise level increase exceeding the significance criteria?								



Table 17

Table 17: Current General Plan and Cumulative Preferred Plan Traffic Noise Level Increases

ID	Road	Segment	CNEL at Receiving Land Use (dBA) <sup>2</sup>				Incremental Noise Level Increase Threshold <sup>3</sup>	
			Current General Plan	Preferred	Cumulative Preferred	Cumulative Increase	Limit	Exceeded?
1	Ada	Barranca Parkway to Marine Way	0.0	70.8	70.8	70.8	5.0	Yes
2	Ada	Alton Parkway to Barranca Parkway	67.1	69.2	69.2	2.1	1.5	Yes
3	Alton Parkway	Enterprise to I-5 NB Off-Ramp	72.6	73.9	73.9	1.3	1.5	No
4	Alton Parkway	I-5 NB Off-Ramp to Technology Drive West	73.3	74.5	74.5	1.2	1.5	No
5	Alton Parkway	East Yale Loop to Jeffrey Road	71.5	71.8	71.8	0.3	1.5	No
6	Alton Parkway	Gateway Boulevard to Enterprise	70.5	71.7	71.7	1.2	1.5	No
7	Alton Parkway	Jeffrey Road to Royal Oak	70.4	70.7	70.8	0.4	1.5	No
8	Alton Parkway	Daimler Street to Red Hill Avenue	70.4	70.6	70.6	0.2	1.5	No
9	Alton Parkway	Culver Drive to West Yale Loop	70.5	70.6	70.6	0.1	1.5	No
10	Alton Parkway	West Yale Loop to Lake Road	70.5	70.6	70.6	0.1	1.5	No
11	Alton Parkway	Technology Drive West to Ada	71.4	72.4	72.4	1.0	1.5	No
12	Alton Parkway	Creek Road to East Yale Loop	70.3	70.5	70.6	0.3	1.5	No
13	Alton Parkway	Red Hill Avenue to Von Karman Avenue	69.9	70.4	70.5	0.6	1.5	No
14	Alton Parkway	Lake Road to Creek Road	70.3	70.3	70.3	0.0	1.5	No
15	Alton Parkway	Telemetry to Banting	69.8	70.3	70.4	0.6	1.5	No
16	Alton Parkway	Irvine Boulevard to Commercentre	71.0	70.8	70.9	-0.1	1.5	No
17	Alton Parkway	Jenner to Telemetry	69.7	70.3	70.3	0.6	1.5	No
18	Alton Parkway	Irvine Center Drive to Gateway Boulevard	69.8	71.0	71.0	1.2	1.5	No
19	Alton Parkway	Sand Canyon Avenue to Hospital	73.6	73.7	73.7	0.1	1.5	No
20	Alton Parkway	Laguna Canyon Road to Jenner	69.7	70.2	70.2	0.5	1.5	No
21	Alton Parkway	Technology Drive East to Barranca Pkwy/Muirlands Blvd	70.4	70.8	70.8	0.4	1.5	No
22	Alton Parkway	Royal Oak to Valley Oak Drive	69.7	70.0	70.0	0.3	1.5	No
23	Alton Parkway	Banting to Pacifica	69.3	69.9	69.9	0.6	1.5	No
24	Alton Parkway	Barranca Pkwy/Muirlands Blvd to Jeronimo Road	70.3	70.3	70.3	0.0	1.5	No
25	Alton Parkway	Ada to Technology Drive East	70.2	70.3	70.3	0.1	1.5	No
26	Alton Parkway	Von Karman Avenue to Jamboree Road	69.2	69.6	69.7	0.5	1.5	No
27	Alton Parkway	Jeronimo Road to Hughes	69.9	70.0	70.0	0.1	1.5	No
28	Alton Parkway	Hughes to Morgan	69.7	69.8	69.8	0.1	1.5	No
29	Alton Parkway	Morgan to Toledo Way	69.0	69.0	69.0	0.0	1.5	No
30	Alton Parkway	San Marino to Culver Drive	69.0	69.1	69.1	0.1	1.5	No
31	Alton Parkway	Jamboree Road to Murphy Avenue	68.6	68.9	69.1	0.5	1.5	No

Table 17

32	Alton Parkway	Hospital to Laguna Canyon Road	71.5	71.9	72.0	0.5	1.5	No
33	Alton Parkway	Valley Oak Drive to Sand Canyon Avenue	71.4	71.8	71.8	0.4	1.5	No
34	Alton Parkway	Murphy Avenue to Harvard Avenue	68.5	68.7	68.9	0.4	1.5	No
35	Alton Parkway	Foster to Irvine Boulevard	69.0	68.7	68.7	-0.3	1.5	No
36	Alton Parkway	Fairbanks to Foster	68.7	68.4	68.5	-0.2	1.5	No
37	Alton Parkway	Toledo Way to Berteia	68.4	68.4	68.4	0.0	1.5	No
38	Alton Parkway	Pacifica to Meridian	70.7	71.5	71.6	0.9	1.5	No
39	Alton Parkway	Berteia to Fairbanks	68.3	68.3	68.3	0.0	1.5	No
40	Alton Parkway	Meridian to Irvine Center Drive	67.5	68.2	68.2	0.7	1.5	No
41	Alton Parkway	Paseo Westpark to San Marino	68.0	68.1	68.2	0.2	1.5	No
42	Alton Parkway	Harvard Avenue to Paseo Westpark	67.1	67.5	67.7	0.6	1.5	No
43	Astor	Lynx to Fairbanks	66.9	67.0	67.0	0.1	1.5	No
44	Astor	Cadence to Lynx	66.0	65.8	65.8	-0.2	1.5	No
45	Bake Parkway	I-5 NB Off-Ramp to Rockfield Boulevard	76.4	76.6	76.6	0.2	1.5	No
46	Bake Parkway	Muirlands Boulevard to Jeronimo Road	72.9	72.9	72.9	0.0	1.5	No
47	Bake Parkway	Rockfield Boulevard to Muirlands Boulevard	75.1	75.0	75.0	-0.1	1.5	No
48	Bake Parkway	Jeronimo Road to Toledo Way	72.0	72.0	72.0	0.0	1.5	No
49	Bake Parkway	Toledo Way to Cromwell	71.6	71.6	71.7	0.1	1.5	No
50	Bake Parkway	Cromwell to Irvine Boulevard	71.6	71.6	71.6	0.0	1.5	No
51	Bake Parkway	Research Drive to I-5 SB Off-Ramp	69.3	69.5	69.6	0.3	1.5	No
52	Bake Parkway	Irvine Center Drive to Research Drive	64.6	64.8	65.0	0.4	3.0	No
53	Bake Parkway	Lake Forest Drive to Irvine Center Drive	63.0	63.4	63.7	0.7	3.0	No
54	Banting	Alton Parkway to Barranca Parkway	59.3	60.2	60.1	0.8	5.0	No
55	Barranca Parkway	Pacifica to Irvine Center Drive	71.7	73.1	73.1	1.4	1.5	No
56	Barranca Parkway	Banting to Pacifica	71.8	72.7	72.7	0.9	1.5	No
57	Barranca Parkway	I-5 HOV Ramp to Technology Drive West	70.9	72.6	72.7	1.8	1.5	Yes
58	Barranca Parkway	Technology Drive West to Ada	71.5	72.6	72.6	1.1	1.5	No
59	Barranca Parkway	Irvine Center Drive to I-5 HOV Ramp	70.8	72.3	72.4	1.6	1.5	Yes
60	Barranca Parkway	Culver Drive to West Yale Loop	72.0	72.2	72.2	0.2	1.5	No
61	Barranca Parkway	East Yale Loop to Jeffrey Road	71.7	72.1	72.1	0.4	1.5	No
62	Barranca Parkway	West Yale Loop to Lake Road	71.8	72.0	72.0	0.2	1.5	No
63	Barranca Parkway	Ada to Alton Parkway	72.3	72.0	72.0	-0.3	1.5	No
64	Barranca Parkway	Lake Road to Creek Road	71.4	71.7	71.7	0.3	1.5	No
65	Barranca Parkway	Red Hill Avenue to Armstrong Avenue	74.4	74.7	74.7	0.3	1.5	No
66	Barranca Parkway	Discovery/Herchel to Banting	71.1	71.6	71.6	0.5	1.5	No
67	Barranca Parkway	Lyon to East Yale Loop	71.1	71.5	71.5	0.4	1.5	No
68	Barranca Parkway	Creek Road to Lyon	71.1	71.4	71.4	0.3	1.5	No

Table 17

69	Barranca Parkway	Von Karman Avenue to Jamboree Road	72.4	72.7	72.7	0.3	1.5	No
70	Barranca Parkway	Sand Canyon Avenue to Laguna Canyon Road	70.6	70.8	70.8	0.2	1.5	No
71	Barranca Parkway	Armstrong Avenue to Von Karman Avenue	72.1	72.3	72.4	0.3	1.5	No
72	Barranca Parkway	Valley Oak Drive to Sand Canyon Avenue	70.4	70.6	70.7	0.3	1.5	No
73	Barranca Parkway	Jamboree Road to Construction Circle	70.7	71.0	71.1	0.4	1.5	No
74	Barranca Parkway	Santa Rosa to Culver Drive	70.6	70.9	71.0	0.4	1.5	No
75	Barranca Parkway	FedEx to Discovery/Herchel	69.6	70.2	70.3	0.7	1.5	No
76	Barranca Parkway	Jeffrey Road to Valley Oak Drive	69.7	70.2	70.3	0.6	1.5	No
77	Barranca Parkway	Laguna Canyon Road to FedEx	69.4	70.1	70.1	0.7	1.5	No
78	Barranca Parkway	Pullman Street to Red Hill Avenue	73.4	73.6	73.6	0.2	1.5	No
79	Barranca Parkway	Construction Circle to Fire Station	70.1	70.5	70.5	0.4	1.5	No
80	Barranca Parkway	Fire Station to Harvard Avenue	70.1	70.5	70.5	0.4	1.5	No
81	Barranca Parkway	Paseo Westpark to Santa Rosa	70.1	70.4	70.5	0.4	1.5	No
82	Barranca Parkway	Harvard Avenue to Paseo Westpark	69.7	70.1	70.2	0.5	1.5	No
83	Bay Tree	Trabuco Road to Roosevelt	57.2	57.2	57.2	0.0	5.0	No
84	Beacon	Ridge Valley to Benchmark	59.0	59.6	59.7	0.7	5.0	No
85	Benchmark (LN Street)	Ridge Valley (O Street) to Bosque	56.7	56.5	56.5	-0.2	5.0	No
86	Bison Avenue	SR-73 NB Off-Ramp to California Avenue	69.7	69.6	69.7	0.0	1.5	No
87	Bonita Canyon Drive	MacArthur Boulevard to SR-73	70.2	70.3	70.3	0.1	1.5	No
88	Bonita Canyon Drive	Turtle Ridge to Shady Canyon Drive	68.5	68.6	68.6	0.1	1.5	No
89	Bonita Canyon Drive	Newport Coast Drive to Turtle Ridge	68.2	68.2	68.2	0.0	1.5	No
90	Bonita Canyon Drive	SR-73 NB Off-Ramp to Newport Coast Drive	67.9	68.0	68.0	0.1	1.5	No
91	Bosque	Cadence to Great Park Boulevard	64.8	65.2	65.2	0.4	3.0	No
92	Bosque	Irvine Boulevard to Benchmark (LN Street)	63.0	63.5	63.5	0.5	3.0	No
93	Bosque	Benchmark to Cadence	63.0	63.1	63.1	0.1	3.0	No
94	Bosque	Great Park Boulevard to Beacon	56.9	56.7	56.7	-0.2	5.0	No
95	Bosque	Beacon to S 5th Street	55.9	56.1	56.1	0.2	5.0	No
96	Bryan Avenue	Jamboree Road to Market Place	68.9	68.9	69.0	0.1	1.5	No
97	Bryan Avenue	Market Place to El Camino Real	68.9	68.9	68.9	0.0	1.5	No
98	Bryan Avenue	Rubicon to Culver Drive	68.9	68.9	68.9	0.0	1.5	No
99	Bryan Avenue	El Camino Real to Rubicon	68.9	68.8	68.9	0.0	1.5	No
100	Bryan Avenue	Eastwood to Jeffrey Road	66.3	66.9	67.0	0.7	1.5	No
101	Bryan Avenue	Westwood to Yale Avenue	66.3	66.6	66.7	0.4	1.5	No
102	Bryan Avenue	Culver Drive to Westwood	66.4	66.6	66.6	0.2	1.5	No
103	Bryan Avenue	Yale Avenue to Eastwood	66.0	66.4	66.5	0.5	1.5	No
104	Cadence	Pusan to Chinon	64.1	65.6	65.6	1.5	3.0	No
105	Cadence	Bosque to Pusan	64.2	65.3	65.3	1.1	3.0	No

Table 17

106	Cadence	Ridge Valley (O Street) to Bosque	64.0	63.9	63.9	-0.1	3.0	No
107	Cadence	Chinon to Merit	59.1	62.2	62.2	3.1	5.0	No
108	Cadence	Merit to Astor	58.6	59.4	59.4	0.8	5.0	No
109	California Avenue	University Drive to Academy Way	66.2	66.2	67.2	1.0	1.5	No
110	California Avenue	Campus Drive to Harvard Avenue	64.1	64.2	64.2	0.1	3.0	No
111	California Avenue	Theory to Bison Avenue	64.0	63.9	64.0	0.0	3.0	No
112	Campus Drive	Carlson Avenue to University Drive	73.0	73.2	73.3	0.3	1.5	No
113	Campus Drive	University Drive to Bridge Road	71.7	71.8	71.7	0.0	1.5	No
114	Campus Drive	Jamboree Road to Carlson Avenue	71.3	71.5	71.5	0.2	1.5	No
115	Campus Drive	Stanford Court to Berkeley Avenue	71.0	71.1	71.0	0.0	1.5	No
116	Campus Drive	California Avenue to Culver Drive	70.9	70.9	70.9	0.0	1.5	No
117	Campus Drive	Berkeley Avenue to Cornell	69.9	70.0	69.9	0.0	1.5	No
118	Campus Drive	Martin to Von Karman Avenue	68.7	69.0	69.1	0.4	1.5	No
119	Campus Drive	Culver Drive to Paseo Montoya (Turtle Rock Drive)	68.6	68.7	68.7	0.1	1.5	No
120	Campus Drive	Von Karman Avenue to Teller Avenue	68.1	68.3	68.5	0.4	1.5	No
121	Campus Drive	MacArthur Boulevard to Martin	68.1	68.2	68.3	0.2	1.5	No
122	Campus Drive	Teller Avenue to Jamboree Road	67.2	67.5	67.5	0.3	1.5	No
123	Carlson Avenue	Michelson Drive to Campus Drive	67.8	67.9	67.9	0.1	1.5	No
124	Chinon	Irvine Boulevard to Cadence	58.3	59.0	59.0	0.7	5.0	No
125	Creek Road	Alton Parkway to Barranca Parkway	56.0	56.1	56.2	0.2	5.0	No
126	Culver Drive	Michelson Drive to I-405 SB Off-Ramp	73.7	73.9	73.9	0.2	1.5	No
127	Culver Drive	I-405 SB Off-Ramp to I-405 NB Off Ramp	73.9	73.8	73.8	-0.1	1.5	No
128	Culver Drive	I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)	73.9	73.9	73.9	0.0	1.5	No
129	Culver Drive	Scottsdale Drive to I-5 SB Off- Ramp	73.9	73.9	73.9	0.0	1.5	No
130	Culver Drive	I-405 NB Off-Ramp to San Leandro	73.6	73.6	73.6	0.0	1.5	No
131	Culver Drive	San Leandro to Main Street	73.3	73.3	73.3	0.0	1.5	No
132	Culver Drive	Harvard Avenue to University Drive	73.3	73.3	73.3	0.0	1.5	No
133	Culver Drive	Trabuco Road to Farwell Avenue	74.4	74.3	74.2	-0.2	1.5	No
134	Culver Drive	Alton Parkway to Barranca Parkway	73.2	73.2	73.2	0.0	1.5	No
135	Culver Drive	Main Street to Alton Parkway	73.1	73.1	73.1	0.0	1.5	No
136	Culver Drive	Warner Avenue to Irvine Center Drive	73.0	73.0	73.0	0.0	1.5	No
137	Culver Drive	Walnut Avenue to Scottsdale Dive	72.9	72.9	72.9	0.0	1.5	No
138	Culver Drive	Barranca Parkway to Warner Avenue	72.8	72.8	72.9	0.1	1.5	No
139	Culver Drive	Shady Canyon Drive to Palo Verde	72.1	72.0	72.0	-0.1	1.5	No
140	Culver Drive	Deerfield Avenue to Walnut Avenue	72.6	72.5	72.5	-0.1	1.5	No
141	Culver Drive	Sandburg Way to Michelson Drive	72.5	72.5	72.5	0.0	1.5	No
142	Culver Drive	Irvine Center Drive to Deerfield Avenue	72.4	72.4	72.4	0.0	1.5	No

Table 17

143	Culver Drive	Palo Verde to Campus Drive	71.6	71.6	71.6	0.0	1.5	No
144	Culver Drive	University Drive to Sandburg Way	72.2	72.2	72.2	0.0	1.5	No
145	Culver Drive	Farwell Avenue to Bryan Avenue	73.3	73.2	73.2	-0.1	1.5	No
146	Culver Drive	Campus Drive to High School	72.1	72.1	72.1	0.0	1.5	No
147	Culver Drive	High School to Harvard Avenue	72.0	72.0	72.0	0.0	1.5	No
148	Culver Drive	Bryan Avenue to Florence	71.8	71.8	71.8	0.0	1.5	No
149	Culver Drive	Portola Parkway to Settlers	71.1	71.1	71.2	0.1	1.5	No
150	Culver Drive	Florence to Irvine Boulevard	71.7	71.7	71.7	0.0	1.5	No
151	Culver Drive	Irvine Boulevard to Viewpark	70.5	70.5	70.5	0.0	1.5	No
152	Culver Drive	Viewpark to Meadowood	70.5	70.4	70.4	-0.1	1.5	No
153	Culver Drive	Settlers to Furrow	68.3	68.4	68.5	0.2	1.5	No
154	Culver Drive	Meadowood to Portola Parkway	69.0	69.0	69.0	0.0	1.5	No
155	Discovery Drive	Irvine Center Drive to Laguna Canyon Road	63.8	64.0	64.0	0.2	3.0	No
156	Discovery Drive	Waterworks Way to Irvine Center Drive	60.7	61.2	61.2	0.5	3.0	No
157	East Yale Loop	Alton Parkway to Witherspoon	65.3	65.5	65.5	0.2	1.5	No
158	East Yale Loop	Osborn Street to Barranca Parkway	65.0	65.3	65.3	0.3	1.5	No
159	East Yale Loop	Yale Avenue to Springbrook South	64.3	64.8	64.9	0.6	3.0	No
160	East Yale Loop	Springbrook North to Alton Parkway	63.4	63.5	63.6	0.2	3.0	No
161	East Yale Loop	Woodspring to Yale Avenue	62.5	62.7	62.7	0.2	3.0	No
162	East Yale Loop	Barranca Parkway to Eastshore	62.5	62.4	62.4	-0.1	3.0	No
163	Eastwood	Bryan Avenue to Monticello	60.5	60.8	60.8	0.3	3.0	No
164	Eastwood	Columbus to Bryan Avenue	58.8	58.7	58.8	0.0	5.0	No
165	El Camino Real	Jamboree Road to Alliance (SR-261 Bridge)	67.0	67.1	67.1	0.1	1.5	No
166	El Camino Real North	El Camino Real to Bryan Avenue	62.4	62.4	62.4	0.0	3.0	No
167	Fairbanks	Alton Parkway to Astor	69.7	69.7	69.8	0.1	1.5	No
168	Fairbanks	Irvine Boulevard to Alton Parkway	66.8	66.9	66.9	0.1	1.5	No
169	Fairchild Road	MacArthur Boulevard to Jamboree Road	64.0	64.1	64.0	0.0	3.0	No
170	Gateway Boulevard	Alton Parkway to Irvine Center Drive	62.8	63.3	63.3	0.5	3.0	No
171	Gateway Boulevard	Spectrum Center Drive (Fortune Drive) to Alton Parkway	61.6	62.1	62.1	0.5	3.0	No
172	Gateway Boulevard	Irvine Center Drive to Meridian	58.4	59.1	59.2	0.8	5.0	No
173	Great Park Boulevard	Sand Canyon to Ridge Valley	74.1	74.4	74.5	0.4	1.5	No
174	Great Park Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	69.7	70.2	70.2	0.5	1.5	No
175	Great Park Boulevard (EB)	Bosque to Skyhawk	68.0	68.8	68.9	0.9	1.5	No
176	Great Park Boulevard (WB)	Bosque to Skyhawk	67.6	68.3	68.3	0.7	1.5	No
177	Harvard Avenue	University Drive to Michelson Drive	71.8	72.0	72.0	0.2	1.5	No
178	Harvard Avenue	Michelson Drive to Coronado	70.2	70.4	70.5	0.3	1.5	No
179	Harvard Avenue	San Marino to Alton Parkway	70.0	70.1	70.2	0.2	1.5	No

Table 17

180	Harvard Avenue	Coronado to Main Street	70.0	70.1	70.2	0.2	1.5	No
181	Harvard Avenue	San Carlo to San Marino	69.9	70.0	70.1	0.2	1.5	No
182	Harvard Avenue	Main Street to San Carlo	69.8	70.0	70.0	0.2	1.5	No
183	Harvard Avenue	Alton Parkway to San Leon	68.8	68.8	68.6	-0.2	1.5	No
184	Harvard Avenue	San Juan to Barranca Parkway	68.6	68.8	68.7	0.1	1.5	No
185	Harvard Avenue	San Leon to San Juan	68.6	68.6	68.6	0.0	1.5	No
186	Harvard Avenue	Irvine Center Drive to Deerfield Avenue	67.4	67.4	67.4	0.0	1.5	No
187	Harvard Avenue	Deerfield Avenue to Poplar Street	67.4	67.3	67.4	0.0	1.5	No
188	Harvard Avenue	Barranca Parkway to Warner Avenue	67.9	67.8	67.9	0.0	1.5	No
189	Harvard Avenue	Bridge Road to University Drive	67.6	67.8	67.8	0.2	1.5	No
190	Harvard Avenue	Paseo Westpark to Irvine Center Drive	67.7	67.8	67.8	0.1	1.5	No
191	Harvard Avenue	Poplar Street to Walnut Avenue	68.7	68.7	68.8	0.1	1.5	No
192	Harvard Avenue	California Avenue to Berkeley Avenue	67.0	67.2	67.2	0.2	1.5	No
193	Harvard Avenue	Culver Drive to California Avenue	66.9	67.2	67.2	0.3	1.5	No
194	Harvard Avenue	Berkeley to Bridge Road	67.0	67.1	67.1	0.1	1.5	No
195	Harvard Avenue	Warner Avenue to Paseo Westpark	66.8	66.8	66.8	0.0	1.5	No
196	Hicks Canyon Drive	Delamesa to Yale Avenue	58.4	58.2	58.2	-0.2	5.0	No
197	Hornet (5th St)	Ridge Valley (O Street) to Bosque	57.5	57.5	57.6	0.1	5.0	No
198	Hubble	Irvine Center Drive to Bunsen	55.7	55.9	56.1	0.4	5.0	No
199	Irvine Boulevard	SR-133 NB Off- Ramp to Ridge Valley (O Street)	72.3	72.3	72.3	0.0	1.5	No
200	Irvine Boulevard	SR-133 SB Off-Ramp to SR-133 NB Off-Ramp	72.2	72.2	72.1	-0.1	1.5	No
201	Irvine Boulevard	Sand Canyon to SR-133 SB Off-Ramp	73.1	73.1	73.1	0.0	1.5	No
202	Irvine Boulevard	Merit to Alton	71.6	71.6	71.6	0.0	1.5	No
203	Irvine Boulevard	Journey to Sand Canyon Avenue	71.6	71.6	71.7	0.1	1.5	No
204	Irvine Boulevard	Ridge Valley (O Street) to Bosque (LY Street)	71.2	71.2	71.1	-0.1	1.5	No
205	Irvine Boulevard	Pusan Way to Chinon (B Street)	71.0	71.0	71.0	0.0	1.5	No
206	Irvine Boulevard	Palo Lado to Yale Avenue	70.6	71.1	71.2	0.6	1.5	No
207	Irvine Boulevard	Culver Drive to Palo Lado	70.6	71.0	71.1	0.5	1.5	No
208	Irvine Boulevard	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.6	70.9	71.0	0.4	1.5	No
209	Irvine Boulevard	Old Myford Road to Market Place	70.5	71.0	71.0	0.5	1.5	No
210	Irvine Boulevard	Bosque (LY Street) to Modjeska	70.7	70.9	71.0	0.3	1.5	No
211	Irvine Boulevard	Jamboree Road to Old Myford Road	70.5	70.9	70.9	0.4	1.5	No
212	Irvine Boulevard	Market Place to SR-261 SB Off-Ramp	70.4	70.9	70.9	0.5	1.5	No
213	Irvine Boulevard	Jeffrey Road to Groveland	70.8	70.8	71.0	0.2	1.5	No
214	Irvine Boulevard	Bake Parkway to Lake Forest Drive	70.9	70.6	70.7	-0.2	1.5	No
215	Irvine Boulevard	Independence Way (The Groves)/ The Groves to Jeffrey Road	70.5	70.6	70.6	0.1	1.5	No
216	Irvine Boulevard	Chinon (B Street) to Merit	70.5	70.5	70.5	0.0	1.5	No

Table 17

217	Irvine Boulevard	SR-261 NB Off-Ramp to Central Park	70.2	70.5	70.5	0.3	1.5	No
218	Irvine Boulevard	Pueblo Norte to Independence Way (The Groves)/ Parkwood	70.1	70.3	70.4	0.3	1.5	No
219	Irvine Boulevard	Yale Avenue to Pueblo Norte	70.1	70.3	70.4	0.3	1.5	No
220	Irvine Boulevard	Modjeska to Pusan Way	70.2	70.2	70.2	0.0	1.5	No
221	Irvine Boulevard	Central Park Avenue to Culver Drive	69.6	69.9	69.9	0.3	1.5	No
222	Irvine Boulevard	Parker to Bake Parkway	69.6	69.5	69.7	0.1	1.5	No
223	Irvine Boulevard	Alton Parkway to Fairbanks	68.6	68.6	68.6	0.0	1.5	No
224	Irvine Center Drive	Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp	72.5	72.6	72.7	0.2	1.5	No
225	Irvine Center Drive	Orange Tree to Valley Oak Drive	71.4	71.8	71.9	0.5	1.5	No
226	Irvine Center Drive	I-405 SB Off-Ramp to Research	72.1	72.1	72.3	0.2	1.5	No
227	Irvine Center Drive	Irvine Valley College to Orange Tree	71.3	71.7	71.8	0.5	1.5	No
228	Irvine Center Drive	Fontaine Avenue to Jeffrey Road	71.0	71.5	71.5	0.5	1.5	No
229	Irvine Center Drive	Culver Drive to Deerwood	71.0	71.4	71.5	0.5	1.5	No
230	Irvine Center Drive	Deerwood to Yale Avenue	71.0	71.4	71.4	0.4	1.5	No
231	Irvine Center Drive	Yale Avenue to Fontaine Avenue	70.9	71.4	71.5	0.6	1.5	No
232	Irvine Center Drive	Jeffrey Road to Irvine Valley College	71.1	71.3	71.4	0.3	1.5	No
233	Irvine Center Drive	Alton Parkway to Spectrum	70.4	71.0	71.1	0.7	1.5	No
234	Irvine Center Drive	Spectrum to Pacifica	70.3	71.0	71.0	0.7	1.5	No
235	Irvine Center Drive	Hearthstone to Culver Drive	70.6	70.9	70.9	0.3	1.5	No
236	Irvine Center Drive	Charter to Barranca Parkway	70.2	70.6	70.7	0.5	1.5	No
237	Irvine Center Drive	Jamboree Road to Harvard Avenue	70.3	70.5	70.5	0.2	1.5	No
238	Irvine Center Drive	Pacifica to Entertainment (Enterprise/Fortune)	70.3	70.5	70.6	0.3	1.5	No
239	Irvine Center Drive	Valley Oak Drive to Sand Canyon Avenue	70.0	70.5	70.5	0.5	1.5	No
240	Irvine Center Drive	Harvard Avenue to Hearthstone	70.0	70.2	70.2	0.2	1.5	No
241	Irvine Center Drive	Research to Hubble	69.8	69.7	70.0	0.2	1.5	No
242	Irvine Center Drive	Barranca Parkway to Gateway Boulevard	69.4	69.8	69.9	0.5	1.5	No
243	Irvine Center Drive	Bake Parkway to Muller	69.9	69.7	69.9	0.0	1.5	No
244	Irvine Center Drive	Discovery to Charter	69.3	69.8	69.9	0.6	1.5	No
245	Irvine Center Drive	Hubble to Bake Parkway	69.7	69.5	69.6	-0.1	1.5	No
246	Irvine Center Drive	Muller to Tesla	69.5	69.3	69.4	-0.1	1.5	No
247	Irvine Center Drive	Sand Canyon Avenue to Odyssey	69.0	69.2	69.2	0.2	1.5	No
248	Irvine Center Drive	Tesla to Scientific Way	69.2	68.9	69.1	-0.1	1.5	No
249	Irvine Center Drive	Scientific Way to Lake Forest Drive	68.9	68.7	68.9	0.0	1.5	No
250	Irvine Center Drive	Gateway Boulevard to Alton Parkway	68.3	68.6	68.7	0.4	1.5	No
251	Irvine Center Drive	Laguna Canyon Road to Discovery	68.2	68.6	68.7	0.5	1.5	No
252	Irvine Center Drive	Odyssey to Laguna Canyon Road	68.3	68.5	68.6	0.3	1.5	No
253	Irvine Center Drive (Edinger)	Redhill Avenue to Jamboree Road	70.8	70.9	70.9	0.1	1.5	No

Table 17

254	Jamboree Road	I-5 SB Off-Ramp to I-5 NB Off-Ramp	74.5	74.5	74.5	0.0	1.5	No
255	Jamboree Road	I-405 SB Off-Ramp to I-405 NB Off Ramp	75.4	75.6	75.6	0.2	1.5	No
256	Jamboree Road	Walnut Avenue to Michelle Drive	73.8	73.9	73.9	0.1	1.5	No
257	Jamboree Road	I-405 NB Off-Ramp to Main Street	76.9	77.0	77.0	0.1	1.5	No
258	Jamboree Road	Michelle Drive to I-5 SB Off-Ramp	73.6	73.6	73.7	0.1	1.5	No
259	Jamboree Road	Main Street to Kelvin Avenue	76.2	76.3	76.4	0.2	1.5	No
260	Jamboree Road	Michelson Drive to I-405 SB Off-Ramp	74.2	74.3	74.3	0.1	1.5	No
261	Jamboree Road	Kelvin Avenue to McGaw Avenue	75.8	76.0	76.0	0.2	1.5	No
262	Jamboree Road	McGaw Avenue to Alton Parkway	75.8	75.9	76.0	0.2	1.5	No
263	Jamboree Road	Birch Street to Campus Drive	72.6	72.9	73.0	0.4	1.5	No
264	Jamboree Road	Dupont Drive to Michelson Drive	73.5	73.8	73.9	0.4	1.5	No
265	Jamboree Road	Alton Parkway to Beckman	75.4	75.5	75.6	0.2	1.5	No
266	Jamboree Road	Fairchild Road to Birch Street	73.2	73.4	73.5	0.3	1.5	No
267	Jamboree Road	Beckman to Barranca Parkway	75.2	75.2	75.3	0.1	1.5	No
268	Jamboree Road	I-5 NB Off-Ramp to El Camino Real	75.1	75.1	75.1	0.0	1.5	No
269	Jamboree Road	Campus Drive to Dupont Drive	72.7	73.1	73.1	0.4	1.5	No
270	Jamboree Road	El Camino Real to West Drive	75.1	75.0	74.9	-0.2	1.5	No
271	Jamboree Road	West Drive to Bryan Avenue	75.1	75.0	75.0	-0.1	1.5	No
272	Jamboree Road	Bryan Avenue to Irvine Boulevard	74.8	74.7	74.6	-0.2	1.5	No
273	Jamboree Road	Koll Center to Fairchild Road	72.5	72.7	72.7	0.2	1.5	No
274	Jamboree Road	MacArthur Boulevard to Koll Center	72.5	72.6	72.7	0.2	1.5	No
275	Jamboree Road	Irvine Boulevard to Portola Parkway	70.8	70.7	70.7	-0.1	1.5	No
276	Jamboree Road	Warner Avenue to Edinger Avenue	79.1	79.1	79.1	0.0	1.5	No
277	Jamboree Road	Barranca Parkway to Warner Avenue	78.2	78.3	78.3	0.1	1.5	No
278	Jamboree Road	Edinger Avenue to Walnut Avenue	77.9	78.0	78.0	0.1	1.5	No
279	Jeffrey Road	Walnut Avenue to I-5 NB Off-Ramp	71.3	71.3	71.4	0.1	1.5	No
280	Jeffrey Road	I-5 NB Off-Ramp to Roosevelt	72.2	72.2	72.3	0.1	1.5	No
281	Jeffrey Road	Poplar (Meadows) to Walnut Avenue	70.8	70.9	70.9	0.1	1.5	No
282	Jeffrey Road	Alton Parkway to Barranca Parkway	70.5	70.8	70.8	0.3	1.5	No
283	Jeffrey Road	Irvine Center Drive to Poplar (Meadows)	70.6	70.7	70.7	0.1	1.5	No
284	Jeffrey Road	I-405 NB Off-Ramp to Quail Creek	70.5	70.7	70.8	0.3	1.5	No
285	Jeffrey Road	Barranca Parkway to Irvine Valley College	70.4	70.6	70.6	0.2	1.5	No
286	Jeffrey Road	Quail Creek to Alton Parkway	70.5	70.6	70.7	0.2	1.5	No
287	Jeffrey Road	Irvine Valley College to Irvine Center Drive	70.3	70.4	70.4	0.1	1.5	No
288	Jeffrey Road	Trabuco Road to Hideaway	69.7	69.6	69.7	0.0	1.5	No
289	Jeffrey Road	Hideaway to Bryan Avenue	69.7	69.6	69.7	0.0	1.5	No
290	Jeffrey Road	Roosevelt to Grove	70.4	70.4	70.4	0.0	1.5	No



Table 17

291	Jeffrey Road	Grove to Trabuco Road	70.3	70.2	70.2	-0.1	1.5	No
292	Jeffrey Road	Bryan Avenue to Irvine Boulevard	68.5	68.5	68.5	0.0	1.5	No
293	Jeffrey Road	Encore to Portola Parkway	66.1	65.8	65.6	-0.5	1.5	No
294	Jeffrey Road	Irvine Boulevard to Encore	65.6	65.5	65.4	-0.2	1.5	No
295	Jeronimo Road	Goodyear to Bake Parkway	64.8	64.6	64.5	-0.3	3.0	No
296	Jeronimo Road	Alton Parkway to Goodyear	64.7	64.3	64.3	-0.4	3.0	No
297	Laguna Canyon Road	Old Laguna Canyon Road to Lake Forest Drive	73.3	73.3	73.4	0.1	1.5	No
298	Laguna Canyon Road	Laguna Canyon Freeway to Quail Hill Parkway	70.0	69.9	70.0	0.0	1.5	No
299	Laguna Canyon Road	Discovery to Sand Canyon Avenue	68.1	69.1	69.1	1.0	1.5	No
300	Laguna Canyon Road	I-405 Overcrossing to Pasteur	68.0	67.9	68.0	0.0	1.5	No
301	Laguna Canyon Road	Irvine Center Drive to Discovery	67.3	67.5	67.5	0.2	1.5	No
302	Laguna Canyon Road	Quail Hill Parkway to I-405 Overcrossing	68.0	67.9	68.0	0.0	1.5	No
303	Laguna Canyon Road	Pasteur to Alton Parkway	66.9	66.9	67.0	0.1	1.5	No
304	Laguna Canyon Road	Waterworks to Irvine Center Drive	66.2	66.4	66.4	0.2	1.5	No
305	Laguna Canyon Road	Alton Parkway to Barranca Parkway	66.0	66.1	66.1	0.1	1.5	No
306	Laguna Canyon Road	Barranca Parkway to Waterworks	65.6	65.6	65.6	0.0	1.5	No
307	Lake Forest Drive	Hidden Canyon to Laguna Canyon Road	69.2	69.3	69.5	0.3	1.5	No
308	Lake Forest Drive	Bake Parkway to Hidden Canyon (Romano)	69.2	69.3	69.5	0.3	1.5	No
309	Lake Forest Drive	Tesla to Bake Parkway	66.2	66.3	66.6	0.4	1.5	No
310	Lake Road	Alton Parkway to Barranca Parkway	59.2	59.2	59.2	0.0	5.0	No
311	Lynx	Irvine Boulevard to Astor	53.5	53.2	53.2	-0.3	5.0	No
312	MacArthur Boulevard	I-405 SB Off-Ramp to Michelson Drive	76.4	76.7	76.7	0.3	1.5	No
313	MacArthur Boulevard	Main Street to I-405 NB Off-Ramp	76.5	76.6	76.7	0.2	1.5	No
314	MacArthur Boulevard	I-405 NB Off-Ramp and I-405 SB Off-Ramp	76.4	76.6	76.6	0.2	1.5	No
315	MacArthur Boulevard	Jamboree Road to Fairchild Road	69.9	69.9	69.9	0.0	1.5	No
316	MacArthur Boulevard	Fairchild Road to University Drive	69.8	69.9	69.8	0.0	1.5	No
317	MacArthur Boulevard	Fitch to Red Hill Avenue	70.5	70.5	70.5	0.0	1.5	No
318	MacArthur Boulevard	Michelson Drive to Douglas	71.8	72.1	72.2	0.4	1.5	No
319	MacArthur Boulevard	Douglas to Campus Drive	71.9	72.1	72.2	0.3	1.5	No
320	MacArthur Boulevard	Skypark to Main Street	69.6	69.5	69.5	-0.1	1.5	No
321	MacArthur Boulevard	Redhill Avenue to Skypark	68.5	68.3	68.4	-0.1	1.5	No
322	MacArthur Boulevard	Birch Street to Jamboree Road	66.8	67.0	67.1	0.3	1.5	No
323	MacArthur Boulevard	Campus Drive to Birch Street	69.1	69.3	69.4	0.3	1.5	No
324	Main Street	Gillette Avenue to Von Karman Avenue	70.2	70.7	70.8	0.6	1.5	No
325	Main Street	MacArthur Boulevard to Mercantile	69.9	70.2	70.3	0.4	1.5	No
326	Main Street	Executive Park to MacArthur Boulevard	68.2	68.4	68.4	0.2	1.5	No
327	Main Street	Von Karman Avenue to Cartwright	67.8	68.3	68.4	0.6	1.5	No

Table 17

328	Main Street	McDermott to Red Hill Avenue	68.0	68.1	68.1	0.1	1.5	No
329	Main Street	Red Hill Avenue to Executive Circle	67.9	68.0	68.0	0.1	1.5	No
330	Main Street	Jamboree Road to Union	67.7	67.8	67.8	0.1	1.5	No
331	Main Street	Culver Drive to West Yale Loop	67.2	67.1	67.2	0.0	1.5	No
332	Main Street	Siglo to Jamboree Road	67.4	67.7	67.7	0.3	1.5	No
333	Main Street	Veneto to Harvard Avenue	67.6	67.5	67.5	-0.1	1.5	No
334	Main Street	Paseo Westpark to Culver Drive	66.4	66.4	66.3	-0.1	1.5	No
335	Main Street	Harvard Avenue to San Mateo	66.3	66.4	66.3	0.0	1.5	No
336	Marine Way	Sand Canyon Avenue to Ridge Valley (O Street)	72.1	72.3	72.3	0.2	1.5	No
337	Marine Way	Alton Parkway to Bake Parkway	69.0	69.3	69.3	0.3	1.5	No
338	Marine Way	Lynx to Barranca Parkway	69.4	69.3	69.3	-0.1	1.5	No
339	Marine Way	County Access to Treble	65.3	68.4	68.4	3.1	1.5	Yes
340	Marine Way	Ridge Valley (O Street) to Skyhawk	67.6	68.2	68.2	0.6	1.5	No
341	Marine Way	Skyhawk to County Access	64.9	67.1	67.2	2.3	3.0	No
342	Marine Way	Barranca Parkway to Alton Parkway	66.3	66.8	66.8	0.5	1.5	No
343	Marine Way	Treble to Lynx	67.1	66.4	66.4	-0.7	1.5	No
344	McGaw Avenue	Von Karman Avenue to Jamboree Road	63.6	64.3	64.3	0.7	3.0	No
345	McGaw Avenue	Red Hill Avenue to Von Karman Avenue	63.6	64.1	64.2	0.6	3.0	No
346	McGaw Avenue	Daimler to Red Hill Avenue	62.4	62.4	62.5	0.1	3.0	No
347	McGaw Avenue	Jamboree Road to Murphy Avenue	59.2	59.3	59.4	0.2	5.0	No
348	Meadowood	Culver Drive to Canyonwood	59.8	59.8	59.8	0.0	5.0	No
349	Meridian	Spectrum to Alton Parkway	54.9	55.3	55.5	0.6	5.0	No
350	Meridian	Alton Parkway to Gateway Boulevard	54.1	54.6	54.7	0.6	5.0	No
351	Merit	Irvine Boulevard to Cadence	57.3	57.9	58.0	0.7	5.0	No
352	Michelson Drive	Riparian to Harvard Avenue	67.8	68.3	68.3	0.5	1.5	No
353	Michelson Drive	Almond Tree Lane to Yale Avenue	66.7	67.1	67.1	0.4	1.5	No
354	Michelson Drive	Von Karman Avenue to Obsidian	67.8	68.0	68.0	0.2	1.5	No
355	Michelson Drive	Parkside to Culver Drive	66.8	67.8	67.8	1.0	1.5	No
356	Michelson Drive	Gillman to Seton/Sandburg Way	66.5	66.8	66.8	0.3	1.5	No
357	Michelson Drive	Carlson to Prince	67.0	67.3	67.3	0.3	1.5	No
358	Michelson Drive	MacArthur Boulevard to Dupont Drive	67.0	67.3	67.3	0.3	1.5	No
359	Michelson Drive	Harvard Avenue to Parkside	66.8	66.8	66.8	0.0	1.5	No
360	Michelson Drive	Bixby to Von Karman Avenue	66.3	66.7	66.7	0.4	1.5	No
361	Michelson Drive	Jamboree Road to Carlson	69.5	69.6	69.6	0.1	1.5	No
362	Michelson Drive	Teller to Jamboree Road	69.5	69.6	69.6	0.1	1.5	No
363	Michelson Drive	Jordan East to University Drive	66.8	66.9	66.9	0.1	1.5	No
364	Michelson Drive	Culver Drive to Angell	66.1	66.2	66.2	0.1	1.5	No

Table 17

365	Modjeska (A Street)	Portola Springs to Irvine Boulevard	71.7	71.7	71.7	0.0	1.5	No
366	Modjeska (A Street)	South of Irvine Boulevard	60.6	61.1	61.0	0.4	3.0	No
367	Muirlands Boulevard	Bake Parkway to City Limits	67.2	67.1	67.2	0.0	1.5	No
368	Muirlands Boulevard	Alton Parkway to Sterling	66.3	66.3	66.3	0.0	1.5	No
369	Muirlands Boulevard	Wrigley to Bake Parkway	66.2	66.3	66.3	0.1	1.5	No
370	Newport Coast Drive	SR-73 NB Off-Ramp to Turtle Ridge	66.7	66.6	66.6	-0.1	1.5	No
371	Newport Coast Drive	Turtle Crest to Bonita Canyon Drive	65.2	65.1	65.1	-0.1	1.5	No
372	Nightmist	Sand Canyon Avenue to Tulip (Road C)	62.1	61.9	61.8	-0.3	3.0	No
373	Northwood	Yale Avenue to Savannah	62.4	62.5	62.5	0.1	3.0	No
374	Northwood	Goldrush to Yale Avenue	61.3	61.5	61.5	0.2	3.0	No
375	Oak Canyon Drive	Valley Oak Drive to Sand Canyon Avenue	67.4	69.2	69.2	1.8	1.5	Yes
376	Pacifica	Gateway to Barranca Parkway	64.6	65.2	65.2	0.6	3.0	No
377	Pacifica	Alton Parkway to Gateway	63.2	64.0	64.0	0.8	3.0	No
378	Pacifica	Irvine Center Drive to Fortune Drive (Spectrum Center Drive)	63.2	62.7	62.8	-0.4	3.0	No
379	Pacifica	Meridian to Alton Parkway	60.0	60.8	60.8	0.8	1.5	No
380	Park Place	Christamon South to Yale Avenue	57.0	57.0	57.0	0.0	5.0	No
381	Portola Parkway	Bee Canyon Access Road to Sand Canyon Avenue	71.3	71.5	71.7	0.4	1.5	No
382	Portola Parkway	Jeffrey Road to Bee Canyon Access Road	71.3	71.5	71.7	0.4	1.5	No
383	Portola Parkway	Arrowhead to Ridge Valley Parkway	71.3	71.4	71.5	0.2	1.5	No
384	Portola Parkway	Sand Canyon Avenue to Arrowhead	70.9	71.0	71.1	0.2	1.5	No
385	Portola Parkway	Portola Springs to SR-241 SB Off-Ramp	70.0	70.1	70.1	0.1	1.5	No
386	Portola Parkway	Gatepark to Culver Drive	70.3	70.6	70.7	0.4	1.5	No
387	Portola Parkway	ETC-6 (SR-261) NB Off-Ramp to Gatepark	70.2	70.5	70.7	0.5	1.5	No
388	Portola Parkway	SR-261 SB Off-Ramp to SR-261 NB Off-Ramp	70.1	70.4	70.5	0.4	1.5	No
389	Portola Parkway	Jamboree Road to Bellevue	70.1	70.4	70.5	0.4	1.5	No
390	Portola Parkway	Bellevue to ETC-6 (SR-261) SB Off-Ramp	70.0	70.3	70.4	0.4	1.5	No
391	Portola Parkway	Yale Avenue to Jeffrey Road	69.8	70.1	70.2	0.4	1.5	No
392	Portola Parkway	Culver Drive to Yale Avenue	69.4	69.6	69.7	0.3	1.5	No
393	Portola Parkway	Silverado to Portola Springs	68.5	68.5	68.6	0.1	1.5	No
394	Pusan	Irvine Boulevard to Cadence	56.1	56.2	56.1	0.0	5.0	No
395	Quail Hill Parkway	Shady Canyon Drive to Passage	67.6	67.4	67.4	-0.2	1.5	No
396	Quail Hill Parkway	East Knollcrest to Laguna Canyon Road	65.6	65.5	65.5	-0.1	1.5	No
397	Quassar Drive (Spectrum)	Irvine Center Drive to Spectrum Center Drive (Fortune)	54.9	54.8	54.9	0.0	5.0	No
398	Red Hill Avenue	MacArthur Boulevard to McGaw Avenue	71.3	71.5	71.6	0.3	1.5	No
399	Red Hill Avenue	I-405 Over Crossing to Main Street	69.9	70.1	70.2	0.3	1.5	No
400	Red Hill Avenue	Alton Parkway to Deere Avenue	69.9	70.0	70.1	0.2	1.5	No
401	Red Hill Avenue	McGaw Avenue to Alton Parkway	69.7	69.9	70.0	0.3	1.5	No

Table 17

402	Red Hill Avenue	Deere Avenue to Barranca Parkway	69.7	69.8	69.9	0.2	1.5	No
403	Red Hill Avenue	Skypark East to MacArthur Boulevard	71.0	71.3	71.4	0.4	1.5	No
404	Red Hill Avenue	Main Street to Skypark East	70.4	70.6	70.8	0.4	1.5	No
405	Research Drive	Hubble to Bake Parkway	69.5	69.5	69.5	0.0	1.5	No
406	Research Drive	Scientific to Lake Forest Drive	67.6	67.4	67.8	0.2	1.5	No
407	Research Drive	Bake Parkway to Muller	66.5	66.6	66.7	0.2	1.5	No
408	Research Drive	Irvine Center Drive to Bunsen	65.5	65.6	65.7	0.2	1.5	No
409	Ridge Valley (O Street)	Irvine Boulevard to Trabuco Road (Great Park Boulevard)	67.4	67.3	67.3	-0.1	1.5	No
410	Ridge Valley (O Street)	Portola Parkway to Irvine Boulevard	66.5	66.4	66.4	-0.1	1.5	No
411	Ridge Valley (O Street)	Trabuco Road (Great Park Boulevard) to Marine Way	66.0	66.0	66.0	0.0	1.5	No
412	Ridge Valley (O Street)	Ranchland to Portola Parkway	58.1	58.1	58.1	0.0	5.0	No
413	Ridgeline Drive	Concordia East to University Drive	68.6	68.7	68.7	0.1	1.5	No
414	Ridgeline Drive	Turtle Rock Drive to San Simeon	68.2	68.4	68.4	0.2	1.5	No
415	Rockfield Avenue	Whatney to McLaren	67.5	67.6	67.7	0.2	1.5	No
416	Rockfield Avenue	Bake Parkway to Whatney	63.8	64.1	64.2	0.4	3.0	No
417	Rockfield Avenue	Thomas to Bake Parkway	62.6	63.1	63.1	0.5	3.0	No
418	Roosevelt	Jeffrey Road to Vision	66.1	66.5	66.6	0.5	1.5	No
419	Roosevelt	Yale Avenue to Van Buren	68.1	68.2	68.2	0.1	1.5	No
420	Roosevelt	Vision to Bay Tree	65.9	66.2	66.4	0.5	1.5	No
421	Roosevelt	Nimitz to Jeffrey Road	65.8	65.9	65.9	0.1	1.5	No
422	Roosevelt	Tulip (Road C) to Sand Canyon Avenue	65.6	65.6	65.7	0.1	1.5	No
423	Royal Oak	Alton Parkway to Eaglecreek	64.0	64.0	64.0	0.0	3.0	No
424	Sand Canyon Avenue	Oak Canyon Drive to Burt Road	71.9	72.1	72.1	0.2	1.5	No
425	Sand Canyon Avenue	Irvine Center Drive to Oak Canyon Drive	71.6	71.9	72.0	0.4	1.5	No
426	Sand Canyon Avenue	I-405 NB Off-Ramp to Alton Parkway	74.4	74.6	74.6	0.2	1.5	No
427	Sand Canyon Avenue	Burt Road to I-5 SB Off-Ramp	72.6	72.7	72.7	0.1	1.5	No
428	Sand Canyon Avenue	Marine to I-5 NB Off-Ramp	74.6	74.6	74.8	0.2	1.5	No
429	Sand Canyon Avenue	Trabuco Road to Towngate	71.3	71.1	71.3	0.0	1.5	No
430	Sand Canyon Avenue	Barranca Parkway to Waterworks	70.6	70.8	70.9	0.3	1.5	No
431	Sand Canyon Avenue	I-5 SB Off-Ramp to Marine	73.8	73.8	74.0	0.2	1.5	No
432	Sand Canyon Avenue	Hospital to Barranca Parkway	70.4	70.6	70.6	0.2	1.5	No
433	Sand Canyon Avenue	Nightmist to Roosevelt	73.4	73.5	73.5	0.1	1.5	No
434	Sand Canyon Avenue	I-405 SB Off-Ramp to I-405 NB Off-Ramp	73.4	73.5	73.5	0.1	1.5	No
435	Sand Canyon Avenue	I-5 NB Off-Ramp to Nightmist	73.5	73.5	73.7	0.2	1.5	No
436	Sand Canyon Avenue	Towngate to Irvine Boulevard	70.6	70.4	70.7	0.1	1.5	No
437	Sand Canyon Avenue	Waterworks to Irvine Center Drive	70.0	70.2	70.3	0.3	1.5	No
438	Sand Canyon Avenue	Irvine Boulevard to Portola Parkway	69.3	69.2	70.4	1.1	1.5	No

Table 17

439	Sand Canyon Avenue	Roosevelt to Trabuco Road	72.8	72.8	72.8	0.0	1.5	No
440	Sand Canyon Avenue	Alton Parkway to Hospital	70.5	70.6	70.6	0.1	1.5	No
441	Sand Canyon/Shady Canyon	Quail Hill Parkway to I-405 SB Ramps	71.6	71.7	71.8	0.2	1.5	No
442	Scientific Way	Irvine Center Drive to Wald	54.9	55.0	54.9	0.0	5.0	No
443	Shady Canyon Drive	Culver Drive/Bonita Canyon Drive to Cloverfield	68.8	69.2	69.2	0.4	1.5	No
444	Shady Canyon Drive	Bommer Canyon Road to Sunnyhill	67.3	67.5	67.6	0.3	1.5	No
445	Skyhawk	Great Park Boulevard to Marine Way	60.2	59.6	59.6	-0.6	3.0	No
446	Southwood	Yale Avenue to Colt	60.5	60.5	60.6	0.1	3.0	No
447	Southwood	Challenger to Yale Avenue	60.3	60.2	60.3	0.0	3.0	No
448	Spectrum Center Drive (Fortune Drive)	Pacifica to Quassar Drive (Spectrum )	61.9	61.9	62.0	0.1	3.0	No
449	Spectrum Center Drive (Fortune Drive)	Quassar Drive (Spectrum ) to Gatewayb	62.4	62.4	62.5	0.1	3.0	No
450	Sunnyhill	Shady Canyon Drive to Turtle Rock Drive	57.0	57.6	57.6	0.6	5.0	No
451	Technology Drive	Barranca Parkway to Alton Parkway	69.9	70.6	70.6	0.7	1.5	No
452	Technology Drive	Old Laguna Canyon Road to I-5/SR-133 Undercrossing	67.1	69.2	69.3	2.2	1.5	Yes
453	Technology Drive	I-5/SR-133 to Barranca Parkway	66.1	69.1	69.1	3.0	1.5	Yes
454	Technology Drive	Ada to Alton Parkway	59.9	63.0	63.1	3.2	5.0	No
455	Toledo Way	Bake Parkway to City Limits	65.8	65.7	65.7	-0.1	1.5	No
456	Toledo Way	Goodyear to Bake Parkway	64.9	64.7	64.7	-0.2	3.0	No
457	Toledo Way	Alton Parkway to Parker	64.5	64.3	64.4	-0.1	3.0	No
458	Trabuco Road	Keystone to Sand Canyon Avenue	67.0	67.1	67.2	0.2	1.5	No
459	Trabuco Road	Jeffrey Road to Keystone	66.9	66.9	66.9	0.0	1.5	No
460	Trabuco Road	Culver Drive to I-5 NB Off-Ramp	66.6	66.7	66.8	0.2	1.5	No
461	Trabuco Road	Monroe to Yale Avenue	66.5	66.6	66.7	0.2	1.5	No
462	Trabuco Road	I-5 NB Off-Ramp to Monroe	66.5	66.5	66.6	0.1	1.5	No
463	Trabuco Road	Yale Avenue to Remington	66.0	66.2	66.3	0.3	1.5	No
464	Trabuco Road	Remington to Jeffrey Road	66.0	66.0	66.1	0.1	1.5	No
465	Turtle Ridge Drive	Federation Way to Bonita Canyon	68.8	68.8	68.7	-0.1	1.5	No
466	Turtle Rock Drive	Ridgeline to Willowleaf	67.5	67.8	67.8	0.3	1.5	No
467	Turtle Rock Drive	Silkwood to Sunnyhill	67.4	67.7	67.8	0.4	1.5	No
468	Turtle Rock Drive	Canyon Park to Ridgeline	66.8	67.0	67.0	0.2	1.5	No
469	Turtle Rock Drive	Sunnyhill to Southernwood	64.0	64.0	64.0	0.0	3.0	No
470	Turtle Rock Drive	Campus Drive to Hillgate	64.0	64.1	64.0	0.0	3.0	No
471	Turtle Rock Drive	Paseo Segovia to Campus Drive	65.4	65.4	65.4	0.0	1.5	No
472	University Drive	Golden Glow to Yale Avenue	72.6	72.9	73.0	0.4	1.5	No
473	University Drive	Ridgeline to Michelson Drive	72.3	72.5	72.6	0.3	1.5	No
474	University Drive	Culver Drive to Golden Glow	72.5	72.8	72.9	0.4	1.5	No
475	University Drive	Yale Avenue to Ridgeline	72.2	72.3	72.4	0.2	1.5	No

Table 17

476	University Drive	Michelson Drive to I-405 SB Off-Ramp	72.4	72.7	72.7	0.3	1.5	No
477	University Drive	Mesa to Campus Drive	74.2	74.5	74.6	0.4	1.5	No
478	University Drive	MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	74.2	74.4	74.6	0.4	1.5	No
479	University Drive	California Avenue to Mesa	74.1	74.3	74.4	0.3	1.5	No
480	University Drive	Campus Drive to Harvard Avenue	70.3	70.6	70.7	0.4	1.5	No
481	University Drive	SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	71.3	71.5	71.7	0.4	1.5	No
482	University Drive	SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps	70.0	70.1	70.3	0.3	1.5	No
483	University Drive	San Joaquin to Culver Drive	69.4	69.7	69.8	0.4	1.5	No
484	University Drive	Harvard Avenue to San Joaquin	69.4	69.7	69.8	0.4	1.5	No
485	Valley Oak Drive	Hawkcreek to Barranca Parkway	68.0	68.0	68.0	0.0	1.5	No
486	Valley Oak Drive	Irvine Center Drive to Oak Canyon Drive	67.6	69.0	69.1	1.5	1.5	Yes
487	Valley Oak Drive	Barranca Parkway to Irvine Center Drive	65.7	66.7	66.8	1.1	1.5	No
488	Valley Oak Drive	Alton Parkway to Hawkcreek	65.0	64.8	64.8	-0.2	1.5	No
489	Von Karman Avenue	Marriott to Morse Avenue	70.6	70.9	70.9	0.3	1.5	No
490	Von Karman Avenue	Michelson Drive to Quartz	70.4	70.7	70.8	0.4	1.5	No
491	Von Karman Avenue	McGaw Avenue to Alton Parkway	70.1	70.7	70.7	0.6	1.5	No
492	Von Karman Avenue	Alton Parkway to Barranca Parkway	69.7	70.3	70.4	0.7	1.5	No
493	Von Karman Avenue	Main Street to Anchor	69.9	70.6	70.6	0.7	1.5	No
494	Von Karman Avenue	Anchor to McGaw Avenue	69.9	70.4	70.5	0.6	1.5	No
495	Von Karman Avenue	Morse to Main Street	69.9	70.2	70.2	0.3	1.5	No
496	Von Karman Avenue	Martin to Dupont Drive	69.2	69.5	69.6	0.4	1.5	No
497	Von Karman Avenue	Campus Drive to Martin	69.2	69.5	69.5	0.3	1.5	No
498	Von Karman Avenue	Dupont Drive to Michelson Drive	69.2	69.5	69.5	0.3	1.5	No
499	Walnut Avenue	Jeffrey Road to I-5 SB Off-Ramp	70.5	70.9	70.9	0.4	1.5	No
500	Walnut Avenue	Myford Road to Jamboree Road SB Off-Ramp	68.9	69.1	69.1	0.2	1.5	No
501	Walnut Avenue	The Mall Street to Culver Drive	68.5	68.7	68.8	0.3	1.5	No
502	Walnut Avenue	Harvard Avenue to The Mall Street	68.4	68.7	68.7	0.3	1.5	No
503	Walnut Avenue	Franciscan Street to Ravenwood Street	68.1	68.4	68.5	0.4	1.5	No
504	Walnut Avenue	Ravenwood Street to Yale Avenue	68.1	68.4	68.3	0.2	1.5	No
505	Walnut Avenue	Culver Drive to Franciscan Street	68.1	68.3	68.4	0.3	1.5	No
506	Walnut Avenue	Peters Canyon Road to Harvard Avenue	67.6	67.9	68.0	0.4	1.5	No
507	Walnut Avenue	Jamboree Road NB Off-Ramp to Peters Canyon Road	67.5	67.8	67.8	0.3	1.5	No
508	Walnut Avenue	Yale Avenue to Kazan Street	67.0	67.1	67.2	0.2	1.5	No
509	Walnut Avenue	Wisteria to Jeffrey Road	67.0	67.1	67.2	0.2	1.5	No
510	Warner Avenue	Jamboree Road SB Off-ramp to Construction North	70.1	70.2	70.1	0.0	1.5	No
511	Warner Avenue	Construction North to Harvard Avenue	68.4	68.6	68.5	0.1	1.5	No
512	Warner Avenue	Harvard Avenue to Paseo Westpark	66.8	67.0	67.0	0.2	1.5	No

Table 17

513	Warner Avenue	Santa Ynez to Culver Drive	65.6	66.0	66.0	0.4	1.5	No
514	Warner Avenue	Culver Drive to West Yale Loop	65.1	65.7	65.7	0.6	1.5	No
515	West Yale Loop	Alton Parkway to Blue Lake North	64.0	64.0	64.0	0.0	3.0	No
516	West Yale Loop	Eagle Run to Main Street	63.8	63.8	63.9	0.1	3.0	No
517	West Yale Loop	Thunder Run to Yale Avenue	63.6	63.9	63.9	0.3	3.0	No
518	West Yale Loop	Main Street to Timber Run	62.9	62.9	62.8	-0.1	3.0	No
519	West Yale Loop	Yale Avenue to Shorebird	62.1	62.9	63.0	0.9	3.0	No
520	West Yale Loop	Warner Avenue to Stonecreek South	62.4	62.6	62.6	0.2	3.0	No
521	West Yale Loop	Barranca Parkway to Alton Parkway	62.4	62.4	62.4	0.0	3.0	No
522	West Yale Loop	Stonecreek North to Warner Avenue	62.0	62.4	62.5	0.5	3.0	No
523	West Yale Loop	Birdsong to Barranca Parkway	62.2	62.3	62.3	0.1	3.0	No
524	Westwood	Yorktown to Bryan Avenue	63.6	63.6	63.5	-0.1	3.0	No
525	Westwood	Bryan Avenue to Leaf	61.6	61.5	61.5	-0.1	3.0	No
526	Yale Avenue	Deerfield Avenue to Winvale Avenue	68.6	68.6	68.6	0.0	1.5	No
527	Yale Avenue	Hicks Canyon Drive to Meadowood	67.4	67.3	67.3	-0.1	1.5	No
528	Yale Avenue	Walnut Avenue to Roosevelt	70.9	71.0	71.0	0.1	1.5	No
529	Yale Avenue	Roosevelt to Trabuco Road	67.1	67.0	67.1	0.0	1.5	No
530	Yale Avenue	Irvine Center Drive to Deerfield Avenue	67.0	66.9	66.9	-0.1	1.5	No
531	Yale Avenue	West Yale Loop to Irvine Center Drive	65.8	66.3	66.4	0.6	1.5	No
532	Yale Avenue	Winvale Avenue to Karen Ann Lane	65.7	65.7	65.7	0.0	1.5	No
533	Yale Avenue	Karen Ann Lane to Walnut Avenue	65.7	65.7	65.7	0.0	1.5	No
534	Yale Avenue	Trabuco Road to Southwood	65.6	65.6	65.7	0.1	1.5	No
535	Yale Avenue	Southwood to Bryan Avenue	65.6	65.4	65.5	-0.1	1.5	No
536	Yale Avenue	Northwood to Irvine Boulevard	65.3	65.1	65.1	-0.2	1.5	No
537	Yale Avenue	Bryan Avenue to Monticello	65.2	65.0	65.0	-0.2	1.5	No
538	Yale Avenue	Irvine Boulevard to Park Place	64.3	64.3	64.3	0.0	3.0	No
539	Yale Avenue	University Drive to Royce	63.0	63.4	63.5	0.5	3.0	No
540	Yale Court	Arborwood to Portola Parkway	60.3	60.3	60.3	0.0	3.0	No
<sup>1</sup> Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses. <sup>2</sup> The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use. <sup>3</sup> Does the Project create an incremental noise level increase exceeding the significance criteria?								

**ATTACHMENT B**  
**NOISE MODEL OUTPUT**



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Ada  
 Road Segment: Barranca Parway to Marine Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 0 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-42.27	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-59.51	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-63.47	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	24.9	23.8	22.0	16.0	24.6	25.2	
Medium Trucks:	18.9	18.2	11.8	10.3	18.7	19.0	
Heavy Trucks:	20.2	19.6	10.5	11.8	20.1	20.3	
Vehicle Noise:	26.9	26.0	22.7	18.2	26.7	27.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	0
CNEL:	0	0	0	1

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Ada  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,000 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	330 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-6.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-23.49	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-27.45	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.0	56.9	55.2	49.1	57.7	58.4
Medium Trucks:	52.0	51.3	45.0	43.4	51.9	52.1
Heavy Trucks:	53.3	52.7	43.7	44.9	53.3	53.4
Vehicle Noise:	60.0	59.1	55.8	51.3	59.8	60.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	13	28	61	131
CNEL:	14	30	65	141

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Enterprise to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 42,200 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,482 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.01	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.23	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.19	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.3	66.5	60.4	69.1	69.7
Medium Trucks:	62.9	62.2	55.8	54.3	62.8	63.0
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4
Vehicle Noise:	71.0	70.1	67.0	62.3	70.8	71.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	95	205	442	952
CNEL:	102	220	475	1,022

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: I-5 NB Off-Ramp to Technology Drive West

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,787 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.37	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.86	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.82	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.1	69.0	67.3	61.2	69.8	70.4	
Medium Trucks:	63.7	63.0	56.6	55.1	63.5	63.8	
Heavy Trucks:	64.1	63.5	54.4	55.7	64.1	64.2	
Vehicle Noise:	71.8	70.9	67.8	63.0	71.6	72.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	102	220	474	1,021
CNEL:	110	236	509	1,097

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: East Yale Loop to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,401 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.39	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.84	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.80	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.4	68.3	66.5	60.5	69.1	69.7	
Medium Trucks:	62.9	62.2	55.9	54.3	62.8	63.0	
Heavy Trucks:	63.3	62.7	53.7	55.0	63.3	63.4	
Vehicle Noise:	71.0	70.1	67.1	62.3	70.8	71.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	153	331	712
CNEL:	77	165	355	765

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Gateway Boulevard to Enterprise

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,211 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.04	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.20	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.16	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.3	66.3	64.5	58.5	67.1	67.7	
Medium Trucks:	60.9	60.2	53.9	52.3	60.8	61.0	
Heavy Trucks:	61.3	60.7	51.7	53.0	61.3	61.4	
Vehicle Noise:	69.0	68.1	65.1	60.3	68.8	69.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	151	326	703
CNEL:	76	163	351	755

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Jeffrey Road to Royal Oak

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,815 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.01	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.1	65.3	59.3	67.9	68.5
Medium Trucks:	61.7	61.0	54.7	53.1	61.6	61.8
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	69.8	68.9	65.9	61.1	69.6	70.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	274	591
CNEL:	63	137	295	635

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Daimler Street to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	5,000 vehicles	Autos:				15
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):				15
Peak Hour Volume:	413 vehicles	Heavy Trucks (3+ Axles):				15
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-6.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-23.49	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-27.45	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.7	60.6	58.9	52.8	61.4	62.0
Medium Trucks:	55.3	54.6	48.2	46.7	55.2	55.4
Heavy Trucks:	55.7	55.1	46.1	47.3	55.7	55.8
Vehicle Noise:	63.4	62.5	59.4	54.7	63.2	63.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	102	220
CNEL:	24	51	110	236



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,947 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.75	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.71	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.4	65.6	59.6	68.2	68.8	
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1	
Heavy Trucks:	62.4	61.8	52.8	54.1	62.4	62.5	
Vehicle Noise:	70.1	69.2	66.2	61.4	69.9	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	287	619
CNEL:	67	143	309	665

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: West Yale Loop to Lake Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,100 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,906 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.39	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.85	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.80	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0
Heavy Trucks:	62.3	61.7	52.7	54.0	62.3	62.4
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	283	611
CNEL:	66	141	304	656

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Technology Drive West to Ada

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,459 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.50	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.74	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.70	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	67.2	65.4	59.3	68.0	68.6	
Medium Trucks:	61.8	61.1	54.7	53.2	61.7	61.9	
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3	
Vehicle Noise:	69.9	69.0	65.9	61.2	69.7	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	355	765
CNEL:	82	177	382	822

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Creek Road to East Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,100 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,823 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.20	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.04	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.99	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.1	65.3	59.3	67.9	68.5
Medium Trucks:	61.7	61.1	54.7	53.1	61.6	61.8
Heavy Trucks:	62.1	61.6	52.5	53.8	62.1	62.2
Vehicle Noise:	69.9	68.9	65.9	61.1	69.7	70.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	128	275	593
CNEL:	64	137	296	637

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Red Hill Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,147 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.01	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.1	65.1	63.3	57.3	65.9	66.5	
Medium Trucks:	59.7	59.0	52.7	51.1	59.6	59.8	
Heavy Trucks:	60.1	59.5	50.5	51.8	60.1	60.2	
Vehicle Noise:	67.8	66.9	63.9	59.1	67.6	68.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	94	202	435
CNEL:	47	101	217	468

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Lake Road to Creek Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,799 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.05	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.1	67.0	65.3	59.2	67.8	68.4	
Medium Trucks:	61.7	61.0	54.6	53.1	61.5	61.8	
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2	
Vehicle Noise:	69.8	68.9	65.8	61.0	69.6	70.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	273	587
CNEL:	63	136	293	631

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Telemetry to Banting

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,411 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.91	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.15	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.11	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.0	66.0	64.2	58.2	66.8	67.4	
Medium Trucks:	60.6	59.9	53.6	52.0	60.5	60.7	
Heavy Trucks:	61.0	60.4	51.4	52.7	61.0	61.1	
Vehicle Noise:	68.7	67.8	64.8	60.0	68.5	69.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	108	232	500
CNEL:	54	116	249	537

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Irvine Boulevard to Commercentre

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,789 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.05	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.19	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.15	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0
Heavy Trucks:	62.3	61.7	52.7	54.0	62.3	62.4
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	381	821
CNEL:	88	190	409	882



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Jenner to Telemetry

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,403 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.94	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.18	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.13	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	66.0	64.2	58.1	66.8	67.4
Medium Trucks:	60.6	59.9	53.6	52.0	60.5	60.7
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1
Vehicle Noise:	68.7	67.8	64.8	60.0	68.5	69.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	107	231	498
CNEL:	53	115	248	535

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Irvine Center Drive to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,900 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,889 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.35	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.88	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.84	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.6	63.8	57.8	66.4	67.0
Medium Trucks:	60.2	59.6	53.2	51.6	60.1	60.3
Heavy Trucks:	60.6	60.1	51.0	52.3	60.6	60.7
Vehicle Noise:	68.4	67.4	64.4	59.6	68.2	68.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	294	633
CNEL:	68	147	316	680

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Sand Canyon Avenue to Hospital

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,153 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.92	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.32	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.27	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.2	69.1	67.4	61.3	69.9	70.5	
Medium Trucks:	63.8	63.1	56.7	55.2	63.6	63.9	
Heavy Trucks:	64.2	63.6	54.5	55.8	64.1	64.3	
Vehicle Noise:	71.9	71.0	67.9	63.1	71.7	72.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	167	360	776
CNEL:	83	180	387	834

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Laguna Canyon Road to Jenner

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,000 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,403 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.94	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.18	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.13	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	66.0	64.2	58.1	66.8	67.4
Medium Trucks:	60.6	59.9	53.6	52.0	60.5	60.7
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1
Vehicle Noise:	68.7	67.8	64.8	60.0	68.5	69.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	107	231	498
CNEL:	53	115	248	535

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Project Name: Irvine GP  
 Road Name: Alton Parkway Job Number: 15937  
 Road Segment: Technology Drive East to Barranca Pkwy/Muirlands Blvd

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b> Average Daily Traffic (Adt): 25,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,129 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	<b>Site Conditions (Hard = 10, Soft = 15)</b> Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b> Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<b>Vehicle Mix</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table> <b>Noise Source Elevations (in feet)</b> Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Lane Equivalent Distance (in feet)</b> Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.87	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.37	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.32	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.1	64.3	58.3	66.9	67.5
Medium Trucks:	60.7	60.1	53.7	52.2	60.6	60.9
Heavy Trucks:	61.2	60.6	51.5	52.8	61.1	61.3
Vehicle Noise:	68.9	68.0	64.9	60.1	68.7	69.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	148	318	685
CNEL:	74	159	342	736

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Royal Oak to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,551 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.50	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.74	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.70	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.4	64.6	58.6	67.2	67.8
Medium Trucks:	61.0	60.3	54.0	52.4	60.9	61.1
Heavy Trucks:	61.4	60.8	51.8	53.1	61.4	61.5
Vehicle Noise:	69.2	68.2	65.2	60.4	69.0	69.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	115	247	532
CNEL:	57	123	265	572

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Banting to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,221 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.78	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.74	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.4	63.6	57.5	66.2	66.8
Medium Trucks:	60.0	59.3	52.9	51.4	59.9	60.1
Heavy Trucks:	60.4	59.8	50.8	52.0	60.4	60.5
Vehicle Noise:	68.1	67.2	64.2	59.4	67.9	68.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	98	211	454
CNEL:	49	105	226	487

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Barranca Pkwy/Muirlands Blvd to Jeronimo Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,200 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,657 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.83	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.40	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.36	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.1	65.3	59.3	67.9	68.5
Medium Trucks:	61.7	61.0	54.7	53.1	61.6	61.8
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	69.8	68.9	65.9	61.1	69.6	70.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	171	369	795
CNEL:	85	184	396	854



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Ada to Technology Drive East

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,162 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.94	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.30	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.26	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.2	64.4	58.4	67.0	67.6
Medium Trucks:	60.8	60.1	53.8	52.2	60.7	60.9
Heavy Trucks:	61.2	60.6	51.6	52.9	61.2	61.3
Vehicle Noise:	68.9	68.0	65.0	60.2	68.7	69.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	149	321	693
CNEL:	74	160	345	744

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,900 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,312 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.47	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.42	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.8	66.5	67.1
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4
Heavy Trucks:	60.7	60.1	51.1	52.3	60.7	60.8
Vehicle Noise:	68.4	67.5	64.5	59.7	68.2	68.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	221	476
CNEL:	51	110	237	511

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Jeronimo Road to Hughes

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,900 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,467 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.51	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.73	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.68	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.8	65.0	58.9	67.6	68.2
Medium Trucks:	61.4	60.7	54.3	52.8	61.3	61.5
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	69.5	68.6	65.6	60.8	69.3	69.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	163	351	756
CNEL:	81	175	377	813

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Hughes to Morgan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,335 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.27	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.96	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.92	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.6	66.5	64.8	58.7	67.3	67.9	
Medium Trucks:	61.1	60.5	54.1	52.6	61.0	61.3	
Heavy Trucks:	61.6	61.0	51.9	53.2	61.5	61.7	
Vehicle Noise:	69.3	68.4	65.3	60.5	69.1	69.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	338	729
CNEL:	78	169	364	783

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Morgan to Toledo Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,972 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.54	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.70	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.65	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.8	65.8	64.0	58.0	66.6	67.2	
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5	
Heavy Trucks:	60.8	60.2	51.2	52.5	60.8	60.9	
Vehicle Noise:	68.5	67.6	64.6	59.8	68.3	68.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	140	302	651
CNEL:	70	151	325	700

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: San Marino to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,900 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,972 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.54	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.70	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.65	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.8	64.0	58.0	66.6	67.2
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5
Heavy Trucks:	60.8	60.2	51.2	52.5	60.8	60.9
Vehicle Noise:	68.5	67.6	64.6	59.8	68.3	68.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	140	302	651
CNEL:	70	151	325	700

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Jamboree Road to Murphy Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,650 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.23	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.47	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.43	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	65.0	63.2	57.2	65.8	66.4
Medium Trucks:	59.6	59.0	52.6	51.1	59.5	59.8
Heavy Trucks:	60.1	59.5	50.4	51.7	60.0	60.2
Vehicle Noise:	67.8	66.8	63.8	59.0	67.6	68.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	268	578
CNEL:	62	134	288	621

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Hospital to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,700 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,543 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.53	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.76	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.72	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.7	65.9	59.8	68.5	69.1
Medium Trucks:	62.3	61.6	55.3	53.7	62.2	62.4
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.4	69.5	66.5	61.7	70.2	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	134	289	622
CNEL:	67	144	310	668



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,500 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,691 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.13	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.36	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.32	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.1	66.3	60.2	68.9	69.5
Medium Trucks:	62.7	62.0	55.7	54.1	62.6	62.8
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	70.8	69.9	66.9	62.1	70.6	71.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	142	307	661
CNEL:	71	153	330	710

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Murphy Avenue to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,675 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.17	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.41	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.36	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.1	65.1	63.3	57.3	65.9	66.5	
Medium Trucks:	59.7	59.0	52.7	51.1	59.6	59.8	
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2	
Vehicle Noise:	67.8	66.9	63.9	59.1	67.6	68.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	126	271	584
CNEL:	63	135	291	628

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Foster to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,700 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,625 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.30	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.54	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.49	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.2	57.1	65.7	66.4
Medium Trucks:	59.6	58.9	52.5	51.0	59.5	59.7
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1
Vehicle Noise:	67.7	66.8	63.7	59.0	67.5	68.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	123	266	573
CNEL:	62	133	286	615

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Fairbanks to Foster

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,469 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.74	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.98	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.93	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.5	62.7	56.7	65.3	65.9
Medium Trucks:	59.1	58.5	52.1	50.6	59.0	59.2
Heavy Trucks:	59.5	59.0	49.9	51.2	59.5	59.7
Vehicle Noise:	67.3	66.3	63.3	58.5	67.1	67.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	115	248	535
CNEL:	58	124	267	575

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Toledo Way to Berteau

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,716 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.06	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.30	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.26	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	65.2	63.4	57.4	66.0	66.6
Medium Trucks:	59.8	59.1	52.8	51.2	59.7	59.9
Heavy Trucks:	60.2	59.6	50.6	51.9	60.2	60.3
Vehicle Noise:	67.9	67.0	64.0	59.2	67.7	68.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	128	276	594
CNEL:	64	137	296	638

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Pacifica to Meridian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,221 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.54	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.78	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.74	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.7	64.9	58.8	67.5	68.1
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4
Heavy Trucks:	61.7	61.1	52.1	53.3	61.7	61.8
Vehicle Noise:	69.4	68.5	65.5	60.7	69.2	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	115	247	532
CNEL:	57	123	265	571

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Bertea to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,675 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.17	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.41	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.36	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	65.1	63.3	57.3	65.9	66.5
Medium Trucks:	59.7	59.0	52.7	51.1	59.6	59.8
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2
Vehicle Noise:	67.8	66.9	63.9	59.1	67.6	68.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	126	271	584
CNEL:	63	135	291	628

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Meridian to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,188 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.66	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-18.90	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-22.85	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.6	61.8	55.8	64.4	65.0
Medium Trucks:	58.2	57.5	51.2	49.6	58.1	58.3
Heavy Trucks:	58.6	58.0	49.0	50.3	58.6	58.7
Vehicle Noise:	66.3	65.4	62.4	57.6	66.1	66.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	100	216	465
CNEL:	50	108	232	499



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Paseo Westpark to San Marino

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,601 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.37	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.60	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.56	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.9	63.1	57.1	65.7	66.3
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0
Vehicle Noise:	67.6	66.7	63.7	58.9	67.4	67.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	122	263	567
CNEL:	61	131	283	609

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Alton Parkway  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,500 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,279 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.34	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-18.58	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-22.53	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.0	63.9	62.1	56.1	64.7	65.3
Medium Trucks:	58.5	57.9	51.5	50.0	58.4	58.6
Heavy Trucks:	58.9	58.4	49.3	50.6	58.9	59.1
Vehicle Noise:	66.7	65.7	62.7	57.9	66.5	66.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	105	227	488
CNEL:	52	113	243	524

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Astor  
 Road Segment: Lynx to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,200 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	182 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-7.60	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-24.84	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-28.80	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.8	53.7	52.0	45.9	54.5	55.1
Medium Trucks:	49.3	48.6	42.3	40.7	49.2	49.4
Heavy Trucks:	51.8	51.2	42.1	43.4	51.7	51.9
Vehicle Noise:	57.3	56.4	52.8	48.6	57.1	57.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	11	24	52
CNEL:	6	12	26	55

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Astor  
 Road Segment: Cadence to Lynx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 0 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-41.03	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-58.26	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-62.22	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	21.4	20.3	18.5	12.5	21.1	21.7	
Medium Trucks:	15.9	15.2	8.8	7.3	15.8	16.0	
Heavy Trucks:	18.3	17.7	8.7	10.0	18.3	18.4	
Vehicle Noise:	23.9	23.0	19.4	15.2	23.7	24.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	0
CNEL:	0	0	0	0

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Bake Parkway  
 Road Segment: I-5 NB Off-Ramp to Rockfield Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 71,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,899 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	5.30	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-11.94	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-15.90	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.4	72.3	70.6	64.5	73.1	73.7	
Medium Trucks:	67.0	66.3	59.9	58.4	66.8	67.1	
Heavy Trucks:	67.4	66.8	57.8	59.0	67.4	67.5	
Vehicle Noise:	75.1	74.2	71.1	66.3	74.9	75.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	212	456	983	2,118
CNEL:	228	490	1,056	2,276

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Bake Parkway  
 Road Segment: Muirlands Boulevard to Jeronimo Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 58,900 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,859 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.46	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-12.78	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-16.74	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.7	67.9	61.9	70.5	71.1
Medium Trucks:	64.3	63.7	57.3	55.7	64.2	64.4
Heavy Trucks:	64.7	64.2	55.1	56.4	64.7	64.9
Vehicle Noise:	72.5	71.5	68.5	63.7	72.3	72.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	119	256	552	1,188
CNEL:	128	275	593	1,277

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Bake Parkway  
 Road Segment: Rockfield Boulevard to Muirlands Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 61,900 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,107 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 56.593				
Road Grade: 0.0%	Medium Trucks: 56.522				
Left View: -90.0 degrees	Heavy Trucks: 56.593				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.67	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-12.57	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-16.52	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.8	71.7	69.9	63.9	72.5	73.1	
Medium Trucks:	66.3	65.7	59.3	57.8	66.2	66.4	
Heavy Trucks:	66.7	66.2	57.1	58.4	66.7	66.9	
Vehicle Noise:	74.5	73.5	70.5	65.7	74.3	74.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	192	415	893	1,924
CNEL:	207	445	960	2,067

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Bake Parkway  
 Road Segment: Jeronimo Road to Toledo Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 48,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,001 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.61	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.62	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.58	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.9	68.9	67.1	61.0	69.7	70.3	
Medium Trucks:	63.5	62.8	56.4	54.9	63.4	63.6	
Heavy Trucks:	63.9	63.3	54.3	55.5	63.9	64.0	
Vehicle Noise:	71.6	70.7	67.7	62.9	71.4	71.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	104	225	485	1,044
CNEL:	112	242	521	1,122



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Bake Parkway  
 Road Segment: Toledo Way to Cromwell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,704 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.28	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.96	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.92	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.8	60.7	69.3	69.9
Medium Trucks:	63.1	62.5	56.1	54.6	63.0	63.3
Heavy Trucks:	63.6	63.0	53.9	55.2	63.5	63.7
Vehicle Noise:	71.3	70.4	67.3	62.5	71.1	71.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	99	214	460	992
CNEL:	107	230	495	1,066

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Bake Parkway  
 Road Segment: Cromwell to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 43,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,581 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.13	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.11	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.06	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.4	68.4	66.6	60.6	69.2	69.8
Medium Trucks:	63.0	62.3	56.0	54.4	62.9	63.1
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	71.1	70.2	67.2	62.4	70.9	71.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	209	450	970
CNEL:	104	224	483	1,042

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Bake Parkway  
 Road Segment: Research Drive to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,100 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,823 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.20	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.04	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.99	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.4	63.7	57.6	66.2	66.8
Medium Trucks:	60.1	59.4	53.0	51.5	60.0	60.2
Heavy Trucks:	60.5	59.9	50.9	52.1	60.5	60.6
Vehicle Noise:	68.2	67.3	64.2	59.5	68.0	68.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	287	618
CNEL:	66	143	308	664

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Bake Parkway  
 Road Segment: Irvine Center Drive to Research Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,000 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	660 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	84.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 74.458				
Road Grade:	0.0%	Medium Trucks: 74.404				
Left View:	-90.0 degrees	Heavy Trucks: 74.458				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-21.45	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-25.41	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.1	61.0	59.3	53.2	61.8	62.4
Medium Trucks:	55.7	55.0	48.6	47.1	55.5	55.8
Heavy Trucks:	56.1	55.5	46.5	47.7	56.1	56.2
Vehicle Noise:	63.8	62.9	59.8	55.0	63.6	64.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	68	146	314
CNEL:	34	73	157	337

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Bake Parkway  
 Road Segment: Lake Forest Drive to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,900 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	404 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	84.0 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		74.458		
Left View:	-90.0 degrees	Medium Trucks:		74.404		
Right View:	90.0 degrees	Heavy Trucks:		74.458		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-6.34	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-23.58	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-27.54	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.0	58.9	57.1	51.1	59.7	60.3
Medium Trucks:	53.5	52.9	46.5	44.9	53.4	53.6
Heavy Trucks:	53.9	53.4	44.3	45.6	53.9	54.1
Vehicle Noise:	61.7	60.7	57.7	52.9	61.5	61.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	49	105	226
CNEL:	24	52	113	243

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Banting  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 248 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-6.92	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-24.16	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-28.12	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.1	54.1	52.3	46.2	54.9	55.5
Medium Trucks:	49.3	48.7	42.3	40.8	49.2	49.5
Heavy Trucks:	51.2	50.6	41.6	42.8	51.2	51.3
Vehicle Noise:	57.4	56.5	53.0	48.6	57.2	57.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	41	87
CNEL:	9	20	43	93

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Pacifica to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,576 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.85	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.09	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.04	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.9	59.8	68.4	69.0	
Medium Trucks:	62.1	61.4	55.0	53.5	62.0	62.2	
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2	
Vehicle Noise:	70.3	69.3	66.4	61.5	70.1	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	293	631
CNEL:	68	146	315	679

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Banting to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,642 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.67	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.91	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.86	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.9	67.8	66.0	60.0	68.6	69.2	
Medium Trucks:	62.3	61.6	55.2	53.7	62.1	62.4	
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4	
Vehicle Noise:	70.4	69.5	66.6	61.7	70.2	70.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	140	301	649
CNEL:	70	150	324	698



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: I-5 HOV Ramp to Technology Drive West

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,200 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,337 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.76	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	66.9	65.1	59.1	67.7	68.3
Medium Trucks:	61.4	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5
Vehicle Noise:	69.6	68.6	65.7	60.8	69.3	69.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	122	262	566
CNEL:	61	131	282	608

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Technology Drive West to Ada

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,700 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,543 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.94	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.18	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.13	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	68.9
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	70.2	69.2	66.3	61.4	70.0	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	134	289	622
CNEL:	67	144	311	669

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Irvine Center Drive to I-5 HOV Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,180 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.30	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.4	66.4	64.6	58.5	67.2	67.8	
Medium Trucks:	60.8	60.1	53.8	52.2	60.7	60.9	
Heavy Trucks:	60.9	60.3	51.2	52.5	60.8	61.0	
Vehicle Noise:	69.0	68.1	65.1	60.3	68.8	69.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	112	242	520
CNEL:	56	121	260	560

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,400 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,178 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.68	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.64	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.0	67.3	61.2	69.8	70.4
Medium Trucks:	63.5	62.8	56.5	54.9	63.4	63.6
Heavy Trucks:	63.5	62.9	53.9	55.1	63.5	63.6
Vehicle Noise:	71.7	70.7	67.8	62.9	71.5	71.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	169	364	783
CNEL:	84	182	391	843

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: East Yale Loop to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,700 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,038 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.97	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.93	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	67.0	60.9	69.5	70.1
Medium Trucks:	63.2	62.5	56.2	54.6	63.1	63.3
Heavy Trucks:	63.2	62.6	53.6	54.9	63.2	63.3
Vehicle Noise:	71.4	70.5	67.5	62.6	71.2	71.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	348	749
CNEL:	81	174	374	806

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: West Yale Loop to Lake Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,021 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.00	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.96	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.8	68.7	66.9	60.9	69.5	70.1	
Medium Trucks:	63.2	62.5	56.1	54.6	63.0	63.3	
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3	
Vehicle Noise:	71.3	70.4	67.5	62.6	71.1	71.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	346	745
CNEL:	80	173	372	802

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Ada to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,469 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.35	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.3	65.6	59.5	68.1	68.7	
Medium Trucks:	61.8	61.1	54.7	53.2	61.7	61.9	
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9	
Vehicle Noise:	70.0	69.0	66.1	61.2	69.8	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	280	602
CNEL:	65	140	301	648

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Lake Road to Creek Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,848 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.16	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.35	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.4	68.3	66.5	60.5	69.1	69.7	
Medium Trucks:	62.8	62.1	55.7	54.2	62.7	62.9	
Heavy Trucks:	62.8	62.2	53.2	54.4	62.8	62.9	
Vehicle Noise:	71.0	70.0	67.1	62.2	70.8	71.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	151	326	702
CNEL:	76	163	350	755



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Red Hill Avenue to Armstrong Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,912 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.82	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-15.42	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-19.37	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.5	70.4	68.7	62.6	71.2	71.8	
Medium Trucks:	64.9	64.2	57.8	56.3	64.8	65.0	
Heavy Trucks:	64.9	64.3	55.3	56.5	64.9	65.0	
Vehicle Noise:	73.1	72.1	69.2	64.3	72.9	73.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	155	335	721	1,553
CNEL:	167	360	775	1,671

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Discovery/Herchel to Banting

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,900 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,312 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.64	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.88	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.84	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.8	65.1	59.0	67.6	68.2
Medium Trucks:	61.3	60.6	54.2	52.7	61.2	61.4
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4
Vehicle Noise:	69.5	68.5	65.6	60.7	69.3	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	120	259	559
CNEL:	60	129	279	601

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Lyon to East Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,300 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,757 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.61	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.57	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.1	66.3	60.3	68.9	69.5
Medium Trucks:	62.6	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	70.7	69.8	66.9	62.0	70.5	71.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	146	315	679
CNEL:	73	157	339	730

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Creek Road to Lyon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,900 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,724 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.46	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.69	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.65	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.2	60.2	68.8	69.4
Medium Trucks:	62.5	61.8	55.4	53.9	62.4	62.6
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	70.7	69.7	66.8	61.9	70.5	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	311	670
CNEL:	72	155	335	721

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,400 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,591 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.31	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.93	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.88	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.8	60.7	69.3	69.9
Medium Trucks:	63.0	62.3	56.0	54.4	62.9	63.1
Heavy Trucks:	63.0	62.4	53.4	54.7	63.0	63.1
Vehicle Noise:	71.2	70.3	67.3	62.4	71.0	71.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	200	432	930
CNEL:	100	216	464	1,001

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Sand Canyon Avenue to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 990 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.87	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-20.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-24.06	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.7	65.6	63.8	57.8	66.4	67.0	
Medium Trucks:	60.1	59.4	53.0	51.5	59.9	60.2	
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2	
Vehicle Noise:	68.2	67.3	64.4	59.5	68.0	68.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	100	215	463
CNEL:	50	107	231	498

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Armstrong Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,904 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.81	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.43	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.39	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.0	67.3	61.2	69.8	70.4
Medium Trucks:	63.5	62.8	56.5	54.9	63.4	63.6
Heavy Trucks:	63.5	62.9	53.9	55.1	63.5	63.6
Vehicle Noise:	71.7	70.8	67.8	62.9	71.5	72.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	466	1,004
CNEL:	108	233	501	1,080

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,130 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.53	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.48	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.2	64.4	58.4	67.0	67.6
Medium Trucks:	60.6	60.0	53.6	52.1	60.5	60.8
Heavy Trucks:	60.7	60.1	51.0	52.3	60.6	60.8
Vehicle Noise:	68.8	67.9	64.9	60.1	68.6	69.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	109	235	506
CNEL:	54	117	253	544



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Jamboree Road to Construction Circle

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,500 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,104 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.41	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.83	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.79	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.2	65.5	59.4	68.0	68.6
Medium Trucks:	61.7	61.0	54.6	53.1	61.6	61.8
Heavy Trucks:	61.7	61.1	52.1	53.3	61.7	61.8
Vehicle Noise:	69.9	68.9	66.0	61.1	69.7	70.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	172	370	798
CNEL:	86	185	399	859

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Santa Rosa to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,947 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.07	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.17	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.12	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	66.9	65.1	59.1	67.7	68.3
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5
Vehicle Noise:	69.5	68.6	65.7	60.8	69.3	69.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	163	352	758
CNEL:	82	176	378	815

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: FedEx to Discovery/Herchel

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,056 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.59	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.82	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.78	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.9	65.9	64.1	58.1	66.7	67.3
Medium Trucks:	60.3	59.7	53.3	51.8	60.2	60.5
Heavy Trucks:	60.4	59.8	50.7	52.0	60.4	60.5
Vehicle Noise:	68.5	67.6	64.6	59.8	68.3	68.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	104	224	483
CNEL:	52	112	241	520

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Jeffrey Road to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	11,500 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	949 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		57.786		
Left View:	-90.0 degrees	Medium Trucks:		57.717		
Right View:	90.0 degrees	Heavy Trucks:		57.787		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-3.05	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-20.29	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-24.25	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.4	63.7	57.6	66.2	66.8
Medium Trucks:	59.9	59.2	52.8	51.3	59.8	60.0
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0
Vehicle Noise:	68.1	67.1	64.2	59.3	67.9	68.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	97	209	450
CNEL:	48	104	225	484

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Laguna Canyon Road to FedEx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,048 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.62	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.86	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.81	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.9	65.9	64.1	58.0	66.7	67.3
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4
Heavy Trucks:	60.3	59.7	50.7	52.0	60.3	60.4
Vehicle Noise:	68.5	67.6	64.6	59.7	68.3	68.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	104	223	481
CNEL:	52	111	240	517

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Pullman Street to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 30,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,516 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.19	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-16.05	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-20.01	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.9	69.8	68.0	62.0	70.6	71.2	
Medium Trucks:	64.2	63.6	57.2	55.7	64.1	64.4	
Heavy Trucks:	64.3	63.7	54.7	55.9	64.3	64.4	
Vehicle Noise:	72.4	71.5	68.6	63.7	72.2	72.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	141	303	654	1,409
CNEL:	152	327	703	1,516

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Construction Circle to Fire Station

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,782 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.31	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.55	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.51	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.5	64.7	58.7	67.3	67.9
Medium Trucks:	61.0	60.3	53.9	52.4	60.8	61.1
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1
Vehicle Noise:	69.1	68.2	65.3	60.4	68.9	69.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	154	332	715
CNEL:	77	166	357	769

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Fire Station to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,782 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.31	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.55	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.51	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.5	64.7	58.7	67.3	67.9
Medium Trucks:	61.0	60.3	53.9	52.4	60.8	61.1
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1
Vehicle Noise:	69.1	68.2	65.3	60.4	68.9	69.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	154	332	715
CNEL:	77	166	357	769



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Paseo Westpark to Santa Rosa

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,733 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.44	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.67	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.63	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.4	64.6	58.6	67.2	67.8
Medium Trucks:	60.8	60.2	53.8	52.3	60.7	61.0
Heavy Trucks:	60.9	60.3	51.2	52.5	60.9	61.0
Vehicle Noise:	69.0	68.1	65.1	60.3	68.8	69.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	151	325	701
CNEL:	75	163	350	754

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Barranca Parkway  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,691 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.54	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.78	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.73	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.3	64.5	58.5	67.1	67.7
Medium Trucks:	60.7	60.1	53.7	52.2	60.6	60.8
Heavy Trucks:	60.8	60.2	51.1	52.4	60.7	60.9
Vehicle Noise:	68.9	68.0	65.0	60.2	68.7	69.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	149	320	690
CNEL:	74	160	345	742

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Bay Tree  
 Road Segment: Trabuco Road to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 173 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-8.47	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-25.71	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-29.67	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	53.6	52.5	50.8	44.7	53.3	53.9	
Medium Trucks:	47.8	47.1	40.8	39.2	47.7	47.9	
Heavy Trucks:	49.7	49.1	40.0	41.3	49.6	49.8	
Vehicle Noise:	55.8	54.9	51.5	47.1	55.6	56.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	15	32	69
CNEL:	7	16	34	74

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Beacon  
 Road Segment: Ridge Valley to Benchmark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	0 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-41.03	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-58.26	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-62.22	1.83	-1.20	-5.60	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	21.4	20.3	18.5	12.5	21.1	21.7	
Medium Trucks:	15.9	15.2	8.8	7.3	15.8	16.0	
Heavy Trucks:	18.3	17.7	8.7	10.0	18.3	18.4	
Vehicle Noise:	23.9	23.0	19.4	15.2	23.7	24.1	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	0
CNEL:	0	0	0	0

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Benchmark (LN Street)  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	0 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-41.03	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-58.26	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-62.22	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	21.4	20.3	18.5	12.5	21.1	21.7
Medium Trucks:	15.9	15.2	8.8	7.3	15.8	16.0
Heavy Trucks:	18.3	17.7	8.7	10.0	18.3	18.4
Vehicle Noise:	23.9	23.0	19.4	15.2	23.7	24.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	0
CNEL:	0	0	0	0

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Bison Avenue  
 Road Segment: SR-73 NB Off-Ramp to California Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,683 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.31	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.93	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.88	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.5	63.7	57.6	66.3	66.9
Medium Trucks:	60.3	59.6	53.2	51.7	60.2	60.4
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2
Vehicle Noise:	68.4	67.5	64.3	59.6	68.2	68.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	102	219	472
CNEL:	51	109	235	506

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Bonita Canyon Drive  
 Road Segment: MacArthur Boulevard to SR-73

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,401 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 75.0 feet Centerline Dist. to Observer: 75.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 70.413 Medium Trucks: 70.356 Heavy Trucks: 70.413																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.39	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.84	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-19.80	-2.33	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.1	67.0	65.2	59.2	67.8	68.4	
Medium Trucks:	61.6	61.0	54.6	53.1	61.5	61.7	
Heavy Trucks:	62.0	61.5	52.4	53.7	62.0	62.2	
Vehicle Noise:	69.8	68.8	65.8	61.0	69.6	70.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	151	325	701
CNEL:	75	162	350	753

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Bonita Canyon Drive  
 Road Segment: Turtle Ridge to Shady Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,400 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,353 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 70.413				
Road Grade: 0.0%	Medium Trucks: 70.356				
Left View: -90.0 degrees	Heavy Trucks: 70.413				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.10	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-18.33	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-22.29	-2.33	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.6	64.5	62.7	56.7	65.3	65.9	
Medium Trucks:	59.1	58.5	52.1	50.6	59.0	59.3	
Heavy Trucks:	59.6	59.0	49.9	51.2	59.5	59.7	
Vehicle Noise:	67.3	66.4	63.3	58.5	67.1	67.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	222	478
CNEL:	51	111	239	514



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Bonita Canyon Drive  
 Road Segment: Newport Coast Drive to Turtle Ridge

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,353 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.10	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-18.33	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-22.29	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.5	62.7	56.7	65.3	65.9
Medium Trucks:	59.1	58.5	52.1	50.6	59.0	59.3
Heavy Trucks:	59.6	59.0	49.9	51.2	59.5	59.7
Vehicle Noise:	67.3	66.4	63.3	58.5	67.1	67.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	222	478
CNEL:	51	111	239	514

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Bonita Canyon Drive  
 Road Segment: SR-73 NB Off-Ramp to Newport Coast Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,353 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.10	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-18.33	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-22.29	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.5	62.7	56.7	65.3	65.9
Medium Trucks:	59.1	58.5	52.1	50.6	59.0	59.3
Heavy Trucks:	59.6	59.0	49.9	51.2	59.5	59.7
Vehicle Noise:	67.3	66.4	63.3	58.5	67.1	67.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	222	478
CNEL:	51	111	239	514

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Bosque  
 Road Segment: Cadence to Great Park Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,700 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	635 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-2.16	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-19.40	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-23.35	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.2	59.2	57.4	51.3	60.0	60.6
Medium Trucks:	54.7	54.1	47.7	46.2	54.6	54.8
Heavy Trucks:	57.2	56.6	47.6	48.8	57.2	57.3
Vehicle Noise:	62.7	61.9	58.2	54.0	62.6	63.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	26	56	120
CNEL:	13	27	59	128

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Bosque  
 Road Segment: Irvine Boulevard to Benchmark (LN Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 297 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-5.46	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-22.70	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-26.66	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	56.9	55.9	54.1	48.0	56.7	57.3	
Medium Trucks:	51.4	50.8	44.4	42.9	51.3	51.5	
Heavy Trucks:	53.9	53.3	44.3	45.5	53.9	54.0	
Vehicle Noise:	59.4	58.6	54.9	50.7	59.3	59.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	16	33	72
CNEL:	8	17	36	77

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Bosque  
 Road Segment: Benchmark to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,600 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	297 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-5.46	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-22.70	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-26.66	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.9	55.9	54.1	48.0	56.7	57.3
Medium Trucks:	51.4	50.8	44.4	42.9	51.3	51.5
Heavy Trucks:	53.9	53.3	44.3	45.5	53.9	54.0
Vehicle Noise:	59.4	58.6	54.9	50.7	59.3	59.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	16	33	72
CNEL:	8	17	36	77

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Bosque  
 Road Segment: Great Park Boulevard to Beacon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 0 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-41.03	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-58.26	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-62.22	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	21.4	20.3	18.5	12.5	21.1	21.7
Medium Trucks:	15.9	15.2	8.8	7.3	15.8	16.0
Heavy Trucks:	18.3	17.7	8.7	10.0	18.3	18.4
Vehicle Noise:	23.9	23.0	19.4	15.2	23.7	24.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	0
CNEL:	0	0	0	0

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Bosque  
 Road Segment: Beacon to S 5th Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	0 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-41.03	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-58.26	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-62.22	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	21.4	20.3	18.5	12.5	21.1	21.7
Medium Trucks:	15.9	15.2	8.8	7.3	15.8	16.0
Heavy Trucks:	18.3	17.7	8.7	10.0	18.3	18.4
Vehicle Noise:	23.9	23.0	19.4	15.2	23.7	24.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	0
CNEL:	0	0	0	0

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Bryan Avenue  
 Road Segment: Jamboree Road to Market Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,700 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,708 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.82	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.5	63.8	57.7	66.3	66.9
Medium Trucks:	60.3	59.7	53.3	51.8	60.2	60.5
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	68.4	67.5	64.4	59.7	68.2	68.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	221	476
CNEL:	51	110	237	511



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Bryan Avenue  
 Road Segment: Market Place to El Camino Real

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,708 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.82	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.6	65.5	63.8	57.7	66.3	66.9	
Medium Trucks:	60.3	59.7	53.3	51.8	60.2	60.5	
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3	
Vehicle Noise:	68.4	67.5	64.4	59.7	68.2	68.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	221	476
CNEL:	51	110	237	511

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Bryan Avenue  
 Road Segment: Rubicon to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,700 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,708 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.82	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.5	63.8	57.7	66.3	66.9
Medium Trucks:	60.3	59.7	53.3	51.8	60.2	60.5
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	68.4	67.5	64.4	59.7	68.2	68.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	221	476
CNEL:	51	110	237	511

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Bryan Avenue  
 Road Segment: El Camino Real to Rubicon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,708 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.82	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.6	65.5	63.8	57.7	66.3	66.9	
Medium Trucks:	60.3	59.7	53.3	51.8	60.2	60.5	
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3	
Vehicle Noise:	68.4	67.5	64.4	59.7	68.2	68.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	221	476
CNEL:	51	110	237	511

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Bryan Avenue  
 Road Segment: Eastwood to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,600 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 875 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.73	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.7	62.6	60.9	54.8	63.4	64.0
Medium Trucks:	57.4	56.8	50.4	48.9	57.3	57.6
Heavy Trucks:	58.3	57.7	48.7	49.9	58.3	58.4
Vehicle Noise:	65.5	64.6	61.5	56.8	65.3	65.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	66	142	305
CNEL:	33	70	152	327

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Bryan Avenue  
 Road Segment: Westwood to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 982 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.03	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.27	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.23	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.2	63.1	61.4	55.3	63.9	64.5	
Medium Trucks:	57.9	57.3	50.9	49.4	57.8	58.1	
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9	
Vehicle Noise:	66.0	65.1	62.0	57.3	65.8	66.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	329
CNEL:	35	76	164	353

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Bryan Avenue  
 Road Segment: Culver Drive to Westwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	11,900 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	982 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.03	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.27	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.23	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.1	61.4	55.3	63.9	64.5
Medium Trucks:	57.9	57.3	50.9	49.4	57.8	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.0	65.1	62.0	57.3	65.8	66.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	329
CNEL:	35	76	164	353

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Bryan Avenue  
 Road Segment: Yale Avenue to Eastwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,600 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 875 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.73	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.7	62.6	60.9	54.8	63.4	64.0
Medium Trucks:	57.4	56.8	50.4	48.9	57.3	57.6
Heavy Trucks:	58.3	57.7	48.7	49.9	58.3	58.4
Vehicle Noise:	65.5	64.6	61.5	56.8	65.3	65.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	66	142	305
CNEL:	33	70	152	327

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Cadence  
 Road Segment: Pusan to Chinon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 454 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.87	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-22.11	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-26.07	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.3	61.2	59.4	53.4	62.0	62.6
Medium Trucks:	56.3	55.6	49.2	47.7	56.1	56.4
Heavy Trucks:	57.6	57.0	47.9	49.2	57.5	57.7
Vehicle Noise:	64.3	63.4	60.1	55.6	64.1	64.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	15	33	70	152
CNEL:	16	35	75	162



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Cadence  
 Road Segment: Bosque to Pusan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,100 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	586 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.76	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-21.00	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-24.96	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.4	62.3	60.6	54.5	63.1	63.7
Medium Trucks:	57.4	56.7	50.3	48.8	57.2	57.5
Heavy Trucks:	58.7	58.1	49.0	50.3	58.7	58.8
Vehicle Noise:	65.4	64.5	61.2	56.7	65.2	65.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	83	180
CNEL:	19	41	89	192

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Cadence  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 289 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-6.83	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-24.07	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-28.03	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.3	59.2	57.5	51.4	60.0	60.7	
Medium Trucks:	54.3	53.6	47.3	45.7	54.2	54.4	
Heavy Trucks:	55.6	55.0	46.0	47.2	55.6	55.7	
Vehicle Noise:	62.3	61.4	58.1	53.6	62.1	62.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	112
CNEL:	12	26	56	120

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Cadence  
 Road Segment: Chinon to Merit

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 289 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-6.83	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-24.07	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-28.03	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.3	59.2	57.5	51.4	60.0	60.7
Medium Trucks:	54.3	53.6	47.3	45.7	54.2	54.4
Heavy Trucks:	55.6	55.0	46.0	47.2	55.6	55.7
Vehicle Noise:	62.3	61.4	58.1	53.6	62.1	62.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	112
CNEL:	12	26	56	120

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Cadence  
 Road Segment: Merit to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	0 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-42.27	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-59.51	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-63.47	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	24.9	23.8	22.0	16.0	24.6	25.2	
Medium Trucks:	18.9	18.2	11.8	10.3	18.7	19.0	
Heavy Trucks:	20.2	19.6	10.5	11.8	20.1	20.3	
Vehicle Noise:	26.9	26.0	22.7	18.2	26.7	27.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	0
CNEL:	0	0	0	1

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: California Avenue  
 Road Segment: University Drive to Academy Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 825 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.51	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.47	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.0	60.9	59.2	53.1	61.7	62.3
Medium Trucks:	56.0	55.3	48.9	47.4	55.8	56.1
Heavy Trucks:	57.3	56.7	47.7	48.9	57.3	57.4
Vehicle Noise:	64.0	63.1	59.8	55.3	63.8	64.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	112	242
CNEL:	26	56	120	259

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: California Avenue  
 Road Segment: Campus Drive to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 644 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.35	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.59	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.55	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.9	59.8	58.1	52.0	60.6	61.3	
Medium Trucks:	54.9	54.2	47.9	46.3	54.8	55.0	
Heavy Trucks:	56.2	55.6	46.6	47.8	56.2	56.3	
Vehicle Noise:	62.9	62.0	58.7	54.2	62.7	63.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	44	95	205
CNEL:	22	47	102	219

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: California Avenue  
 Road Segment: Theory to Bison Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,600 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	627 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.47	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.71	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.66	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.8	59.7	58.0	51.9	60.5	61.1
Medium Trucks:	54.8	54.1	47.7	46.2	54.7	54.9
Heavy Trucks:	56.1	55.5	46.5	47.7	56.1	56.2
Vehicle Noise:	62.8	61.9	58.6	54.1	62.6	63.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	43	93	201
CNEL:	22	46	100	216

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Campus Drive  
 Road Segment: Carlson Avenue to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,403 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.94	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-18.18	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-22.13	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.0	67.9	66.1	60.1	68.7	69.3	
Medium Trucks:	62.5	61.9	55.5	54.0	62.4	62.7	
Heavy Trucks:	63.0	62.4	53.3	54.6	62.9	63.1	
Vehicle Noise:	70.7	69.8	66.7	61.9	70.5	70.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	249	537
CNEL:	58	124	268	577



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Campus Drive  
 Road Segment: University Drive to Bridge Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,832 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.02	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.97	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	67.1	65.3	59.3	67.9	68.5	
Medium Trucks:	61.7	61.1	54.7	53.2	61.6	61.9	
Heavy Trucks:	62.2	61.6	52.5	53.8	62.1	62.3	
Vehicle Noise:	69.9	69.0	65.9	61.1	69.7	70.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	128	276	595
CNEL:	64	138	296	639

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Campus Drive  
 Road Segment: Jamboree Road to Carlson Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,403 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
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### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.94	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.18	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.13	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	66.0	64.2	58.1	66.8	67.4
Medium Trucks:	60.6	59.9	53.6	52.0	60.5	60.7
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1
Vehicle Noise:	68.7	67.8	64.8	60.0	68.5	69.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	107	231	498
CNEL:	53	115	248	535

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Campus Drive  
 Road Segment: Stanford Court to Berkeley Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,832 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.02	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.97	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	67.1	65.3	59.3	67.9	68.5	
Medium Trucks:	61.7	61.1	54.7	53.2	61.6	61.9	
Heavy Trucks:	62.2	61.6	52.5	53.8	62.1	62.3	
Vehicle Noise:	69.9	69.0	65.9	61.1	69.7	70.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	128	276	595
CNEL:	64	138	296	639

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Campus Drive  
 Road Segment: California Avenue to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 16,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,361 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.07	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.31	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.26	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.9	65.8	64.1	58.0	66.6	67.2	
Medium Trucks:	60.5	59.8	53.4	51.9	60.3	60.6	
Heavy Trucks:	60.9	60.3	51.2	52.5	60.9	61.0	
Vehicle Noise:	68.6	67.7	64.6	59.8	68.4	68.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	105	226	488
CNEL:	52	113	243	524

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Campus Drive  
 Road Segment: Berkeley Avenue to Cornell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,500 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,361 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.07	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.31	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.26	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.9	65.8	64.1	58.0	66.6	67.2
Medium Trucks:	60.5	59.8	53.4	51.9	60.3	60.6
Heavy Trucks:	60.9	60.3	51.2	52.5	60.9	61.0
Vehicle Noise:	68.6	67.7	64.6	59.8	68.4	68.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	105	226	488
CNEL:	52	113	243	524

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Campus Drive  
 Road Segment: Martin to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,100 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 998 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.42	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.61	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.5	64.5	62.7	56.7	65.3	65.9
Medium Trucks:	59.1	58.4	52.1	50.5	59.0	59.2
Heavy Trucks:	59.5	58.9	49.9	51.1	59.5	59.6
Vehicle Noise:	67.2	66.3	63.3	58.5	67.0	67.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	85	184	397
CNEL:	43	92	198	426

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Project Name: Irvine GP  
 Road Name: Campus Drive Job Number: 15937  
 Road Segment: Culver Drive to Paseo Montoya (Turtle Rock Drive)

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,100 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,246 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.45	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.69	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.65	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.4	63.7	57.6	66.2	66.8
Medium Trucks:	60.1	59.4	53.0	51.5	60.0	60.2
Heavy Trucks:	60.5	59.9	50.9	52.1	60.5	60.6
Vehicle Noise:	68.2	67.3	64.2	59.5	68.0	68.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	99	213	460
CNEL:	49	106	229	494

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Campus Drive  
 Road Segment: Von Karman Avenue to Teller Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	10,300 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	850 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.12	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-20.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-24.31	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.8	63.8	62.0	56.0	64.6	65.2
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.5	65.6	62.6	57.8	66.3	66.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	165	356
CNEL:	38	82	178	383



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Campus Drive  
 Road Segment: MacArthur Boulevard to Martin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 998 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.42	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.61	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.5	64.5	62.7	56.7	65.3	65.9
Medium Trucks:	59.1	58.4	52.1	50.5	59.0	59.2
Heavy Trucks:	59.5	58.9	49.9	51.1	59.5	59.6
Vehicle Noise:	67.2	66.3	63.3	58.5	67.0	67.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	85	184	397
CNEL:	43	92	198	426

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Campus Drive  
 Road Segment: Teller Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 850 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
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FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.12	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-20.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-24.31	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.8	63.8	62.0	56.0	64.6	65.2	
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5	
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9	
Vehicle Noise:	66.5	65.6	62.6	57.8	66.3	66.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	165	356
CNEL:	38	82	178	383

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Carlson Avenue  
 Road Segment: Michelson Drive to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 495 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
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	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
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FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.46	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.70	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.66	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.5	61.4	59.7	53.6	62.2	62.8	
Medium Trucks:	56.1	55.4	49.0	47.5	55.9	56.2	
Heavy Trucks:	56.5	55.9	46.9	48.1	56.5	56.6	
Vehicle Noise:	64.2	63.3	60.2	55.4	64.0	64.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	115	249
CNEL:	27	58	124	267

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Chinon  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 223 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-5.92	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-23.16	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-27.11	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.4	52.4	50.6	44.6	53.2	53.8
Medium Trucks:	48.3	47.6	41.3	39.7	48.2	48.4
Heavy Trucks:	51.5	50.9	41.9	43.1	51.5	51.6
Vehicle Noise:	56.3	55.5	51.6	47.7	56.2	56.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	10	21	45
CNEL:	5	10	22	48

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Creek Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,900 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	322 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-4.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-21.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-25.52	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.2	51.1	49.3	43.3	51.9	52.5
Medium Trucks:	47.0	46.3	40.0	38.4	46.9	47.1
Heavy Trucks:	50.2	49.6	40.6	41.8	50.2	50.3
Vehicle Noise:	55.0	54.2	50.3	46.4	54.9	55.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	13	29	61
CNEL:	7	14	30	65

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 53,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,447 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.66	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.58	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.54	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.5	70.5	68.7	62.7	71.3	71.9	
Medium Trucks:	64.9	64.3	57.9	56.4	64.8	65.0	
Heavy Trucks:	65.0	64.4	55.3	56.6	64.9	65.1	
Vehicle Noise:	73.1	72.2	69.2	64.4	72.9	73.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	131	283	610	1,315
CNEL:	141	305	656	1,414

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 53,900 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,447 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.66	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.58	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.54	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.5	68.7	62.7	71.3	71.9
Medium Trucks:	64.9	64.3	57.9	56.4	64.8	65.0
Heavy Trucks:	65.0	64.4	55.3	56.6	64.9	65.1
Vehicle Noise:	73.1	72.2	69.2	64.4	72.9	73.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	131	283	610	1,315
CNEL:	141	305	656	1,414

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 57,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,736 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.93	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.31	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.26	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.8	70.8	69.0	62.9	71.6	72.2
Medium Trucks:	65.2	64.5	58.2	56.6	65.1	65.3
Heavy Trucks:	65.2	64.6	55.6	56.9	65.2	65.3
Vehicle Noise:	73.4	72.5	69.5	64.6	73.2	73.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	137	295	636	1,371
CNEL:	147	318	685	1,475



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Scottsdale Drive to I-5 SB Off- Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 57,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,736 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.93	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.31	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.26	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.8	70.8	69.0	62.9	71.6	72.2
Medium Trucks:	65.2	64.5	58.2	56.6	65.1	65.3
Heavy Trucks:	65.2	64.6	55.6	56.9	65.2	65.3
Vehicle Noise:	73.4	72.5	69.5	64.6	73.2	73.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	137	295	636	1,371
CNEL:	147	318	685	1,475

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: I-405 NB Off-Ramp to San Leandro

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 53,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,447 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.66	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.58	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.54	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.5	70.5	68.7	62.7	71.3	71.9	
Medium Trucks:	64.9	64.3	57.9	56.4	64.8	65.0	
Heavy Trucks:	65.0	64.4	55.3	56.6	64.9	65.1	
Vehicle Noise:	73.1	72.2	69.2	64.4	72.9	73.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	131	283	610	1,315
CNEL:	141	305	656	1,414

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: San Leandro to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 51,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,249 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.46	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.78	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.73	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.3	70.3	68.5	62.5	71.1	71.7	
Medium Trucks:	64.7	64.1	57.7	56.2	64.6	64.8	
Heavy Trucks:	64.8	64.2	55.1	56.4	64.7	64.9	
Vehicle Noise:	72.9	72.0	69.0	64.2	72.7	73.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	128	275	592	1,275
CNEL:	137	296	637	1,372

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Harvard Avenue to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,300 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,820 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.00	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.24	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.20	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.9	69.8	68.1	62.0	70.6	71.2	
Medium Trucks:	64.3	63.6	57.2	55.7	64.2	64.4	
Heavy Trucks:	64.3	63.7	54.7	55.9	64.3	64.4	
Vehicle Noise:	72.5	71.5	68.6	63.7	72.3	72.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	119	256	551	1,188
CNEL:	128	275	593	1,278

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Trabuco Road to Farwell Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 57,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,736 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.93	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.31	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.26	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.2	71.2	69.4	63.3	72.0	72.6	
Medium Trucks:	65.6	64.9	58.6	57.0	65.5	65.7	
Heavy Trucks:	65.6	65.1	56.0	57.3	65.6	65.8	
Vehicle Noise:	73.8	72.9	69.9	65.0	73.6	74.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	139	300	645	1,390
CNEL:	150	322	694	1,496

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,600 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,927 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.12	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.08	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.0	69.9	68.2	62.1	70.7	71.3
Medium Trucks:	64.4	63.7	57.4	55.8	64.3	64.5
Heavy Trucks:	64.4	63.8	54.8	56.1	64.4	64.5
Vehicle Noise:	72.6	71.7	68.7	63.8	72.4	72.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	261	562	1,210
CNEL:	130	280	604	1,302

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Main Street to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,828 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.01	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.23	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.19	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.9	69.8	68.1	62.0	70.6	71.2
Medium Trucks:	64.3	63.6	57.2	55.7	64.2	64.4
Heavy Trucks:	64.3	63.7	54.7	55.9	64.3	64.4
Vehicle Noise:	72.5	71.5	68.6	63.7	72.3	72.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	119	256	552	1,190
CNEL:	128	276	594	1,280

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Warner Avenue to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,754 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.92	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.32	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.27	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.8	69.7	68.0	61.9	70.5	71.1	
Medium Trucks:	64.2	63.5	57.2	55.6	64.1	64.3	
Heavy Trucks:	64.2	63.6	54.6	55.9	64.2	64.3	
Vehicle Noise:	72.4	71.5	68.5	63.6	72.2	72.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	117	253	545	1,174
CNEL:	126	272	586	1,263



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Walnut Avenue to Scottsdale Dive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,696 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.85	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.38	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.34	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.7	69.7	67.9	61.9	70.5	71.1	
Medium Trucks:	64.1	63.5	57.1	55.5	64.0	64.2	
Heavy Trucks:	64.2	63.6	54.5	55.8	64.1	64.3	
Vehicle Noise:	72.3	71.4	68.4	63.6	72.1	72.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	116	250	539	1,162
CNEL:	125	269	580	1,250

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,700 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,688 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.85	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.39	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.35	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.7	67.9	61.8	70.5	71.1
Medium Trucks:	64.1	63.4	57.1	55.5	64.0	64.2
Heavy Trucks:	64.1	63.6	54.5	55.8	64.1	64.3
Vehicle Noise:	72.3	71.4	68.4	63.6	72.1	72.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	116	250	539	1,160
CNEL:	125	269	579	1,248

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Shady Canyon Drive to Palo Verde

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,100 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,906 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.22	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.5	68.4	66.7	60.6	69.3	69.9
Medium Trucks:	62.9	62.2	55.9	54.3	62.8	63.0
Heavy Trucks:	62.9	62.3	53.3	54.6	62.9	63.0
Vehicle Noise:	71.1	70.2	67.2	62.3	70.9	71.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	72	154	333	716
CNEL:	77	166	358	771

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Deerfield Avenue to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 41,700 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,440 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.54	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.69	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.65	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	69.4	67.6	61.5	70.2	70.8
Medium Trucks:	63.8	63.1	56.8	55.2	63.7	63.9
Heavy Trucks:	63.8	63.3	54.2	55.5	63.8	64.0
Vehicle Noise:	72.0	71.1	68.1	63.2	71.8	72.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	111	239	514	1,108
CNEL:	119	257	553	1,192

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Sandburg Way to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 38,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,135 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.14	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.10	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.05	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.0	69.0	67.2	61.1	69.8	70.4	
Medium Trucks:	63.4	62.7	56.4	54.8	63.3	63.5	
Heavy Trucks:	63.4	62.9	53.8	55.1	63.4	63.6	
Vehicle Noise:	71.6	70.7	67.7	62.8	71.4	71.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	104	224	483	1,041
CNEL:	112	241	520	1,120

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,600 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,267 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.32	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.92	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.88	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.2	69.1	67.4	61.3	69.9	70.5	
Medium Trucks:	63.6	62.9	56.6	55.0	63.5	63.7	
Heavy Trucks:	63.6	63.0	54.0	55.3	63.6	63.7	
Vehicle Noise:	71.8	70.9	67.9	63.0	71.6	72.1	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	107	231	497	1,070
CNEL:	115	248	534	1,151

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Palo Verde to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,906 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.22	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.5	68.4	66.7	60.6	69.3	69.9	
Medium Trucks:	62.9	62.2	55.9	54.3	62.8	63.0	
Heavy Trucks:	62.9	62.3	53.3	54.6	62.9	63.0	
Vehicle Noise:	71.1	70.2	67.2	62.3	70.9	71.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	72	154	333	716
CNEL:	77	166	358	771

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: University Drive to Sandburg Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,900 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,879 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.77	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.47	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.42	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.8	60.8	69.4	70.0
Medium Trucks:	63.0	62.4	56.0	54.5	62.9	63.2
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	71.2	70.3	67.4	62.5	71.0	71.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	212	457	984
CNEL:	106	228	491	1,058



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Farwell Avenue to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 43,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,564 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.70	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.54	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.50	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.0	69.9	68.2	62.1	70.7	71.3	
Medium Trucks:	64.4	63.7	57.3	55.8	64.3	64.5	
Heavy Trucks:	64.4	63.8	54.8	56.0	64.4	64.5	
Vehicle Noise:	72.6	71.6	68.7	63.8	72.4	72.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	248	534	1,150
CNEL:	124	267	574	1,238

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Campus Drive to High School

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,962 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.89	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.35	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.30	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	66.9	60.9	69.5	70.1
Medium Trucks:	63.2	62.5	56.1	54.6	63.0	63.3
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3
Vehicle Noise:	71.4	70.4	67.5	62.6	71.2	71.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	465	1,003
CNEL:	108	232	501	1,079

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: High School to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,962 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.89	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.35	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.30	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.8	68.7	66.9	60.9	69.5	70.1	
Medium Trucks:	63.2	62.5	56.1	54.6	63.0	63.3	
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3	
Vehicle Noise:	71.4	70.4	67.5	62.6	71.2	71.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	465	1,003
CNEL:	108	232	501	1,079

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Bryan Avenue to Florence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 34,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,846 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
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	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.72	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.52	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.47	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.6	68.5	66.8	60.7	69.3	69.9	
Medium Trucks:	63.0	62.3	56.0	54.4	62.9	63.1	
Heavy Trucks:	63.0	62.4	53.4	54.7	63.0	63.1	
Vehicle Noise:	71.2	70.3	67.3	62.4	71.0	71.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	210	453	976
CNEL:	105	226	488	1,050

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Portola Parkway to Settlers

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,100 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,081 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.68	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	66.0	64.2	58.2	66.8	67.4
Medium Trucks:	60.4	59.8	53.4	51.9	60.3	60.6
Heavy Trucks:	60.5	59.9	50.8	52.1	60.5	60.6
Vehicle Noise:	68.6	67.7	64.7	59.9	68.4	68.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	106	228	491
CNEL:	53	114	245	528

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Florence to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,600 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,772 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.61	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.63	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.59	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.5	68.4	66.7	60.6	69.2	69.8	
Medium Trucks:	62.9	62.2	55.8	54.3	62.8	63.0	
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0	
Vehicle Noise:	71.1	70.1	67.2	62.3	70.9	71.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	96	207	445	959
CNEL:	103	222	479	1,032

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Irvine Boulevard to Viewpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,500 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,021 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.23	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.00	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.96	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.1	65.3	59.2	67.9	68.5
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6
Heavy Trucks:	61.5	61.0	51.9	53.2	61.5	61.6
Vehicle Noise:	69.7	68.8	65.8	60.9	69.5	70.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	167	361	777
CNEL:	84	180	388	836

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Viewpark to Meadowood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,500 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,021 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.23	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.00	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.96	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.1	67.1	65.3	59.2	67.9	68.5	
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6	
Heavy Trucks:	61.5	61.0	51.9	53.2	61.5	61.6	
Vehicle Noise:	69.7	68.8	65.8	60.9	69.5	70.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	167	361	777
CNEL:	84	180	388	836



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Settlers to Furrow

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	0 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-43.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-60.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-64.85	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	25.9	24.8	23.0	17.0	25.6	26.2
Medium Trucks:	19.3	18.6	12.2	10.7	19.2	19.4
Heavy Trucks:	19.3	18.7	9.7	10.9	19.3	19.4
Vehicle Noise:	27.5	26.5	23.6	18.7	27.3	27.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	1
CNEL:	0	0	0	1

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Culver Drive  
 Road Segment: Meadowood to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 16,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,378 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.43	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-18.67	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-22.62	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.4	63.6	57.6	66.2	66.8
Medium Trucks:	59.8	59.2	52.8	51.3	59.7	60.0
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0
Vehicle Noise:	68.0	67.1	64.1	59.3	67.8	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	279	602
CNEL:	65	140	301	648

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Discovery Drive  
 Road Segment: Irvine Center Drive to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 140 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-9.97	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-27.21	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-31.16	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	54.3	53.2	51.5	45.4	54.0	54.6	
Medium Trucks:	48.3	47.6	41.2	39.7	48.2	48.4	
Heavy Trucks:	49.6	49.0	40.0	41.2	49.6	49.7	
Vehicle Noise:	56.3	55.4	52.1	47.6	56.1	56.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	16	34	74
CNEL:	8	17	37	79

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Discovery Drive  
 Road Segment: Waterworks Way to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	0 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-42.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-59.51	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-63.47	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	22.0	20.9	19.2	13.1	21.7	22.3
Medium Trucks:	16.0	15.3	8.9	7.4	15.8	16.1
Heavy Trucks:	17.3	16.7	7.7	8.9	17.3	17.4
Vehicle Noise:	24.0	23.1	19.8	15.3	23.8	24.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	1
CNEL:	0	0	0	1

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: East Yale Loop  
 Road Segment: Alton Parkway to Witherspoon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,900 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 899 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 40 mph																					
Near/Far Lane Distance: 48 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 62.5 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 62.5 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 57.786																				
Left View: -90.0 degrees	Medium Trucks: 57.717																				
Right View: 90.0 degrees	Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.90	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.14	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.09	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.4	61.3	59.5	53.5	62.1	62.7
Medium Trucks:	56.3	55.7	49.3	47.8	56.2	56.5
Heavy Trucks:	57.7	57.1	48.0	49.3	57.6	57.8
Vehicle Noise:	64.4	63.5	60.2	55.7	64.2	64.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	55	119	256
CNEL:	27	59	127	274

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: East Yale Loop  
 Road Segment: Osborn Street to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 842 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.38	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.1	61.0	59.2	53.2	61.8	62.4	
Medium Trucks:	56.0	55.4	49.0	47.5	55.9	56.2	
Heavy Trucks:	57.4	56.8	47.7	49.0	57.3	57.5	
Vehicle Noise:	64.1	63.2	59.9	55.4	63.9	64.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	53	114	245
CNEL:	26	57	122	262

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: East Yale Loop  
 Road Segment: Yale Avenue to Springbrook South

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 528 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.41	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.1	59.0	57.2	51.2	59.8	60.4	
Medium Trucks:	54.0	53.4	47.0	45.4	53.9	54.1	
Heavy Trucks:	55.3	54.8	45.7	47.0	55.3	55.4	
Vehicle Noise:	62.1	61.2	57.9	53.3	61.9	62.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	83	180
CNEL:	19	41	89	192

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: East Yale Loop  
 Road Segment: Springbrook North to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 528 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.41	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.1	59.0	57.2	51.2	59.8	60.4	
Medium Trucks:	54.0	53.4	47.0	45.4	53.9	54.1	
Heavy Trucks:	55.3	54.8	45.7	47.0	55.3	55.4	
Vehicle Noise:	62.1	61.2	57.9	53.3	61.9	62.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	83	180
CNEL:	19	41	89	192



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: East Yale Loop  
 Road Segment: Woodspring to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 528 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.41	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.1	59.0	57.2	51.2	59.8	60.4
Medium Trucks:	54.0	53.4	47.0	45.4	53.9	54.1
Heavy Trucks:	55.3	54.8	45.7	47.0	55.3	55.4
Vehicle Noise:	62.1	61.2	57.9	53.3	61.9	62.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	83	180
CNEL:	19	41	89	192

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: East Yale Loop  
 Road Segment: Barranca Parkway to Eastshore

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,400 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	528 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.41	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.1	59.0	57.2	51.2	59.8	60.4
Medium Trucks:	54.0	53.4	47.0	45.4	53.9	54.1
Heavy Trucks:	55.3	54.8	45.7	47.0	55.3	55.4
Vehicle Noise:	62.1	61.2	57.9	53.3	61.9	62.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	83	180
CNEL:	19	41	89	192

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Eastwood  
 Road Segment: Bryan Avenue to Monticello

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,400 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	198 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-7.89	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-25.13	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-29.09	1.83	-1.20	-5.60	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	57.0	56.0	54.2	48.2	56.8	57.4	
Medium Trucks:	51.3	50.6	44.2	42.7	51.2	51.4	
Heavy Trucks:	53.1	52.5	43.5	44.7	53.1	53.2	
Vehicle Noise:	59.3	58.4	55.0	50.6	59.1	59.5	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	15	33	70
CNEL:	8	16	35	75

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Eastwood  
 Road Segment: Columbus to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 157 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-8.91	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-26.15	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-30.10	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	56.0	55.0	53.2	47.1	55.8	56.4	
Medium Trucks:	50.3	49.6	43.2	41.7	50.1	50.4	
Heavy Trucks:	52.1	51.5	42.5	43.7	52.1	52.2	
Vehicle Noise:	58.3	57.4	53.9	49.5	58.1	58.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	13	28	60
CNEL:	6	14	30	64

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: El Camino Real  
 Road Segment: Jamboree Road to Alliance (SR-261 Bridge)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 18,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,526 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.40	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.84	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.80	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.7	63.6	61.8	55.8	64.4	65.0	
Medium Trucks:	58.6	58.0	51.6	50.1	58.5	58.7	
Heavy Trucks:	60.0	59.4	50.3	51.6	59.9	60.1	
Vehicle Noise:	66.7	65.8	62.5	57.9	66.5	66.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	169	364
CNEL:	39	84	181	390

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: El Camino Real North  
 Road Segment: El Camino Real to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 512 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
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	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
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FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.35	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.59	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.55	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	59.9	58.9	57.1	51.0	59.7	60.3	
Medium Trucks:	53.9	53.2	46.9	45.3	53.8	54.0	
Heavy Trucks:	55.2	54.6	45.6	46.8	55.2	55.3	
Vehicle Noise:	61.9	61.0	57.7	53.2	61.7	62.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	38	82	176
CNEL:	19	41	87	188

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Fairbanks  
 Road Segment: Alton Parkway to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 215 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-8.13	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-25.36	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-29.32	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	59.0	58.0	56.2	50.1	58.8	59.4	
Medium Trucks:	53.0	52.3	46.0	44.4	52.9	53.1	
Heavy Trucks:	54.3	53.7	44.7	45.9	54.3	54.4	
Vehicle Noise:	61.0	60.1	56.9	52.3	60.8	61.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	20	43	92
CNEL:	10	21	46	98

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Fairbanks  
 Road Segment: Irvine Boulevard to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 0 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-42.27	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-59.51	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-63.47	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	24.9	23.8	22.0	16.0	24.6	25.2
Medium Trucks:	18.9	18.2	11.8	10.3	18.7	19.0
Heavy Trucks:	20.2	19.6	10.5	11.8	20.1	20.3
Vehicle Noise:	26.9	26.0	22.7	18.2	26.7	27.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	0
CNEL:	0	0	0	1



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Fairchild Road  
 Road Segment: MacArthur Boulevard to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,000 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	495 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-5.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-22.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-26.20	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.2	60.1	58.4	52.3	60.9	61.6
Medium Trucks:	55.0	54.3	47.9	46.4	54.8	55.1
Heavy Trucks:	55.8	55.2	46.2	47.4	55.8	55.9
Vehicle Noise:	63.0	62.1	59.0	54.3	62.9	63.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	45	97	209
CNEL:	22	48	104	224

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Gateway Boulevard  
 Road Segment: Alton Parkway to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 314 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-5.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-22.47	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-26.42	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.3	53.2	51.4	45.4	54.0	54.6
Medium Trucks:	48.8	48.1	41.7	40.2	48.7	48.9
Heavy Trucks:	51.3	50.7	41.6	42.9	51.2	51.4
Vehicle Noise:	56.8	55.9	52.3	48.1	56.6	57.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	80
CNEL:	9	18	40	85

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Project Name: Irvine GP  
 Road Name: Gateway Boulevard Job Number: 15937  
 Road Segment: Spectrum Center Drive (Fortune Drive) to Alton Parkway

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 6,600 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 545 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-2.83	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-20.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-24.02	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.7	55.6	53.8	47.8	56.4	57.0
Medium Trucks:	51.2	50.5	44.1	42.6	51.1	51.3
Heavy Trucks:	53.7	53.1	44.0	45.3	53.6	53.8
Vehicle Noise:	59.2	58.3	54.7	50.5	59.0	59.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	25	54	116
CNEL:	12	27	57	123

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Gateway Boulevard  
 Road Segment: Irvine Center Drive to Meridian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,600 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	297 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-5.46	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-22.70	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-26.66	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.0	53.0	51.2	45.2	53.8	54.4
Medium Trucks:	48.5	47.9	41.5	40.0	48.4	48.7
Heavy Trucks:	51.0	50.4	41.4	42.6	51.0	51.1
Vehicle Noise:	56.5	55.7	52.0	47.9	56.4	56.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	36	77
CNEL:	8	18	38	82

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Great Park Boulevard  
 Road Segment: Sand Canyon to Ridge Valley

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 18,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,485 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.69	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.93	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.89	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.6	67.5	65.7	59.7	68.3	68.9	
Medium Trucks:	62.1	61.5	55.1	53.6	62.0	62.3	
Heavy Trucks:	62.5	62.0	52.9	54.2	62.5	62.7	
Vehicle Noise:	70.3	69.3	66.3	61.5	70.1	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	281	606
CNEL:	65	140	302	651

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Great Park Boulevard  
 Road Segment: Ridge Valley (O Street) to Bosque (LY Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 446 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.92	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-23.16	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-27.11	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.0	61.0	59.2	53.2	61.8	62.4	
Medium Trucks:	55.6	54.9	48.6	47.0	55.5	55.7	
Heavy Trucks:	56.0	55.4	46.4	47.6	56.0	56.1	
Vehicle Noise:	63.7	62.8	59.8	55.0	63.5	64.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	232
CNEL:	25	54	116	249

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Great Park Boulevard (EB)  
 Road Segment: Bosque to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	0 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-43.24	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-60.48	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-64.44	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	27.6	26.5	24.8	18.7	27.3	27.9
Medium Trucks:	21.2	20.5	14.1	12.6	21.1	21.3
Heavy Trucks:	21.6	21.0	12.0	13.2	21.6	21.7
Vehicle Noise:	29.3	28.4	25.3	20.5	29.1	29.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	1
CNEL:	0	0	0	1

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Great Park Boulevard (WB)  
 Road Segment: Bosque to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	0 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-43.24	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-60.48	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-64.44	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	27.6	26.5	24.8	18.7	27.3	27.9
Medium Trucks:	21.2	20.5	14.1	12.6	21.1	21.3
Heavy Trucks:	21.6	21.0	12.0	13.2	21.6	21.7
Vehicle Noise:	29.3	28.4	25.3	20.5	29.1	29.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	1
CNEL:	0	0	0	1



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: University Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,568 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.00	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-17.24	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-21.19	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.1	68.0	66.3	60.2	68.8	69.4	
Medium Trucks:	62.9	62.2	55.8	54.3	62.7	63.0	
Heavy Trucks:	63.7	63.1	54.1	55.3	63.7	63.8	
Vehicle Noise:	70.9	70.0	66.9	62.2	70.7	71.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	91	195	420
CNEL:	45	97	209	451

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: Michelson Drive to Coronado

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,046 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.16	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.08	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.04	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.3	64.5	58.5	67.1	67.7
Medium Trucks:	61.1	60.5	54.1	52.6	61.0	61.2
Heavy Trucks:	62.0	61.4	52.3	53.6	62.0	62.1
Vehicle Noise:	69.2	68.3	65.2	60.5	69.0	69.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	249	537
CNEL:	58	124	268	576

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: San Marino to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,021 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.09	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.3	64.5	58.4	67.1	67.7
Medium Trucks:	61.1	60.4	54.0	52.5	61.0	61.2
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	69.2	68.2	65.1	60.4	69.0	69.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	115	247	533
CNEL:	57	123	265	572

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: Coronado to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,980 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.22	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.18	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.2	64.4	58.3	67.0	67.6
Medium Trucks:	61.0	60.3	54.0	52.4	60.9	61.1
Heavy Trucks:	61.8	61.2	52.2	53.5	61.8	61.9
Vehicle Noise:	69.1	68.2	65.0	60.3	68.9	69.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	113	244	526
CNEL:	56	121	262	564

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: San Carlo to San Marino

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,500 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,021 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.09	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.3	64.5	58.4	67.1	67.7
Medium Trucks:	61.1	60.4	54.0	52.5	61.0	61.2
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	69.2	68.2	65.1	60.4	69.0	69.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	115	247	533
CNEL:	57	123	265	572

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: Main Street to San Carlo

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,980 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.22	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.18	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.2	66.2	64.4	58.3	67.0	67.6	
Medium Trucks:	61.0	60.3	54.0	52.4	60.9	61.1	
Heavy Trucks:	61.8	61.2	52.2	53.5	61.8	61.9	
Vehicle Noise:	69.1	68.2	65.0	60.3	68.9	69.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	113	244	526
CNEL:	56	121	262	564

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: Alton Parkway to San Leon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,650 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.01	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.97	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.4	63.6	57.6	66.2	66.8
Medium Trucks:	60.2	59.5	53.2	51.6	60.1	60.3
Heavy Trucks:	61.0	60.4	51.4	52.7	61.0	61.1
Vehicle Noise:	68.3	67.4	64.2	59.5	68.1	68.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	100	216	466
CNEL:	50	108	232	499

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: San Juan to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,650 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.01	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.97	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.4	63.6	57.6	66.2	66.8
Medium Trucks:	60.2	59.5	53.2	51.6	60.1	60.3
Heavy Trucks:	61.0	60.4	51.4	52.7	61.0	61.1
Vehicle Noise:	68.3	67.4	64.2	59.5	68.1	68.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	100	216	466
CNEL:	50	108	232	499



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: San Leon to San Juan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,584 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.05	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.19	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.15	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.3	65.2	63.4	57.4	66.0	66.6	
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1	
Heavy Trucks:	60.9	60.3	51.2	52.5	60.8	61.0	
Vehicle Noise:	68.1	67.2	64.0	59.4	67.9	68.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	98	210	453
CNEL:	49	105	226	486

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	10,000 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	825 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		57.786		
Left View:	-90.0 degrees	Medium Trucks:		57.717		
Right View:	90.0 degrees	Heavy Trucks:		57.787		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.79	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.02	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.98	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.4	62.4	60.6	54.5	63.2	63.8
Medium Trucks:	57.2	56.5	50.2	48.6	57.1	57.3
Heavy Trucks:	58.0	57.4	48.4	49.7	58.0	58.1
Vehicle Noise:	65.3	64.4	61.2	56.5	65.1	65.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	136	293
CNEL:	31	68	146	315

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: Deerfield Avenue to Poplar Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	10,000 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	825 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet	Grade Adjustment: 0.0				
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		57.786		
Left View:	-90.0 degrees	Medium Trucks:		57.717		
Right View:	90.0 degrees	Heavy Trucks:		57.787		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.79	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.02	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.98	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.4	62.4	60.6	54.5	63.2	63.8
Medium Trucks:	57.2	56.5	50.2	48.6	57.1	57.3
Heavy Trucks:	58.0	57.4	48.4	49.7	58.0	58.1
Vehicle Noise:	65.3	64.4	61.2	56.5	65.1	65.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	136	293
CNEL:	31	68	146	315

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,300 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,345 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.86	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.5	64.5	62.7	56.7	65.3	65.9	
Medium Trucks:	59.3	58.6	52.3	50.7	59.2	59.4	
Heavy Trucks:	60.1	59.6	50.5	51.8	60.1	60.3	
Vehicle Noise:	67.4	66.5	63.3	58.6	67.2	67.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	88	189	406
CNEL:	44	94	202	436

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: Bridge Road to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,221 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.08	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.32	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.28	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.1	64.1	62.3	56.2	64.9	65.5	
Medium Trucks:	58.9	58.2	51.9	50.3	58.8	59.0	
Heavy Trucks:	59.7	59.1	50.1	51.4	59.7	59.8	
Vehicle Noise:	67.0	66.1	62.9	58.2	66.8	67.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	177	381
CNEL:	41	88	190	409

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: Paseo Westpark to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,400 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 941 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.46	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.41	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.0	62.9	61.2	55.1	63.7	64.3	
Medium Trucks:	57.8	57.1	50.7	49.2	57.6	57.9	
Heavy Trucks:	58.6	58.0	49.0	50.2	58.6	58.7	
Vehicle Noise:	65.8	64.9	61.8	57.1	65.6	66.1	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	149	320
CNEL:	34	74	159	343

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: Poplar Street to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 710 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.44	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	79.45	-20.68	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	84.25	-24.64	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.7	63.7	61.9	55.8	64.5	65.1	
Medium Trucks:	58.5	57.8	51.5	49.9	58.4	58.6	
Heavy Trucks:	59.3	58.7	49.7	51.0	59.3	59.4	
Vehicle Noise:	66.6	65.7	62.5	57.8	66.4	66.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	62	133	286
CNEL:	31	66	143	307

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: California Avenue to Berkeley Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 941 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.46	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.41	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.0	62.9	61.2	55.1	63.7	64.3	
Medium Trucks:	57.8	57.1	50.7	49.2	57.6	57.9	
Heavy Trucks:	58.6	58.0	49.0	50.2	58.6	58.7	
Vehicle Noise:	65.8	64.9	61.8	57.1	65.6	66.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	149	320
CNEL:	34	74	159	343



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: Culver Drive to California Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	11,400 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	941 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		57.786		
Left View:	-90.0 degrees	Medium Trucks:		57.717		
Right View:	90.0 degrees	Heavy Trucks:		57.787		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.46	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.41	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.0	62.9	61.2	55.1	63.7	64.3
Medium Trucks:	57.8	57.1	50.7	49.2	57.6	57.9
Heavy Trucks:	58.6	58.0	49.0	50.2	58.6	58.7
Vehicle Noise:	65.8	64.9	61.8	57.1	65.6	66.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	149	320
CNEL:	34	74	159	343

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: Berkeley to Bridge Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 941 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.46	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.41	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.0	62.9	61.2	55.1	63.7	64.3	
Medium Trucks:	57.8	57.1	50.7	49.2	57.6	57.9	
Heavy Trucks:	58.6	58.0	49.0	50.2	58.6	58.7	
Vehicle Noise:	65.8	64.9	61.8	57.1	65.6	66.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	149	320
CNEL:	34	74	159	343

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Harvard Avenue  
 Road Segment: Warner Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	11,000 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	908 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		57.786		
Left View:	-90.0 degrees	Medium Trucks:		57.717		
Right View:	90.0 degrees	Heavy Trucks:		57.787		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.61	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.57	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.8	62.8	61.0	55.0	63.6	64.2
Medium Trucks:	57.6	56.9	50.6	49.0	57.5	57.7
Heavy Trucks:	58.4	57.9	48.8	50.1	58.4	58.5
Vehicle Noise:	65.7	64.8	61.6	56.9	65.5	65.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	145	313
CNEL:	34	72	156	335

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Hicks Canyon Drive  
 Road Segment: Delamesa to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 182 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-8.27	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	75.75	-25.51	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	81.57	-29.46	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.7	54.7	52.9	46.9	55.5	56.1
Medium Trucks:	50.0	49.3	42.9	41.4	49.8	50.1
Heavy Trucks:	51.8	51.2	42.2	43.4	51.8	51.9
Vehicle Noise:	58.0	57.1	53.6	49.3	57.8	58.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	36	77
CNEL:	8	18	38	82

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Hornet (5th St)  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 0 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-40.23	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-57.47	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-61.43	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	19.1	18.1	16.3	10.3	18.9	19.5	
Medium Trucks:	14.0	13.3	6.9	5.4	13.9	14.1	
Heavy Trucks:	17.2	16.6	7.6	8.8	17.2	17.3	
Vehicle Noise:	22.0	21.2	17.3	13.4	21.9	22.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	0
CNEL:	0	0	0	0

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Hubble  
 Road Segment: Irvine Center Drive to Bunsen

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,100 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	173 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-7.01	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-24.25	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-28.21	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.4	51.3	49.5	43.5	52.1	52.7
Medium Trucks:	47.2	46.5	40.2	38.6	47.1	47.3
Heavy Trucks:	50.4	49.8	40.8	42.0	50.4	50.5
Vehicle Noise:	55.2	54.4	50.5	46.6	55.1	55.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	8	18	38
CNEL:	4	9	19	40

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: SR-133 NB Off- Ramp to Ridge Valley (O Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 40,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,308 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.37	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.86	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.82	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.3	69.2	67.4	61.4	70.0	70.6	
Medium Trucks:	63.6	63.0	56.6	55.1	63.5	63.8	
Heavy Trucks:	63.7	63.1	54.1	55.3	63.7	63.8	
Vehicle Noise:	71.8	70.9	68.0	63.1	71.6	72.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	108	233	501	1,079
CNEL:	116	250	539	1,161

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: SR-133 SB Off-Ramp to SR-133 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,226 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.26	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.97	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.93	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.1	69.1	67.3	61.3	69.9	70.5	
Medium Trucks:	63.5	62.9	56.5	55.0	63.4	63.7	
Heavy Trucks:	63.6	63.0	53.9	55.2	63.6	63.7	
Vehicle Noise:	71.7	70.8	67.8	63.0	71.5	72.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	229	493	1,061
CNEL:	114	246	530	1,142



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Sand Canyon to SR-133 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 43,500 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,589 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.73	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.51	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.47	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.0	70.0	68.2	62.1	70.8	71.4	
Medium Trucks:	64.4	63.7	57.4	55.8	64.3	64.5	
Heavy Trucks:	64.4	63.9	54.8	56.1	64.4	64.6	
Vehicle Noise:	72.6	71.7	68.7	63.8	72.4	72.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	116	249	536	1,156
CNEL:	124	268	577	1,243

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Merit to Alton

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,100 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,813 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.57	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.52	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.6	68.5	66.7	60.7	69.3	69.9	
Medium Trucks:	62.9	62.3	55.9	54.4	62.8	63.1	
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1	
Vehicle Noise:	71.1	70.2	67.2	62.4	70.9	71.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	209	450	969
CNEL:	104	225	484	1,042

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Journey to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 34,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,822 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.68	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.56	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.51	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.6	68.5	66.7	60.7	69.3	69.9	
Medium Trucks:	63.0	62.3	55.9	54.4	62.8	63.1	
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1	
Vehicle Noise:	71.1	70.2	67.3	62.4	70.9	71.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	209	451	971
CNEL:	104	225	485	1,044

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Ridge Valley (O Street) to Bosque (LY Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,700 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,533 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.02	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.98	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.1	68.0	66.3	60.2	68.8	69.4	
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6	
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6	
Vehicle Noise:	70.7	69.7	66.8	61.9	70.5	70.9	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	195	419	903
CNEL:	97	209	451	972

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Pusan Way to Chinon (B Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,600 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,442 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.05	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.18	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.14	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.9	66.1	60.1	68.7	69.3
Medium Trucks:	62.3	61.7	55.3	53.7	62.2	62.4
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5
Vehicle Noise:	70.5	69.6	66.6	61.8	70.3	70.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	190	409	882
CNEL:	95	204	440	948

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Palo Lado to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,236 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.57	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.52	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.7	59.7	68.3	68.9
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.1
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	70.1	69.2	66.3	61.4	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	179	386	831
CNEL:	89	193	415	894

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Culver Drive to Palo Lado

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,261 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.72	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.52	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.47	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	68.9
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.0	61.4	52.4	53.7	62.0	62.1
Vehicle Noise:	70.2	69.3	66.3	61.4	70.0	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	180	389	837
CNEL:	90	194	418	901

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: SR-261 SB Off-Ramp to SR-261 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,700 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,285 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.77	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.47	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.43	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.0	61.4	55.0	53.5	61.9	62.2
Heavy Trucks:	62.1	61.5	52.4	53.7	62.1	62.2
Vehicle Noise:	70.2	69.3	66.3	61.5	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	182	391	843
CNEL:	91	195	421	907



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Old Myford Road to Market Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,186 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.57	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.66	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.62	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.4	65.6	59.6	68.2	68.8	
Medium Trucks:	61.8	61.2	54.8	53.3	61.7	62.0	
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0	
Vehicle Noise:	70.0	69.1	66.2	61.3	69.8	70.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	176	380	819
CNEL:	88	190	409	881

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Bosque (LY Street) to Modjeska

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,900 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,302 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.80	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.44	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.40	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.9	59.8	68.4	69.0
Medium Trucks:	62.1	61.4	55.0	53.5	62.0	62.2
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	70.3	69.3	66.4	61.5	70.1	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	183	393	847
CNEL:	91	196	423	912

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Jamboree Road to Old Myford Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,186 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.57	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.66	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.62	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.6	59.6	68.2	68.8
Medium Trucks:	61.8	61.2	54.8	53.3	61.7	62.0
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	70.0	69.1	66.2	61.3	69.8	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	176	380	819
CNEL:	88	190	409	881

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Market Place to SR-261 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,400 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,178 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.56	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.68	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.64	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.4	65.6	59.6	68.2	68.8	
Medium Trucks:	61.8	61.2	54.8	53.3	61.7	61.9	
Heavy Trucks:	61.9	61.3	52.2	53.5	61.8	62.0	
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	176	379	817
CNEL:	88	189	408	879

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Jeffrey Road to Groveland

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,335 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.86	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.38	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.33	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.1	61.5	55.1	53.6	62.0	62.2
Heavy Trucks:	62.2	61.6	52.5	53.8	62.1	62.3
Vehicle Noise:	70.3	69.4	66.4	61.6	70.1	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	184	397	856
CNEL:	92	198	427	920

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Bake Parkway to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,964 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.11	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.13	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.09	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.0	66.9	65.2	59.1	67.7	68.3	
Medium Trucks:	61.4	60.7	54.3	52.8	61.3	61.5	
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5	
Vehicle Noise:	69.6	68.6	65.7	60.8	69.4	69.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	164	354	762
CNEL:	82	177	381	820

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Project Name: Irvine GP  
 Road Name: Irvine Boulevard Job Number: 15937  
 Road Segment: Independence Way (The Groves)/The Groves to Jeffrey Road

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,000 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,145 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.49	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.75	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.70	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	61.8	61.1	54.7	53.2	61.6	61.9
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	70.0	69.0	66.1	61.2	69.8	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	375	809
CNEL:	87	187	404	870

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Chinon (B Street) to Merit

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,153 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.51	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.73	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.69	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	61.8	61.1	54.7	53.2	61.7	61.9
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	70.0	69.0	66.1	61.2	69.8	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	175	376	811
CNEL:	87	188	405	872



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: SR-261 NB Off-Ramp to Central Park

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,300 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,087 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.37	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.87	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.82	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.2	65.4	59.4	68.0	68.6
Medium Trucks:	61.6	61.0	54.6	53.1	61.5	61.8
Heavy Trucks:	61.7	61.1	52.1	53.3	61.7	61.8
Vehicle Noise:	69.8	68.9	66.0	61.1	69.6	70.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	171	369	794
CNEL:	85	184	396	854

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing Project Name: Irvine GP  
 Road Name: Irvine Boulevard Job Number: 15937  
 Road Segment: Pueblo Norte to Independence Way (The Groves)/ Parkwood

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,300 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,005 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.20	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.04	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.00	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.3	59.2	67.8	68.4
Medium Trucks:	61.5	60.8	54.4	52.9	61.4	61.6
Heavy Trucks:	61.5	60.9	51.9	53.1	61.5	61.6
Vehicle Noise:	69.7	68.7	65.8	60.9	69.5	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	167	359	773
CNEL:	83	179	386	831

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Yale Avenue to Pueblo Norte

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,300 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,005 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.20	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.04	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.00	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.3	59.2	67.8	68.4
Medium Trucks:	61.5	60.8	54.4	52.9	61.4	61.6
Heavy Trucks:	61.5	60.9	51.9	53.1	61.5	61.6
Vehicle Noise:	69.7	68.7	65.8	60.9	69.5	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	167	359	773
CNEL:	83	179	386	831

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Modjeska to Pusan Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,046 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.29	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.95	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.91	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	67.1	65.3	59.3	67.9	68.5	
Medium Trucks:	61.6	60.9	54.5	53.0	61.4	61.7	
Heavy Trucks:	61.6	61.0	52.0	53.2	61.6	61.7	
Vehicle Noise:	69.7	68.8	65.9	61.0	69.5	70.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	169	364	783
CNEL:	84	182	391	843

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Central Park Avenue to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,100 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,823 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.45	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.41	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.6	64.8	58.8	67.4	68.0
Medium Trucks:	61.1	60.4	54.0	52.5	60.9	61.2
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2
Vehicle Noise:	69.2	68.3	65.4	60.5	69.0	69.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	156	337	726
CNEL:	78	168	362	781

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Parker to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,601 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.78	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-18.02	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.97	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.0	64.3	58.2	66.8	67.4
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	60.5	59.9	50.9	52.2	60.5	60.6
Vehicle Noise:	68.7	67.8	64.8	59.9	68.5	69.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	143	309	665
CNEL:	72	154	332	716

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Boulevard  
 Road Segment: Alton Parkway to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,411 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.33	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-18.57	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-22.52	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.6	65.5	63.7	57.7	66.3	66.9	
Medium Trucks:	59.9	59.3	52.9	51.4	59.8	60.1	
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1	
Vehicle Noise:	68.1	67.2	64.3	59.4	67.9	68.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	284	611
CNEL:	66	142	305	658

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing	Project Name: Irvine GP
Road Name: Irvine Center Drive	Job Number: 15937
Road Segment: Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 38,500 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 3,176 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 50 mph																					
Near/Far Lane Distance: 78 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 80.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 80.0 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 69.914																				
Left View: -90.0 degrees	Medium Trucks: 69.857																				
Right View: 90.0 degrees	Heavy Trucks: 69.914																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.61	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.63	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.58	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.3	66.5	60.4	69.1	69.7
Medium Trucks:	62.9	62.2	55.9	54.3	62.8	63.0
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4
Vehicle Noise:	71.0	70.1	67.1	62.3	70.8	71.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	196	421	908
CNEL:	98	210	453	975



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Orange Tree to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,401 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.39	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.84	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.80	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.7	66.6	64.9	58.8	67.4	68.0	
Medium Trucks:	61.3	60.6	54.2	52.7	61.1	61.4	
Heavy Trucks:	61.7	61.1	52.1	53.3	61.7	61.8	
Vehicle Noise:	69.4	68.5	65.4	60.6	69.2	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	345	743
CNEL:	80	172	370	798

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: I-405 SB Off-Ramp to Research

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,904 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.22	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.02	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.97	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.9	67.9	66.1	60.1	68.7	69.3	
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6	
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0	
Vehicle Noise:	70.6	69.7	66.7	61.9	70.4	70.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	184	397	855
CNEL:	92	198	426	919

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Irvine Valley College to Orange Tree

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,401 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.39	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.84	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.80	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.7	66.6	64.9	58.8	67.4	68.0	
Medium Trucks:	61.3	60.6	54.2	52.7	61.1	61.4	
Heavy Trucks:	61.7	61.1	52.1	53.3	61.7	61.8	
Vehicle Noise:	69.4	68.5	65.4	60.6	69.2	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	345	743
CNEL:	80	172	370	798

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Fontaine Avenue to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,285 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.18	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.06	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.01	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.5	66.4	64.7	58.6	67.2	67.8	
Medium Trucks:	61.1	60.4	54.0	52.5	60.9	61.2	
Heavy Trucks:	61.5	60.9	51.8	53.1	61.4	61.6	
Vehicle Noise:	69.2	68.3	65.2	60.4	69.0	69.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	72	155	334	719
CNEL:	77	166	358	772

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Culver Drive to Deerwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,426 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.44	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.80	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.75	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.7	64.9	58.9	67.5	68.1
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4
Heavy Trucks:	61.7	61.1	52.1	53.4	61.7	61.8
Vehicle Noise:	69.4	68.5	65.5	60.7	69.2	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	347	748
CNEL:	80	173	373	803

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Deerwood to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,368 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.33	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.90	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.86	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.6	64.8	58.8	67.4	68.0
Medium Trucks:	61.2	60.5	54.2	52.6	61.1	61.3
Heavy Trucks:	61.6	61.0	52.0	53.2	61.6	61.7
Vehicle Noise:	69.3	68.4	65.4	60.6	69.1	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	342	736
CNEL:	79	170	367	791

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Yale Avenue to Fontaine Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,100 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,236 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.09	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.15	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.11	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.3	64.6	58.5	67.1	67.7
Medium Trucks:	61.0	60.3	53.9	52.4	60.8	61.1
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5
Vehicle Noise:	69.1	68.2	65.1	60.3	68.9	69.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	153	329	708
CNEL:	76	164	353	761

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Jeffrey Road to Irvine Valley College

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,100 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,401 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.39	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.84	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.80	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.7	66.6	64.9	58.8	67.4	68.0	
Medium Trucks:	61.3	60.6	54.2	52.7	61.1	61.4	
Heavy Trucks:	61.7	61.1	52.1	53.3	61.7	61.8	
Vehicle Noise:	69.4	68.5	65.4	60.6	69.2	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	345	743
CNEL:	80	172	370	798



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Alton Parkway to Spectrum

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,013 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.63	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.61	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.56	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.9	65.9	64.1	58.1	66.7	67.3
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	60.9	60.3	51.3	52.5	60.9	61.0
Vehicle Noise:	68.6	67.7	64.7	59.9	68.4	68.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	142	307	660
CNEL:	71	153	329	710

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Spectrum to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,500 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,021 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.65	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.59	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.55	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	65.9	64.1	58.1	66.7	67.3
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	60.9	60.3	51.3	52.6	60.9	61.0
Vehicle Noise:	68.6	67.7	64.7	59.9	68.5	68.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	143	307	662
CNEL:	71	153	330	711

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Hearthstone to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,145 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
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	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.91	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.33	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.29	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.2	66.1	64.4	58.3	67.0	67.6	
Medium Trucks:	60.8	60.1	53.7	52.2	60.7	60.9	
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3	
Vehicle Noise:	68.9	68.0	64.9	60.2	68.7	69.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	148	320	689
CNEL:	74	159	344	740

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Charter to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,691 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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Autos:	77.5%	12.9%	9.6%	97.42%																	
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	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.13	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.36	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.32	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	65.1	63.4	57.3	65.9	66.5
Medium Trucks:	59.7	59.1	52.7	51.2	59.6	59.9
Heavy Trucks:	60.2	59.6	50.5	51.8	60.1	60.3
Vehicle Noise:	67.9	67.0	63.9	59.1	67.7	68.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	273	588
CNEL:	63	136	293	632

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Jamboree Road to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,426 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.44	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.80	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.75	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.7	64.9	58.9	67.5	68.1
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4
Heavy Trucks:	61.7	61.1	52.1	53.4	61.7	61.8
Vehicle Noise:	69.4	68.5	65.5	60.7	69.2	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	347	748
CNEL:	80	173	373	803

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Pacifica to Entertainment (Enterprise/Fortune)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,500 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,104 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.82	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.42	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.37	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.1	64.3	58.2	66.9	67.5
Medium Trucks:	60.7	60.0	53.7	52.1	60.6	60.8
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2
Vehicle Noise:	68.8	67.9	64.9	60.1	68.6	69.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	147	316	680
CNEL:	73	157	339	731

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,200 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,667 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.19	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.43	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.38	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	65.1	63.3	57.2	65.9	66.5
Medium Trucks:	59.7	59.0	52.6	51.1	59.6	59.8
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2
Vehicle Noise:	67.8	66.9	63.8	59.1	67.6	68.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	270	582
CNEL:	63	135	290	626

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Harvard Avenue to Hearthstone

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,145 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.91	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.33	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.29	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.1	64.4	58.3	67.0	67.6
Medium Trucks:	60.8	60.1	53.7	52.2	60.7	60.9
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	68.9	68.0	64.9	60.2	68.7	69.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	148	320	689
CNEL:	74	159	344	740



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Research to Hubble

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,200 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,584 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.41	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.65	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.61	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.8	63.1	57.0	65.6	66.2
Medium Trucks:	59.5	58.8	52.4	50.9	59.3	59.6
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0
Vehicle Noise:	67.6	66.7	63.6	58.8	67.4	67.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	121	261	563
CNEL:	60	130	281	605

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Barranca Parkway to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,279 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.34	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-18.58	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-22.53	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.0	63.9	62.1	56.1	64.7	65.3	
Medium Trucks:	58.5	57.9	51.5	50.0	58.4	58.6	
Heavy Trucks:	58.9	58.4	49.3	50.6	58.9	59.1	
Vehicle Noise:	66.7	65.7	62.7	57.9	66.5	66.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	105	227	488
CNEL:	52	113	243	524

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Bake Parkway to Muller

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,584 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.41	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.65	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.61	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.9	64.8	63.1	57.0	65.6	66.2	
Medium Trucks:	59.5	58.8	52.4	50.9	59.3	59.6	
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0	
Vehicle Noise:	67.6	66.7	63.6	58.8	67.4	67.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	121	261	563
CNEL:	60	130	281	605

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Discovery to Charter

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,700 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,378 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.02	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-18.26	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-22.21	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.3	64.2	62.5	56.4	65.0	65.6
Medium Trucks:	58.9	58.2	51.8	50.3	58.7	59.0
Heavy Trucks:	59.3	58.7	49.6	50.9	59.3	59.4
Vehicle Noise:	67.0	66.1	63.0	58.2	66.8	67.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	111	238	513
CNEL:	55	119	256	551

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Hubble to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,900 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,559 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.48	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.72	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.67	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.8	64.8	63.0	56.9	65.6	66.2
Medium Trucks:	59.4	58.7	52.4	50.8	59.3	59.5
Heavy Trucks:	59.8	59.2	50.2	51.4	59.8	59.9
Vehicle Noise:	67.5	66.6	63.6	58.8	67.3	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	120	259	557
CNEL:	60	129	278	598

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Muller to Tesla

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,400 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,518 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.60	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.83	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.79	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.7	64.6	62.9	56.8	65.4	66.1	
Medium Trucks:	59.3	58.6	52.2	50.7	59.2	59.4	
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8	
Vehicle Noise:	67.4	66.5	63.4	58.7	67.2	67.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	254	547
CNEL:	59	127	273	588

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Sand Canyon Avenue to Odyssey

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,100 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,493 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.91	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.86	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.6	62.8	56.8	65.4	66.0
Medium Trucks:	59.2	58.5	52.2	50.6	59.1	59.3
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7
Vehicle Noise:	67.3	66.4	63.4	58.6	67.1	67.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	117	251	541
CNEL:	58	125	270	581

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Tesla to Scientific Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,100 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,328 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.18	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-18.41	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-22.37	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.1	62.3	56.2	64.9	65.5
Medium Trucks:	58.7	58.0	51.7	50.1	58.6	58.8
Heavy Trucks:	59.1	58.5	49.5	50.7	59.1	59.2
Vehicle Noise:	66.8	65.9	62.9	58.1	66.6	67.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	108	232	501
CNEL:	54	116	250	538



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Scientific Way to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 16,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,353 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
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Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.10	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-18.33	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-22.29	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.1	62.4	56.3	64.9	65.6
Medium Trucks:	58.8	58.1	51.7	50.2	58.7	58.9
Heavy Trucks:	59.2	58.6	49.6	50.8	59.2	59.3
Vehicle Noise:	66.9	66.0	62.9	58.2	66.7	67.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	109	235	507
CNEL:	54	117	253	544

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Gateway Boulevard to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,213 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.57	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-18.81	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-22.77	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.7	63.7	61.9	55.9	64.5	65.1	
Medium Trucks:	58.3	57.6	51.3	49.7	58.2	58.4	
Heavy Trucks:	58.7	58.1	49.1	50.3	58.7	58.8	
Vehicle Noise:	66.4	65.5	62.5	57.7	66.2	66.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	101	219	471
CNEL:	51	109	235	506

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Laguna Canyon Road to Discovery

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,238 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.48	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-18.72	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-22.68	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.8	63.8	62.0	55.9	64.6	65.2	
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5	
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9	
Vehicle Noise:	66.5	65.6	62.6	57.8	66.3	66.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	222	477
CNEL:	51	111	238	513

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Center Drive  
 Road Segment: Odyssey to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,200 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,254 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.43	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-18.66	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-22.62	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	63.8	62.1	56.0	64.6	65.2
Medium Trucks:	58.4	57.8	51.4	49.9	58.3	58.6
Heavy Trucks:	58.9	58.3	49.2	50.5	58.8	59.0
Vehicle Noise:	66.6	65.7	62.6	57.8	66.4	66.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	104	224	482
CNEL:	52	112	240	518

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Irvine Center Drive (Edinger)  
 Road Segment: Redhill Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,376 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.35	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.89	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.84	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.6	64.8	58.8	67.4	68.0
Medium Trucks:	61.2	60.5	54.2	52.6	61.1	61.3
Heavy Trucks:	61.6	61.1	52.0	53.3	61.6	61.7
Vehicle Noise:	69.4	68.4	65.4	60.6	69.2	69.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	342	738
CNEL:	79	171	368	792

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: I-5 SB Off-Ramp to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 66,500 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,486 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.57	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-12.67	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-16.62	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.5	71.4	69.6	63.6	72.2	72.8
Medium Trucks:	65.8	65.2	58.8	57.3	65.7	66.0
Heavy Trucks:	65.9	65.3	56.3	57.5	65.9	66.0
Vehicle Noise:	74.0	73.1	70.2	65.3	73.8	74.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	151	326	702	1,512
CNEL:	163	350	755	1,627

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 73,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 6,056 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.00	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-12.24	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-16.20	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.3	72.2	70.5	64.4	73.0	73.6
Medium Trucks:	66.7	66.0	59.6	58.1	66.6	66.8
Heavy Trucks:	66.7	66.1	57.1	58.3	66.7	66.8
Vehicle Noise:	74.9	73.9	71.0	66.1	74.7	75.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	164	353	760	1,638
CNEL:	176	380	818	1,762

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Walnut Avenue to Michelle Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 55,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,538 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.75	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.49	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.45	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.6	70.6	68.8	62.7	71.4	72.0
Medium Trucks:	65.0	64.3	58.0	56.4	64.9	65.1
Heavy Trucks:	65.1	64.5	55.4	56.7	65.0	65.2
Vehicle Noise:	73.2	72.3	69.3	64.5	73.0	73.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	133	287	618	1,332
CNEL:	143	309	665	1,433



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: I-405 NB Off-Ramp to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 73,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 6,056 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.00	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.24	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.20	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	74.7	73.6	71.8	65.8	74.4	75.0	
Medium Trucks:	68.1	67.4	61.0	59.5	67.9	68.2	
Heavy Trucks:	68.1	67.5	58.5	59.7	68.1	68.2	
Vehicle Noise:	76.2	75.3	72.4	67.5	76.0	76.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	253	545	1,174	2,530
CNEL:	272	586	1,263	2,722

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Michelle Drive to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 55,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,538 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.75	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.49	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.45	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.6	70.6	68.8	62.7	71.4	72.0
Medium Trucks:	65.0	64.3	58.0	56.4	64.9	65.1
Heavy Trucks:	65.1	64.5	55.4	56.7	65.0	65.2
Vehicle Noise:	73.2	72.3	69.3	64.5	73.0	73.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	133	287	618	1,332
CNEL:	143	309	665	1,433

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Main Street to Kelvin Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 61,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,049 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.21	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.03	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.98	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.9	72.8	71.1	65.0	73.6	74.2
Medium Trucks:	67.3	66.6	60.2	58.7	67.2	67.4
Heavy Trucks:	67.3	66.7	57.7	58.9	67.3	67.4
Vehicle Noise:	75.5	74.5	71.6	66.7	75.3	75.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	224	483	1,040	2,241
CNEL:	241	519	1,119	2,411

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 74,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 6,130 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 130 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
	VehicleType	Day	Evening	Night	Daily																
	Autos:	77.5%	12.9%	9.6%	97.42%																
	Medium Trucks:	84.8%	4.9%	10.3%	1.84%																
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Noise Source Elevations (in feet)</b>																					
<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>Autos:</td> <td>2.000</td> <td></td> </tr> <tr> <td>Medium Trucks:</td> <td>4.000</td> <td></td> </tr> <tr> <td>Heavy Trucks:</td> <td>8.006</td> <td>Grade Adjustment: 0.0</td> </tr> </tbody> </table>	Autos:	2.000		Medium Trucks:	4.000		Heavy Trucks:	8.006	Grade Adjustment: 0.0												
Autos:	2.000																				
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Heavy Trucks:	8.006	Grade Adjustment: 0.0																			
<b>Lane Equivalent Distance (in feet)</b>																					
<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>Autos:</td> <td>88.792</td> </tr> <tr> <td>Medium Trucks:</td> <td>88.747</td> </tr> <tr> <td>Heavy Trucks:</td> <td>88.792</td> </tr> </tbody> </table>	Autos:	88.792	Medium Trucks:	88.747	Heavy Trucks:	88.792															
Autos:	88.792																				
Medium Trucks:	88.747																				
Heavy Trucks:	88.792																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees																					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.05	-3.84	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.19	-3.84	-1.20	-4.96	0.000	0.000
Heavy Trucks:	86.40	-16.14	-3.84	-1.20	-5.14	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.8	70.7	69.0	62.9	71.5	72.1
Medium Trucks:	65.2	64.5	58.1	56.6	65.1	65.3
Heavy Trucks:	65.2	64.6	55.6	56.8	65.2	65.3
Vehicle Noise:	73.4	72.4	69.5	64.6	73.2	73.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	179	385	830	1,788
CNEL:	192	414	893	1,923

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Kelvin Avenue to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 57,500 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,744 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 56.593				
Road Grade: 0.0%	Medium Trucks: 56.522				
Left View: -90.0 degrees	Heavy Trucks: 56.593				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.94	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.30	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.26	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.6	72.5	70.8	64.7	73.3	74.0	
Medium Trucks:	67.0	66.3	60.0	58.4	66.9	67.1	
Heavy Trucks:	67.0	66.4	57.4	58.7	67.0	67.1	
Vehicle Noise:	75.2	74.3	71.3	66.4	75.0	75.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	215	463	998	2,150
CNEL:	231	498	1,074	2,313

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 56,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,678 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.88	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.36	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.32	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.5	72.5	70.7	64.7	73.3	73.9
Medium Trucks:	66.9	66.3	59.9	58.4	66.8	67.1
Heavy Trucks:	67.0	66.4	57.3	58.6	67.0	67.1
Vehicle Noise:	75.1	74.2	71.2	66.4	74.9	75.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	213	459	989	2,130
CNEL:	229	494	1,064	2,291

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Birch Street to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,300 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,325 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.40	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.84	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.80	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.2	67.4	61.4	70.0	70.6
Medium Trucks:	63.7	63.0	56.6	55.1	63.5	63.8
Heavy Trucks:	63.7	63.1	54.1	55.3	63.7	63.8
Vehicle Noise:	71.9	70.9	68.0	63.1	71.7	72.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	108	233	503	1,083
CNEL:	116	251	541	1,165

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Dupont Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,600 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,927 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.12	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.12	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.08	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.4	70.3	68.6	62.5	71.1	71.8
Medium Trucks:	64.8	64.1	57.8	56.2	64.7	64.9
Heavy Trucks:	64.8	64.2	55.2	56.5	64.8	64.9
Vehicle Noise:	73.0	72.1	69.1	64.2	72.8	73.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	264	570	1,227
CNEL:	132	284	613	1,320



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Alton Parkway to Beckman

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 53,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,447 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.66	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.58	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.54	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.3	72.3	70.5	64.4	73.1	73.7	
Medium Trucks:	66.7	66.0	59.7	58.1	66.6	66.8	
Heavy Trucks:	66.7	66.2	57.1	58.4	66.7	66.9	
Vehicle Noise:	74.9	74.0	71.0	66.2	74.7	75.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	206	444	956	2,059
CNEL:	222	477	1,028	2,215

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Fairchild Road to Birch Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 37,500 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,094 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.08	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.16	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.11	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.4	69.3	67.5	61.5	70.1	70.7	
Medium Trucks:	63.8	63.1	56.7	55.2	63.6	63.9	
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9	
Vehicle Noise:	72.0	71.0	68.1	63.2	71.8	72.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	105	226	486	1,047
CNEL:	113	243	523	1,126

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Beckman to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 51,700 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,265 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.48	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.76	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.72	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.1	72.1	70.3	64.3	72.9	73.5
Medium Trucks:	66.5	65.9	59.5	58.0	66.4	66.7
Heavy Trucks:	66.6	66.0	56.9	58.2	66.6	66.7
Vehicle Noise:	74.7	73.8	70.8	66.0	74.5	75.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	200	431	930	2,003
CNEL:	215	464	1,000	2,155

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: I-5 NB Off-Ramp to El Camino Real

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 50,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,142 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.35	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.89	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.85	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.0	72.0	70.2	64.1	72.8	73.4
Medium Trucks:	66.4	65.7	59.4	57.8	66.3	66.5
Heavy Trucks:	66.4	65.9	56.8	58.1	66.4	66.6
Vehicle Noise:	74.6	73.7	70.7	65.8	74.4	74.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	196	423	912	1,964
CNEL:	211	455	981	2,113

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Campus Drive to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,200 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,317 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.38	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.85	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.81	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.6	67.8	61.8	70.4	71.0
Medium Trucks:	64.1	63.4	57.0	55.5	63.9	64.2
Heavy Trucks:	64.1	63.5	54.5	55.7	64.1	64.2
Vehicle Noise:	72.3	71.3	68.4	63.5	72.1	72.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	236	509	1,097
CNEL:	118	254	548	1,180

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: El Camino Real to West Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 50,200 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,142 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 56.593				
Road Grade: 0.0%	Medium Trucks: 56.522				
Left View: -90.0 degrees	Heavy Trucks: 56.593				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.35	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.89	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.85	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.0	72.0	70.2	64.1	72.8	73.4
Medium Trucks:	66.4	65.7	59.4	57.8	66.3	66.5
Heavy Trucks:	66.4	65.9	56.8	58.1	66.4	66.6
Vehicle Noise:	74.6	73.7	70.7	65.8	74.4	74.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	196	423	912	1,964
CNEL:	211	455	981	2,113

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: West Drive to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 50,200 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,142 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 56.593				
Road Grade: 0.0%	Medium Trucks: 56.522				
Left View: -90.0 degrees	Heavy Trucks: 56.593				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.35	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.89	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.85	-0.91	-1.20	-5.16	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.0	72.0	70.2	64.1	72.8	73.4	
Medium Trucks:	66.4	65.7	59.4	57.8	66.3	66.5	
Heavy Trucks:	66.4	65.9	56.8	58.1	66.4	66.6	
Vehicle Noise:	74.6	73.7	70.7	65.8	74.4	74.9	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	196	423	912	1,964
CNEL:	211	455	981	2,113

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Bryan Avenue to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,779 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.95	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-14.29	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-18.24	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.6	71.6	69.8	63.7	72.4	73.0
Medium Trucks:	66.0	65.3	59.0	57.4	65.9	66.1
Heavy Trucks:	66.0	65.5	56.4	57.7	66.0	66.2
Vehicle Noise:	74.2	73.3	70.3	65.4	74.0	74.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	185	398	857	1,847
CNEL:	199	428	922	1,987



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Koll Center to Fairchild Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,900 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,714 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.51	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.72	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.68	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	67.0	60.9	69.5	70.2
Medium Trucks:	63.2	62.5	56.2	54.6	63.1	63.3
Heavy Trucks:	63.2	62.6	53.6	54.9	63.2	63.3
Vehicle Noise:	71.4	70.5	67.5	62.6	71.2	71.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	96	207	445	959
CNEL:	103	222	479	1,032

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: MacArthur Boulevard to Koll Center

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,300 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,830 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.69	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.54	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.50	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	68.9	67.2	61.1	69.7	70.3
Medium Trucks:	63.4	62.7	56.3	54.8	63.3	63.5
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	71.6	70.6	67.7	62.8	71.4	71.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	99	213	458	986
CNEL:	106	229	493	1,061

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Irvine Boulevard to Portola Pakway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,021 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.23	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.00	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.96	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.1	67.1	65.3	59.2	67.9	68.5	
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6	
Heavy Trucks:	61.5	61.0	51.9	53.2	61.5	61.6	
Vehicle Noise:	69.7	68.8	65.8	60.9	69.5	70.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	167	361	777
CNEL:	84	180	388	836

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Warner Avenue to Edinger Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 83,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 6,922 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 96 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.438 Medium Trucks: 42.344 Heavy Trucks: 42.439																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.58	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-11.66	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-15.61	0.96	-1.20	-5.31	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	77.1	76.1	74.3	68.2	76.9	77.5
Medium Trucks:	70.5	69.9	63.5	61.9	70.4	70.6
Heavy Trucks:	70.5	70.0	60.9	62.2	70.5	70.7
Vehicle Noise:	78.7	77.8	74.8	69.9	78.5	79.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	236	509	1,096	2,361
CNEL:	254	547	1,179	2,540

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 68,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,668 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 96 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.438 Medium Trucks: 42.344 Heavy Trucks: 42.439																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.71	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-12.53	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-16.48	0.96	-1.20	-5.31	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.3	75.2	73.4	67.4	76.0	76.6
Medium Trucks:	69.7	69.0	62.6	61.1	69.5	69.8
Heavy Trucks:	69.7	69.1	60.1	61.3	69.7	69.8
Vehicle Noise:	77.8	76.9	74.0	69.1	77.6	78.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	207	445	959	2,066
CNEL:	222	479	1,032	2,223

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jamboree Road  
 Road Segment: Edinger Avenue to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 64,000 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,280 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 96 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 64.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 64.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 42.438				
Road Grade: 0.0%	Medium Trucks: 42.344				
Left View: -90.0 degrees	Heavy Trucks: 42.439				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.40	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-12.83	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-16.79	0.96	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	75.9	74.9	73.1	67.1	75.7	76.3	
Medium Trucks:	69.3	68.7	62.3	60.8	69.2	69.5	
Heavy Trucks:	69.4	68.8	59.7	61.0	69.4	69.5	
Vehicle Noise:	77.5	76.6	73.6	68.8	77.3	77.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	197	425	915	1,971
CNEL:	212	457	984	2,120

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jeffrey Road  
 Road Segment: Walnut Avenue to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 50,500 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,166 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.25	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.99	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.95	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	66.0	59.9	68.5	69.2
Medium Trucks:	62.6	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	70.6	69.7	66.6	61.9	70.5	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	194	418	900
CNEL:	97	208	448	966

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jeffrey Road  
 Road Segment: I-5 NB Off-Ramp to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 57,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,703 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.77	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.47	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.42	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.7	66.9	60.9	69.5	70.1
Medium Trucks:	63.5	62.8	56.5	54.9	63.4	63.6
Heavy Trucks:	64.3	63.8	54.7	56.0	64.3	64.5
Vehicle Noise:	71.6	70.7	67.5	62.8	71.4	71.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	99	213	460	990
CNEL:	106	229	493	1,062



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jeffrey Road  
 Road Segment: Poplar (Meadows) to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,600 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,680 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.49	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.2	65.4	59.4	68.0	68.6	
Medium Trucks:	62.0	61.4	55.0	53.4	61.9	62.1	
Heavy Trucks:	62.9	62.3	53.2	54.5	62.9	63.0	
Vehicle Noise:	70.1	69.2	66.0	61.4	69.9	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	179	385	829
CNEL:	89	192	413	889

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jeffrey Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,200 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,647 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.57	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.53	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.2	65.4	59.3	68.0	68.6
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.8	62.2	53.2	54.5	62.8	62.9
Vehicle Noise:	70.1	69.2	66.0	61.3	69.9	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	382	824
CNEL:	88	190	410	884

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Center Drive to Poplar (Meadows)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 42,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,539 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.54	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.70	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.66	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.1	67.0	65.3	59.2	67.8	68.4	
Medium Trucks:	61.9	61.2	54.8	53.3	61.7	62.0	
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8	
Vehicle Noise:	69.9	69.0	65.9	61.2	69.7	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	375	808
CNEL:	87	187	402	866

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jeffrey Road  
 Road Segment: I-405 NB Off-Ramp to Quail Creek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,663 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.69	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.55	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.51	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.2	65.4	59.4	68.0	68.6
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.8	62.3	53.2	54.5	62.8	63.0
Vehicle Noise:	70.1	69.2	66.0	61.4	69.9	70.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	178	384	826
CNEL:	89	191	411	886

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jeffrey Road  
 Road Segment: Barranca Parkway to Irvine Valley College

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 43,400 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,581 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.59	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.65	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.61	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	67.1	65.3	59.3	67.9	68.5	
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0	
Heavy Trucks:	62.7	62.2	53.1	54.4	62.7	62.9	
Vehicle Noise:	70.0	69.1	65.9	61.3	69.8	70.3	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	175	378	814
CNEL:	87	188	405	873

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jeffrey Road  
 Road Segment: Quail Creek to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,663 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.69	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.55	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.51	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.2	65.4	59.4	68.0	68.6	
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1	
Heavy Trucks:	62.8	62.3	53.2	54.5	62.8	63.0	
Vehicle Noise:	70.1	69.2	66.0	61.4	69.9	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	178	384	826
CNEL:	89	191	411	886

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Valley College to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 42,200 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,482 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.47	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.77	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.73	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	67.0	65.2	59.1	67.8	68.4
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	62.6	62.0	53.0	54.3	62.6	62.7
Vehicle Noise:	69.9	69.0	65.8	61.1	69.7	70.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	172	371	799
CNEL:	86	185	398	857

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jeffrey Road  
 Road Segment: Trabuco Road to Hideaway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 35,700 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,945 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.74	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.50	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.45	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.2	64.5	58.4	67.0	67.6
Medium Trucks:	61.1	60.4	54.0	52.5	60.9	61.2
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	69.1	68.2	65.1	60.4	68.9	69.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	154	332	714
CNEL:	77	165	356	766



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jeffrey Road  
 Road Segment: Hideaway to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,945 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.74	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.50	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.45	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.2	64.5	58.4	67.0	67.6
Medium Trucks:	61.1	60.4	54.0	52.5	60.9	61.2
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	69.1	68.2	65.1	60.4	68.9	69.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	154	332	714
CNEL:	77	165	356	766

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jeffrey Road  
 Road Segment: Roosevelt to Grove

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,069 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.92	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.32	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.28	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.8	65.1	59.0	67.6	68.2
Medium Trucks:	61.6	61.0	54.6	53.1	61.5	61.8
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	69.7	68.8	65.7	61.0	69.5	70.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	346	745
CNEL:	80	172	371	799

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jeffrey Road  
 Road Segment: Grove to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 37,200 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,069 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.92	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.32	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.28	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.8	65.1	59.0	67.6	68.2
Medium Trucks:	61.6	61.0	54.6	53.1	61.5	61.8
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	69.7	68.8	65.7	61.0	69.5	70.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	346	745
CNEL:	80	172	371	799

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jeffrey Road  
 Road Segment: Bryan Avenue to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,186 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.45	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.79	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.75	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.0	64.9	63.2	57.1	65.7	66.4	
Medium Trucks:	59.8	59.1	52.7	51.2	59.6	59.9	
Heavy Trucks:	60.6	60.0	51.0	52.2	60.6	60.7	
Vehicle Noise:	67.8	66.9	63.8	59.1	67.7	68.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	126	272	586
CNEL:	63	135	292	628

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jeffrey Road  
 Road Segment: Encore to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 858 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.62	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-19.85	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-23.81	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	60.9	59.1	53.1	61.7	62.3
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8
Heavy Trucks:	56.5	56.0	46.9	48.2	56.5	56.7
Vehicle Noise:	63.8	62.9	59.7	55.0	63.6	64.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	68	146	314
CNEL:	34	73	156	337

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Boulevard to Encore

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 858 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.62	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-19.85	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-23.81	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	60.9	59.1	53.1	61.7	62.3
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8
Heavy Trucks:	56.5	56.0	46.9	48.2	56.5	56.7
Vehicle Noise:	63.8	62.9	59.7	55.0	63.6	64.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	68	146	314
CNEL:	34	73	156	337

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Jeronimo Road  
 Road Segment: Goodyear to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 635 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.92	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.16	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.12	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.3	61.2	59.5	53.4	62.0	62.6	
Medium Trucks:	56.1	55.4	49.0	47.5	55.9	56.2	
Heavy Trucks:	56.9	56.3	47.3	48.5	56.9	57.0	
Vehicle Noise:	64.1	63.2	60.1	55.4	63.9	64.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	53	114	246
CNEL:	26	57	123	264

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Jeronimo Road  
 Road Segment: Alton Parkway to Goodyear

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,200 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	594 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.41	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.0	60.9	59.2	53.1	61.7	62.3
Medium Trucks:	55.8	55.1	48.7	47.2	55.6	55.9
Heavy Trucks:	56.6	56.0	47.0	48.2	56.6	56.7
Vehicle Noise:	63.8	62.9	59.8	55.1	63.6	64.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	51	109	236
CNEL:	25	54	117	253



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Laguna Canyon Road  
 Road Segment: Old Laguna Canyon Road to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,700 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,688 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.85	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.39	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.35	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.7	67.9	61.8	70.5	71.1
Medium Trucks:	64.1	63.4	57.1	55.5	64.0	64.2
Heavy Trucks:	64.1	63.6	54.5	55.8	64.1	64.3
Vehicle Noise:	72.3	71.4	68.4	63.6	72.1	72.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	116	250	539	1,160
CNEL:	125	269	579	1,248

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Laguna Canyon Road  
 Road Segment: Laguna Canyon Freeway to Quail Hill Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,000 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 825 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-3.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-20.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-24.85	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.8	63.0	57.0	65.6	66.2
Medium Trucks:	59.3	58.6	52.2	50.7	59.2	59.4
Heavy Trucks:	59.3	58.7	49.7	50.9	59.3	59.4
Vehicle Noise:	67.5	66.5	63.6	58.7	67.3	67.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	88	190	410
CNEL:	44	95	205	441

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Laguna Canyon Road  
 Road Segment: Discovery to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 421 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-6.58	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-23.82	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-27.78	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.0	61.9	60.1	54.1	62.7	63.3	
Medium Trucks:	56.3	55.7	49.3	47.8	56.2	56.5	
Heavy Trucks:	56.4	55.8	46.8	48.0	56.4	56.5	
Vehicle Noise:	64.5	63.6	60.6	55.8	64.3	64.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	56	121	262
CNEL:	28	61	131	282

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Laguna Canyon Road  
 Road Segment: I-405 Overcrossing to Pasteur

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 454 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.84	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-23.08	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-27.03	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.1	63.0	61.2	55.2	63.8	64.4	
Medium Trucks:	57.6	57.0	50.6	49.1	57.5	57.8	
Heavy Trucks:	58.1	57.5	48.4	49.7	58.0	58.2	
Vehicle Noise:	65.8	64.8	61.8	57.0	65.6	66.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	55	118	253
CNEL:	27	59	126	272

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Laguna Canyon Road  
 Road Segment: Irvine Center Drive to Discovery

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 322 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-7.75	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-24.99	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-28.94	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.8	60.7	59.0	52.9	61.5	62.1
Medium Trucks:	55.2	54.5	48.1	46.6	55.1	55.3
Heavy Trucks:	55.2	54.6	45.6	46.8	55.2	55.3
Vehicle Noise:	63.4	62.4	59.5	54.6	63.2	63.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	102	219
CNEL:	24	51	109	235

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Laguna Canyon Road  
 Road Segment: Quail Hill Parkway to I-405 Overcrossing

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	5,500 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	454 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	50.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 42.814				
Road Grade:	0.0%	Medium Trucks: 42.720				
Left View:	-90.0 degrees	Heavy Trucks: 42.814				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.84	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-23.08	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-27.03	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.1	63.0	61.2	55.2	63.8	64.4
Medium Trucks:	57.6	57.0	50.6	49.1	57.5	57.8
Heavy Trucks:	58.1	57.5	48.4	49.7	58.0	58.2
Vehicle Noise:	65.8	64.8	61.8	57.0	65.6	66.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	55	118	253
CNEL:	27	59	126	272

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Laguna Canyon Road  
 Road Segment: Pasteur to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,000 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	495 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-5.88	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-23.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-27.07	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.7	62.6	60.8	54.8	63.4	64.0	
Medium Trucks:	57.1	56.4	50.0	48.5	56.9	57.2	
Heavy Trucks:	57.1	56.5	47.5	48.7	57.1	57.2	
Vehicle Noise:	65.2	64.3	61.4	56.5	65.0	65.5	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	135	292
CNEL:	31	68	146	314

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Laguna Canyon Road  
 Road Segment: Waterworks to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 388 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-6.94	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-24.18	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-28.13	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.6	61.5	59.8	53.7	62.3	62.9	
Medium Trucks:	56.0	55.3	49.0	47.4	55.9	56.1	
Heavy Trucks:	56.0	55.4	46.4	47.6	56.0	56.1	
Vehicle Noise:	64.2	63.2	60.3	55.4	64.0	64.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	53	115	248
CNEL:	27	57	124	267



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Laguna Canyon Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	5,100 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	421 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-6.58	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-23.82	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-27.78	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.0	61.9	60.1	54.1	62.7	63.3
Medium Trucks:	56.3	55.7	49.3	47.8	56.2	56.5
Heavy Trucks:	56.4	55.8	46.8	48.0	56.4	56.5
Vehicle Noise:	64.5	63.6	60.6	55.8	64.3	64.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	56	121	262
CNEL:	28	61	131	282

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Laguna Canyon Road  
 Road Segment: Barranca Parkway to Waterworks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 338 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-7.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-24.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-28.72	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.0	60.9	59.2	53.1	61.7	62.3	
Medium Trucks:	55.4	54.7	48.4	46.8	55.3	55.5	
Heavy Trucks:	55.4	54.8	45.8	47.1	55.4	55.5	
Vehicle Noise:	63.6	62.7	59.7	54.8	63.4	63.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	49	105	226
CNEL:	24	52	113	243

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Lake Forest Drive  
 Road Segment: Hidden Canyon to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,196 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.63	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.82	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.3	63.5	57.4	66.1	66.7
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	68.0	67.1	64.1	59.3	67.8	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	96	208	448
CNEL:	48	104	223	481

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Lake Forest Drive  
 Road Segment: Bake Parkway to Hidden Canyon (Romano)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,196 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.63	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.82	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.3	65.3	63.5	57.4	66.1	66.7	
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0	
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4	
Vehicle Noise:	68.0	67.1	64.1	59.3	67.8	68.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	96	208	448
CNEL:	48	104	223	481

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Lake Forest Drive  
 Road Segment: Tesla to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 883 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.95	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-20.19	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-24.14	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.4	62.3	60.5	54.5	63.1	63.7
Medium Trucks:	56.9	56.2	49.9	48.3	56.8	57.0
Heavy Trucks:	57.3	56.8	47.7	49.0	57.3	57.4
Vehicle Noise:	65.1	64.1	61.1	56.3	64.9	65.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	177	381
CNEL:	41	88	190	410

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Lake Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	5,800 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	479 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	50.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 42.814				
Road Grade:	0.0%	Medium Trucks: 42.720				
Left View:	-90.0 degrees	Heavy Trucks: 42.814				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-2.60	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	70.80	-19.84	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	77.97	-23.79	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.8	54.8	53.0	47.0	55.6	56.2
Medium Trucks:	50.7	50.0	43.6	42.1	50.6	50.8
Heavy Trucks:	53.9	53.3	44.3	45.5	53.9	54.0
Vehicle Noise:	58.7	57.9	54.0	50.1	58.6	59.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	40	86
CNEL:	9	20	43	92

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Lynx  
 Road Segment: Irvine Boulevard to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 0 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-40.23	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-57.47	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-61.43	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	19.1	18.1	16.3	10.3	18.9	19.5
Medium Trucks:	14.0	13.3	6.9	5.4	13.9	14.1
Heavy Trucks:	17.2	16.6	7.6	8.8	17.2	17.3
Vehicle Noise:	22.0	21.2	17.3	13.4	21.9	22.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	0
CNEL:	0	0	0	0

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: MacArthur Boulevard  
 Road Segment: I-405 SB Off-Ramp to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 51,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,274 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 60 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.11	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-14.13	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-18.09	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.2	73.2	71.4	65.3	74.0	74.6
Medium Trucks:	67.5	66.8	60.4	58.9	67.3	67.6
Heavy Trucks:	67.1	66.5	57.5	58.8	67.1	67.2
Vehicle Noise:	75.7	74.8	71.9	66.9	75.5	76.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	232	501	1,079	2,324
CNEL:	250	539	1,162	2,503



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: MacArthur Boulevard  
 Road Segment: Main Street to I-405 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 50,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,150 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	2.98	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-14.26	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-18.21	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	74.1	73.0	71.3	65.2	73.8	74.4	
Medium Trucks:	67.3	66.7	60.3	58.7	67.2	67.4	
Heavy Trucks:	67.0	66.4	57.4	58.6	67.0	67.1	
Vehicle Noise:	75.6	74.6	71.8	66.8	75.4	75.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	228	491	1,058	2,279
CNEL:	245	529	1,139	2,454

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: MacArthur Boulevard  
 Road Segment: I-405 NB Off-Ramp and I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 48,200 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,977 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 60 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	2.79	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-14.44	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-18.40	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.9	72.8	71.1	65.0	73.6	74.2
Medium Trucks:	67.1	66.5	60.1	58.6	67.0	67.3
Heavy Trucks:	66.8	66.2	57.2	58.4	66.8	66.9
Vehicle Noise:	75.4	74.5	71.6	66.6	75.2	75.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	221	477	1,028	2,215
CNEL:	239	514	1,107	2,385

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: MacArthur Boulevard  
 Road Segment: Jamboree Road to Fairchild Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,127 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.00	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.24	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.19	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.6	66.5	64.7	58.7	67.3	67.9	
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4	
Heavy Trucks:	62.2	61.6	52.5	53.8	62.1	62.3	
Vehicle Noise:	69.4	68.5	65.3	60.7	69.2	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	345	744
CNEL:	80	172	370	798

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: MacArthur Boulevard  
 Road Segment: Fairchild Road to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,127 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.00	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.24	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.19	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.6	66.5	64.7	58.7	67.3	67.9	
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4	
Heavy Trucks:	62.2	61.6	52.5	53.8	62.1	62.3	
Vehicle Noise:	69.4	68.5	65.3	60.7	69.2	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	345	744
CNEL:	80	172	370	798

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: MacArthur Boulevard  
 Road Segment: Fitch to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 40,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,374 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.33	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.91	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.86	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.2	65.5	59.4	68.0	68.6
Medium Trucks:	62.1	61.4	55.0	53.5	61.9	62.2
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0
Vehicle Noise:	70.1	69.2	66.1	61.4	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	171	368	793
CNEL:	85	183	395	851

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: MacArthur Boulevard  
 Road Segment: Michelson Drive to Douglas

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,200 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,987 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.80	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-14.44	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-18.39	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.1	66.3	60.3	68.9	69.5
Medium Trucks:	62.9	62.2	55.9	54.3	62.8	63.0
Heavy Trucks:	63.7	63.2	54.1	55.4	63.7	63.9
Vehicle Noise:	71.0	70.1	66.9	62.3	70.8	71.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	243	524	1,130
CNEL:	121	261	562	1,212

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: MacArthur Boulevard  
 Road Segment: Douglas to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,200 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,987 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.80	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-14.44	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-18.39	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.1	66.3	60.3	68.9	69.5
Medium Trucks:	62.9	62.2	55.9	54.3	62.8	63.0
Heavy Trucks:	63.7	63.2	54.1	55.4	63.7	63.9
Vehicle Noise:	71.0	70.1	66.9	62.3	70.8	71.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	243	524	1,130
CNEL:	121	261	562	1,212

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: MacArthur Boulevard  
 Road Segment: Skypark to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,459 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.96	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.28	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.24	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.9	65.9	64.1	58.0	66.7	67.3
Medium Trucks:	60.7	60.0	53.7	52.1	60.6	60.8
Heavy Trucks:	61.5	60.9	51.9	53.2	61.5	61.6
Vehicle Noise:	68.8	67.9	64.7	60.0	68.6	69.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	138	298	642
CNEL:	69	148	320	689



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: MacArthur Boulevard  
 Road Segment: Redhill Avenue to Skypark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,153 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.38	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.86	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.81	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.9	63.1	57.1	65.7	66.3
Medium Trucks:	59.7	59.0	52.7	51.1	59.6	59.8
Heavy Trucks:	60.5	60.0	50.9	52.2	60.5	60.6
Vehicle Noise:	67.8	66.9	63.7	59.0	67.6	68.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	269	580
CNEL:	62	134	289	622

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: MacArthur Boulevard  
 Road Segment: Birch Street to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,300 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,510 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.16	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-17.40	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-21.36	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.3	61.6	55.5	64.1	64.7
Medium Trucks:	58.2	57.5	51.1	49.6	58.0	58.3
Heavy Trucks:	59.0	58.4	49.4	50.6	59.0	59.1
Vehicle Noise:	66.2	65.3	62.2	57.5	66.0	66.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	99	212	458
CNEL:	49	106	228	491

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: MacArthur Boulevard  
 Road Segment: Campus Drive to Birch Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,601 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.09	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-17.15	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-21.10	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.4	63.6	57.6	66.2	66.8
Medium Trucks:	60.2	59.5	53.2	51.6	60.1	60.3
Heavy Trucks:	61.0	60.5	51.4	52.7	61.0	61.1
Vehicle Noise:	68.3	67.4	64.2	59.5	68.1	68.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	346	745
CNEL:	80	172	371	799

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Main Street  
 Road Segment: Gillette Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,681 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.33	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.91	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.86	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.2	64.5	58.4	67.0	67.6
Medium Trucks:	61.1	60.4	54.0	52.5	60.9	61.2
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	69.1	68.2	65.1	60.4	68.9	69.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	147	316	681
CNEL:	73	157	339	730

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Main Street  
 Road Segment: MacArthur Boulevard to Mercantile

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,681 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.33	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.91	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.86	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.3	66.2	64.5	58.4	67.0	67.6	
Medium Trucks:	61.1	60.4	54.0	52.5	60.9	61.2	
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0	
Vehicle Noise:	69.1	68.2	65.1	60.4	68.9	69.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	147	316	681
CNEL:	73	157	339	730

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Main Street  
 Road Segment: Executive Park to MacArthur Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,980 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.02	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.22	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.18	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.5	62.7	56.7	65.3	65.9
Medium Trucks:	59.3	58.7	52.3	50.8	59.2	59.4
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3
Vehicle Noise:	67.4	66.5	63.4	58.7	67.2	67.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	254	548
CNEL:	59	127	273	588

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Main Street  
 Road Segment: Von Karman Avenue to Cartwright

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,766 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.52	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.72	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.68	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.0	62.3	56.2	64.8	65.4
Medium Trucks:	58.8	58.2	51.8	50.3	58.7	59.0
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8
Vehicle Noise:	66.9	66.0	62.9	58.2	66.7	67.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	109	236	508
CNEL:	54	117	253	545

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Main Street  
 Road Segment: McDermott to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,300 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,087 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.24	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.99	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.95	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.8	64.7	63.0	56.9	65.5	66.2
Medium Trucks:	59.6	58.9	52.5	51.0	59.4	59.7
Heavy Trucks:	60.4	59.8	50.8	52.0	60.4	60.5
Vehicle Noise:	67.6	66.7	63.6	58.9	67.5	67.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	122	264	568
CNEL:	61	131	283	609



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Main Street  
 Road Segment: Red Hill Avenue to Executive Circle

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,980 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.02	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.22	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.18	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.5	62.7	56.7	65.3	65.9
Medium Trucks:	59.3	58.7	52.3	50.8	59.2	59.4
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3
Vehicle Noise:	67.4	66.5	63.4	58.7	67.2	67.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	254	548
CNEL:	59	127	273	588

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Main Street  
 Road Segment: Jamboree Road to Union

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,865 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.75	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.48	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.44	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.3	64.3	62.5	56.4	65.1	65.7
Medium Trucks:	59.1	58.4	52.0	50.5	59.0	59.2
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0
Vehicle Noise:	67.2	66.2	63.1	58.4	67.0	67.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	113	245	527
CNEL:	57	122	262	565

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Main Street  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,100 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,163 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.53	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.49	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	63.9	62.1	56.0	64.7	65.3
Medium Trucks:	58.7	58.0	51.6	50.1	58.6	58.8
Heavy Trucks:	59.5	58.9	49.9	51.1	59.5	59.6
Vehicle Noise:	66.8	65.8	62.7	58.0	66.6	67.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	171	369
CNEL:	40	85	184	396

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Main Street  
 Road Segment: Siglo to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,766 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.52	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.72	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.68	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.0	62.3	56.2	64.8	65.4
Medium Trucks:	58.8	58.2	51.8	50.3	58.7	59.0
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8
Vehicle Noise:	66.9	66.0	62.9	58.2	66.7	67.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	109	236	508
CNEL:	54	117	253	545

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Main Street  
 Road Segment: Veneto to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,865 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.75	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.48	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.44	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.3	64.3	62.5	56.4	65.1	65.7
Medium Trucks:	59.1	58.4	52.0	50.5	59.0	59.2
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0
Vehicle Noise:	67.2	66.2	63.1	58.4	67.0	67.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	113	245	527
CNEL:	57	122	262	565

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Main Street  
 Road Segment: Paseo Westpark to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,600 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 957 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.34	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.1	63.0	61.2	55.2	63.8	64.4
Medium Trucks:	57.8	57.2	50.8	49.3	57.7	57.9
Heavy Trucks:	58.7	58.1	49.0	50.3	58.7	58.8
Vehicle Noise:	65.9	65.0	61.9	57.2	65.7	66.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	70	150	324
CNEL:	35	75	161	347

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Main Street  
 Road Segment: Harvard Avenue to San Mateo

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,600 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 957 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.34	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.1	63.0	61.2	55.2	63.8	64.4
Medium Trucks:	57.8	57.2	50.8	49.3	57.7	57.9
Heavy Trucks:	58.7	58.1	49.0	50.3	58.7	58.8
Vehicle Noise:	65.9	65.0	61.9	57.2	65.7	66.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	70	150	324
CNEL:	35	75	161	347

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Marine Way  
 Road Segment: Sand Canyon Avenue to Ridge Valley (O Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,188 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 42.814				
Road Grade: 0.0%		Medium Trucks: 42.720				
Left View: -90.0 degrees		Heavy Trucks: 42.814				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.69	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	77.72	-17.93	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	82.99	-21.89	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.5	64.5	62.7	56.6	65.3	65.9
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6
Heavy Trucks:	60.8	60.2	51.2	52.4	60.8	60.9
Vehicle Noise:	67.5	66.6	63.4	58.8	67.3	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	72	155	333
CNEL:	36	77	165	356



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Marine Way  
 Road Segment: Alton Parkway to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	0 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-42.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-59.51	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-63.47	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	22.0	20.9	19.2	13.1	21.7	22.3
Medium Trucks:	16.0	15.3	8.9	7.4	15.8	16.1
Heavy Trucks:	17.3	16.7	7.7	8.9	17.3	17.4
Vehicle Noise:	24.0	23.1	19.8	15.3	23.8	24.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	1
CNEL:	0	0	0	1

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Marine Way  
 Road Segment: Lynx to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 0 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
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### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-42.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-59.51	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-63.47	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	22.0	20.9	19.2	13.1	21.7	22.3
Medium Trucks:	16.0	15.3	8.9	7.4	15.8	16.1
Heavy Trucks:	17.3	16.7	7.7	8.9	17.3	17.4
Vehicle Noise:	24.0	23.1	19.8	15.3	23.8	24.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	1
CNEL:	0	0	0	1

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Marine Way  
 Road Segment: County Access to Treble

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 264 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-7.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-24.46	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-28.42	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	57.0	56.0	54.2	48.2	56.8	57.4	
Medium Trucks:	51.0	50.3	44.0	42.4	50.9	51.1	
Heavy Trucks:	52.3	51.7	42.7	44.0	52.3	52.4	
Vehicle Noise:	59.0	58.2	54.9	50.3	58.9	59.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	113
CNEL:	12	26	56	121

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Marine Way  
 Road Segment: Ridge Valley (O Street) to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 487 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.76	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	59.7	58.6	56.9	50.8	59.4	60.0	
Medium Trucks:	53.7	53.0	46.6	45.1	53.6	53.8	
Heavy Trucks:	55.0	54.4	45.4	46.6	55.0	55.1	
Vehicle Noise:	61.7	60.8	57.5	53.0	61.5	62.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	79	170
CNEL:	18	39	85	182

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Marine Way  
 Road Segment: Skyhawk to County Access

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 264 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-7.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-24.46	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-28.42	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	57.0	56.0	54.2	48.2	56.8	57.4	
Medium Trucks:	51.0	50.3	44.0	42.4	50.9	51.1	
Heavy Trucks:	52.3	51.7	42.7	44.0	52.3	52.4	
Vehicle Noise:	59.0	58.2	54.9	50.3	58.9	59.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	113
CNEL:	12	26	56	121

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Marine Way  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 58 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-13.82	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-31.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-35.02	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	50.4	49.4	47.6	41.6	50.2	50.8	
Medium Trucks:	44.4	43.7	37.4	35.8	44.3	44.5	
Heavy Trucks:	45.7	45.1	36.1	37.4	45.7	45.8	
Vehicle Noise:	52.4	51.6	48.3	43.7	52.3	52.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	19	41
CNEL:	4	9	20	44

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Marine Way  
 Road Segment: Treble to Lynx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	0 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-42.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-59.51	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-63.47	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	22.0	20.9	19.2	13.1	21.7	22.3
Medium Trucks:	16.0	15.3	8.9	7.4	15.8	16.1
Heavy Trucks:	17.3	16.7	7.7	8.9	17.3	17.4
Vehicle Noise:	24.0	23.1	19.8	15.3	23.8	24.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	1
CNEL:	0	0	0	1

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: McGaw Avenue  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,600 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	710 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-2.35	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-19.59	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-23.54	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.7	58.6	56.9	50.8	59.4	60.0
Medium Trucks:	53.9	53.3	46.9	45.3	53.8	54.0
Heavy Trucks:	55.8	55.2	46.2	47.4	55.8	55.9
Vehicle Noise:	61.9	61.0	57.6	53.2	61.8	62.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	38	82	176
CNEL:	19	41	87	188



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: McGaw Avenue  
 Road Segment: Red Hill Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 8,400 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 693 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-2.45	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-19.69	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-23.65	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	59.6	58.5	56.8	50.7	59.3	59.9	
Medium Trucks:	53.8	53.1	46.8	45.2	53.7	53.9	
Heavy Trucks:	55.7	55.1	46.1	47.3	55.7	55.8	
Vehicle Noise:	61.8	60.9	57.5	53.1	61.6	62.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	81	173
CNEL:	19	40	86	185

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: McGaw Avenue  
 Road Segment: Daimler to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 536 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-3.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-20.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-24.76	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	58.5	57.4	55.7	49.6	58.2	58.8	
Medium Trucks:	52.7	52.0	45.7	44.1	52.6	52.8	
Heavy Trucks:	54.6	54.0	44.9	46.2	54.5	54.7	
Vehicle Noise:	60.7	59.8	56.4	52.0	60.5	61.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	15	31	68	146
CNEL:	16	34	72	156

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: McGaw Avenue  
 Road Segment: Jamboree Road to Murphy Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 248 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-6.92	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-24.16	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-28.12	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	55.1	54.1	52.3	46.2	54.9	55.5	
Medium Trucks:	49.3	48.7	42.3	40.8	49.2	49.5	
Heavy Trucks:	51.2	50.6	41.6	42.8	51.2	51.3	
Vehicle Noise:	57.4	56.5	53.0	48.6	57.2	57.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	41	87
CNEL:	9	20	43	93

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Meadowood  
 Road Segment: Culver Drive to Canyonwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 858 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 25 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-0.06	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-17.30	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-21.26	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.4	55.4	53.6	47.5	56.2	56.8
Medium Trucks:	51.3	50.6	44.2	42.7	51.1	51.4
Heavy Trucks:	54.5	53.9	44.8	46.1	54.5	54.6
Vehicle Noise:	59.3	58.5	54.6	50.6	59.1	59.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	25	55	118
CNEL:	13	27	58	125

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Meridian  
 Road Segment: Spectrum to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 182 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-7.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-24.84	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-28.80	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	51.9	50.8	49.1	43.0	51.6	52.2	
Medium Trucks:	46.4	45.7	39.4	37.8	46.3	46.5	
Heavy Trucks:	48.9	48.3	39.3	40.5	48.9	49.0	
Vehicle Noise:	54.4	53.5	49.9	45.7	54.2	54.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	12	26	56
CNEL:	6	13	27	59

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Meridian  
 Road Segment: Alton Parkway to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1,700 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	140 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-8.72	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-25.96	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-29.92	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	50.8	49.7	48.0	41.9	50.5	51.1
Medium Trucks:	45.3	44.6	38.2	36.7	45.2	45.4
Heavy Trucks:	47.8	47.2	38.1	39.4	47.7	47.9
Vehicle Noise:	53.3	52.4	48.8	44.6	53.1	53.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	10	22	47
CNEL:	5	11	23	50

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Merit  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 421 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-3.16	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-20.40	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-24.35	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	56.2	55.1	53.4	47.3	55.9	56.6	
Medium Trucks:	51.1	50.4	44.0	42.5	50.9	51.2	
Heavy Trucks:	54.3	53.7	44.6	45.9	54.2	54.4	
Vehicle Noise:	59.1	58.3	54.3	50.4	58.9	59.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	15	32	69
CNEL:	7	16	34	73

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Michelson Drive  
 Road Segment: Riparian to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,460 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.20	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.03	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.99	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.5	63.4	61.6	55.6	64.2	64.8
Medium Trucks:	58.4	57.8	51.4	49.9	58.3	58.6
Heavy Trucks:	59.8	59.2	50.1	51.4	59.7	59.9
Vehicle Noise:	66.5	65.6	62.3	57.8	66.3	66.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	164	354
CNEL:	38	82	176	379



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Michelson Drive  
 Road Segment: Almond Tree Lane to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,200 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	677 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.14	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-20.38	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-24.33	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.0	62.9	61.2	55.1	63.7	64.4
Medium Trucks:	58.0	57.3	51.0	49.4	57.9	58.1
Heavy Trucks:	59.3	58.7	49.7	50.9	59.3	59.4
Vehicle Noise:	66.0	65.1	61.8	57.3	65.8	66.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	43	92	198
CNEL:	21	46	98	212

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Michelson Drive  
 Road Segment: Von Karman Avenue to Obsidian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,452 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.01	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.4	63.4	61.6	55.6	64.2	64.8	
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5	
Heavy Trucks:	59.7	59.1	50.1	51.4	59.7	59.8	
Vehicle Noise:	66.5	65.6	62.3	57.7	66.3	66.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	164	352
CNEL:	38	81	175	377

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Michelson Drive  
 Road Segment: Parkside to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,279 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.61	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.57	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.9	62.8	61.1	55.0	63.6	64.2
Medium Trucks:	57.9	57.2	50.8	49.3	57.7	58.0
Heavy Trucks:	59.2	58.6	49.6	50.8	59.2	59.3
Vehicle Noise:	65.9	65.0	61.7	57.2	65.7	66.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	70	150	324
CNEL:	35	75	161	347

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Michelson Drive  
 Road Segment: Gillman to Seton/Sandburg Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,200 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	677 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.14	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-20.38	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-24.33	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.0	62.9	61.2	55.1	63.7	64.4
Medium Trucks:	58.0	57.3	51.0	49.4	57.9	58.1
Heavy Trucks:	59.3	58.7	49.7	50.9	59.3	59.4
Vehicle Noise:	66.0	65.1	61.8	57.3	65.8	66.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	43	92	198
CNEL:	21	46	98	212

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Michelson Drive  
 Road Segment: Carlson to Prince

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,700 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,460 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 75.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	70.413			
Road Grade: 0.0%	Medium Trucks:	70.356			
Left View: -90.0 degrees	Heavy Trucks:	70.413			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.20	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	77.72	-17.03	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	82.99	-20.99	-2.33	-1.20	-5.25	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.2	62.1	60.4	54.3	62.9	63.5
Medium Trucks:	57.2	56.5	50.1	48.6	57.0	57.3
Heavy Trucks:	58.5	57.9	48.8	50.1	58.5	58.6
Vehicle Noise:	65.2	64.3	61.0	56.5	65.0	65.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	75	162	348
CNEL:	37	80	173	373

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Michelson Drive  
 Road Segment: MacArthur Boulevard to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,452 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.01	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.4	63.4	61.6	55.6	64.2	64.8	
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5	
Heavy Trucks:	59.7	59.1	50.1	51.4	59.7	59.8	
Vehicle Noise:	66.5	65.6	62.3	57.7	66.3	66.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	164	352
CNEL:	38	81	175	377

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Michelson Drive  
 Road Segment: Harvard Avenue to Parkside

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,500 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,279 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.61	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.57	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.9	62.8	61.1	55.0	63.6	64.2
Medium Trucks:	57.9	57.2	50.8	49.3	57.7	58.0
Heavy Trucks:	59.2	58.6	49.6	50.8	59.2	59.3
Vehicle Noise:	65.9	65.0	61.7	57.2	65.7	66.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	70	150	324
CNEL:	35	75	161	347

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Michelson Drive  
 Road Segment: Bixby to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 957 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
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### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.63	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.82	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.6	61.6	59.8	53.8	62.4	63.0
Medium Trucks:	56.6	55.9	49.6	48.0	56.5	56.7
Heavy Trucks:	57.9	57.3	48.3	49.6	57.9	58.0
Vehicle Noise:	64.6	63.7	60.5	55.9	64.5	64.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	57	124	267
CNEL:	29	62	133	286



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Michelson Drive  
 Road Segment: Jamboree Road to Carlson

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,460 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.20	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.03	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.99	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.8	64.7	62.9	56.9	65.5	66.1	
Medium Trucks:	59.7	59.1	52.7	51.2	59.6	59.9	
Heavy Trucks:	61.1	60.5	51.4	52.7	61.0	61.2	
Vehicle Noise:	67.8	66.9	63.6	59.1	67.6	68.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	89	192	415
CNEL:	44	96	206	444

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Michelson Drive  
 Road Segment: Teller to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,700 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,708 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 47.329				
Road Grade: 0.0%	Medium Trucks: 47.244				
Left View: -90.0 degrees	Heavy Trucks: 47.329				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.88	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.35	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.31	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.4	63.6	57.6	66.2	66.8
Medium Trucks:	60.4	59.8	53.4	51.8	60.3	60.5
Heavy Trucks:	61.7	61.2	52.1	53.4	61.7	61.8
Vehicle Noise:	68.5	67.6	64.3	59.7	68.3	68.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	99	214	460
CNEL:	49	106	229	493

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Michelson Drive  
 Road Segment: Jordan East to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,200 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	512 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	30.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	30.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 29.547				
Road Grade:	0.0%	Medium Trucks: 29.411				
Left View:	-90.0 degrees	Heavy Trucks: 29.547				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.35	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	77.72	-21.59	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	82.99	-25.55	3.32	-1.20	-5.77	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.2	61.5	55.4	64.0	64.6
Medium Trucks:	58.3	57.6	51.2	49.7	58.2	58.4
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7
Vehicle Noise:	66.3	65.4	62.1	57.6	66.1	66.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	36	77	165
CNEL:	18	38	82	177

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Michelson Drive  
 Road Segment: Culver Drive to Angell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 677 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 16 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 39.306 Medium Trucks: 39.205 Heavy Trucks: 39.307																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.14	1.46	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-20.38	1.48	-1.20	-5.08	0.000	0.000
Heavy Trucks:	82.99	-24.33	1.46	-1.20	-5.56	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.6	62.6	60.8	54.8	63.4	64.0	
Medium Trucks:	57.6	56.9	50.6	49.0	57.5	57.7	
Heavy Trucks:	58.9	58.3	49.3	50.6	58.9	59.0	
Vehicle Noise:	65.6	64.8	61.5	56.9	65.5	65.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	43	93	199
CNEL:	21	46	99	213

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Modjeska (A Street)  
 Road Segment: Portola Springs to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 891 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 24 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 27.659 Medium Trucks: 27.514 Heavy Trucks: 27.659																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.45	3.75	-1.20	-4.81	0.000	0.000
Medium Trucks:	79.45	-19.69	3.79	-1.20	-5.14	0.000	0.000
Heavy Trucks:	84.25	-23.65	3.75	-1.20	-5.77	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.6	67.5	65.7	59.7	68.3	68.9	
Medium Trucks:	62.3	61.7	55.3	53.8	62.2	62.5	
Heavy Trucks:	63.2	62.6	53.5	54.8	63.1	63.3	
Vehicle Noise:	70.4	69.5	66.3	61.7	70.2	70.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	144	310
CNEL:	33	72	154	332

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Modjeska (A Street)  
 Road Segment: South of Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,000 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	165 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-9.78	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-27.01	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-30.97	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.3	58.3	56.5	50.4	59.1	59.7
Medium Trucks:	53.1	52.4	46.1	44.5	53.0	53.2
Heavy Trucks:	53.9	53.3	44.3	45.5	53.9	54.0
Vehicle Noise:	61.2	60.2	57.1	52.4	61.0	61.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	20	43	94
CNEL:	10	22	47	100

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Muirlands Boulevard  
 Road Segment: Bake Parkway to City Limits

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,007 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.92	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.16	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.12	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.2	61.5	55.4	64.0	64.6
Medium Trucks:	58.0	57.4	51.0	49.5	57.9	58.2
Heavy Trucks:	58.9	58.3	49.3	50.5	58.9	59.0
Vehicle Noise:	66.1	65.2	62.1	57.4	65.9	66.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	72	155	335
CNEL:	36	77	167	359

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Muirlands Boulevard  
 Road Segment: Alton Parkway to Sterling

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	11,400 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	941 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.46	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.41	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.0	62.9	61.2	55.1	63.7	64.3
Medium Trucks:	57.8	57.1	50.7	49.2	57.6	57.9
Heavy Trucks:	58.6	58.0	49.0	50.2	58.6	58.7
Vehicle Noise:	65.8	64.9	61.8	57.1	65.6	66.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	149	320
CNEL:	34	74	159	343



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Muirlands Boulevard  
 Road Segment: Wrigley to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 941 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.46	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.41	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.0	62.9	61.2	55.1	63.7	64.3
Medium Trucks:	57.8	57.1	50.7	49.2	57.6	57.9
Heavy Trucks:	58.6	58.0	49.0	50.2	58.6	58.7
Vehicle Noise:	65.8	64.9	61.8	57.1	65.6	66.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	149	320
CNEL:	34	74	159	343

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Newport Coast Drive  
 Road Segment: SR-73 NB Off-Ramp to Turtle Ridge

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,500 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,196 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.86	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.6	62.5	60.8	54.7	63.3	63.9	
Medium Trucks:	57.6	56.9	50.5	49.0	57.5	57.7	
Heavy Trucks:	58.9	58.3	49.3	50.5	58.9	59.0	
Vehicle Noise:	65.6	64.7	61.4	56.9	65.4	65.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	144	310
CNEL:	33	71	154	332

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Newport Coast Drive  
 Road Segment: Turtle Crest to Bonita Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,800 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 974 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.79	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.75	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.7	61.6	59.9	53.8	62.4	63.1	
Medium Trucks:	56.7	56.0	49.6	48.1	56.6	56.8	
Heavy Trucks:	58.0	57.4	48.4	49.6	58.0	58.1	
Vehicle Noise:	64.7	63.8	60.5	56.0	64.5	65.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	125	270
CNEL:	29	62	134	289

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Nightmist  
 Road Segment: Sand Canyon Avenue to Tulip (Road C)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,000 vehicles	Autos:				15
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):				15
Peak Hour Volume:	743 vehicles	Heavy Trucks (3+ Axles):				15
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-1.48	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-18.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-22.68	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.0	57.0	55.2	49.1	57.8	58.4
Medium Trucks:	52.5	51.8	45.5	43.9	52.4	52.6
Heavy Trucks:	55.0	54.4	45.4	46.6	55.0	55.1
Vehicle Noise:	60.5	59.7	56.0	51.8	60.4	60.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	31	66	142
CNEL:	15	33	70	152

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Northwood  
 Road Segment: Yale Avenue to Savannah

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,500 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	371 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.16	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-22.40	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-26.36	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.8	58.7	56.9	50.9	59.5	60.1
Medium Trucks:	54.0	53.3	47.0	45.4	53.9	54.1
Heavy Trucks:	55.8	55.3	46.2	47.5	55.8	56.0
Vehicle Noise:	62.0	61.1	57.7	53.3	61.8	62.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	23	50	107
CNEL:	11	25	53	114

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Northwood  
 Road Segment: Goldrush to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,000 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	248 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-6.92	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-24.16	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-28.12	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.0	56.9	55.2	49.1	57.8	58.4
Medium Trucks:	52.2	51.6	45.2	43.7	52.1	52.4
Heavy Trucks:	54.1	53.5	44.5	45.7	54.1	54.2
Vehicle Noise:	60.2	59.4	55.9	51.5	60.1	60.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	18	38	82
CNEL:	9	19	40	87

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Oak Canyon Drive  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 495 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-5.00	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-22.24	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-26.20	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.1	63.0	61.3	55.2	63.8	64.4	
Medium Trucks:	57.9	57.2	50.8	49.3	57.7	58.0	
Heavy Trucks:	58.7	58.1	49.1	50.3	58.7	58.8	
Vehicle Noise:	65.9	65.0	61.9	57.2	65.7	66.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	42	90	195
CNEL:	21	45	97	209

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Pacifica  
 Road Segment: Gateway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,100 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	668 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.38	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.1	60.0	58.2	52.2	60.8	61.4
Medium Trucks:	55.0	54.4	48.0	46.5	54.9	55.2
Heavy Trucks:	56.4	55.8	46.7	48.0	56.3	56.5
Vehicle Noise:	63.1	62.2	58.9	54.4	62.9	63.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	45	97	210
CNEL:	22	48	104	225



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Pacifica  
 Road Segment: Alton Parkway to Gateway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	5,700 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	470 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.72	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.91	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.5	58.5	56.7	50.7	59.3	59.9
Medium Trucks:	53.5	52.8	46.5	44.9	53.4	53.6
Heavy Trucks:	54.8	54.3	45.2	46.5	54.8	54.9
Vehicle Noise:	61.6	60.7	57.4	52.8	61.4	61.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	36	77	166
CNEL:	18	38	83	178

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Project Name: Irvine GP  
 Road Name: Pacifica Job Number: 15937  
 Road Segment: Irvine Center Drive to Fortune Drive (Spectrum Center Drive)

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 454 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.87	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-22.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-26.07	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.4	58.3	56.6	50.5	59.1	59.7
Medium Trucks:	53.4	52.7	46.3	44.8	53.2	53.5
Heavy Trucks:	54.7	54.1	45.1	46.3	54.7	54.8
Vehicle Noise:	61.4	60.5	57.2	52.7	61.2	61.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	16	35	75	162
CNEL:	17	37	81	174

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Pacifica  
 Road Segment: Meridian to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,400 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	198 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-8.47	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-25.71	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-29.67	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.8	54.7	53.0	46.9	55.5	56.1
Medium Trucks:	49.8	49.1	42.7	41.2	49.6	49.9
Heavy Trucks:	51.1	50.5	41.5	42.7	51.1	51.2
Vehicle Noise:	57.8	56.9	53.6	49.1	57.6	58.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	20	43	93
CNEL:	10	22	46	100

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Park Place  
 Road Segment: Christamon South to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 297 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-5.46	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-22.70	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-26.66	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	54.0	53.0	51.2	45.2	53.8	54.4	
Medium Trucks:	48.5	47.9	41.5	40.0	48.4	48.7	
Heavy Trucks:	51.0	50.4	41.4	42.6	51.0	51.1	
Vehicle Noise:	56.5	55.7	52.0	47.9	56.4	56.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	36	77
CNEL:	8	18	38	82

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Project Name: Irvine GP  
 Road Name: Portola Parkway Job Number: 15937  
 Road Segment: Bee Canyon Access Road to Sand Canyon Avenue

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,477 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos:	77.5%	12.9%	9.6%	97.42%
	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
	<b>Noise Source Elevations (in feet)</b>				
	Autos:	2.000			
	Medium Trucks:	4.000			
	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos:	57.786			
	Medium Trucks:	57.717			
	Heavy Trucks:	57.787			

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.13	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.37	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.32	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.3	65.6	59.5	68.1	68.7	
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9	
Heavy Trucks:	61.8	61.2	52.2	53.5	61.8	61.9	
Vehicle Noise:	70.0	69.1	66.1	61.2	69.8	70.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	281	604
CNEL:	65	140	302	650

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Portola Parkway  
 Road Segment: Jeffrey Road to Bee Canyon Access Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,900 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,477 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.13	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.37	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.32	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	61.8	61.2	52.2	53.5	61.8	61.9
Vehicle Noise:	70.0	69.1	66.1	61.2	69.8	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	281	604
CNEL:	65	140	302	650

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Portola Parkway  
 Road Segment: Arrowhead to Ridge Valley Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,262 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.01	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.7	64.9	58.8	67.5	68.1
Medium Trucks:	61.1	60.4	54.1	52.5	61.0	61.2
Heavy Trucks:	61.1	60.6	51.5	52.8	61.1	61.3
Vehicle Noise:	69.3	68.4	65.4	60.5	69.1	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	117	253	544
CNEL:	59	126	272	586

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Portola Parkway  
 Road Segment: Sand Canyon Avenue to Arrowhead

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,262 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.01	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.7	66.7	64.9	58.8	67.5	68.1	
Medium Trucks:	61.1	60.4	54.1	52.5	61.0	61.2	
Heavy Trucks:	61.1	60.6	51.5	52.8	61.1	61.3	
Vehicle Noise:	69.3	68.4	65.4	60.5	69.1	69.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	117	253	544
CNEL:	59	126	272	586



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Portola Parkway  
 Road Segment: Portola Springs to SR-241 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 495 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-5.88	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-23.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-27.07	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.7	62.6	60.8	54.8	63.4	64.0	
Medium Trucks:	57.1	56.4	50.0	48.5	56.9	57.2	
Heavy Trucks:	57.1	56.5	47.5	48.7	57.1	57.2	
Vehicle Noise:	65.2	64.3	61.4	56.5	65.0	65.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	135	292
CNEL:	31	68	146	314

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Portola Parkway  
 Road Segment: Gatepark to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,700 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,873 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.10	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.34	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.29	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	65.0	58.9	67.5	68.1
Medium Trucks:	61.2	60.5	54.1	52.6	61.1	61.3
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	69.4	68.4	65.5	60.6	69.2	69.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	343	739
CNEL:	79	171	369	795

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Portola Parkway  
 Road Segment: ETC-6 (SR-261) NB Off-Ramp to Gatepark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,873 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.10	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.34	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.29	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	65.0	58.9	67.5	68.1
Medium Trucks:	61.2	60.5	54.1	52.6	61.1	61.3
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	69.4	68.4	65.5	60.6	69.2	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	343	739
CNEL:	79	171	369	795

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Portola Parkway  
 Road Segment: SR-261 SB Off-Ramp to SR-261 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,873 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.10	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.34	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.29	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	65.0	58.9	67.5	68.1
Medium Trucks:	61.2	60.5	54.1	52.6	61.1	61.3
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	69.4	68.4	65.5	60.6	69.2	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	343	739
CNEL:	79	171	369	795

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Portola Parkway  
 Road Segment: Jamboree Road to Bellevue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,700 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,873 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.10	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.34	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.29	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	65.0	58.9	67.5	68.1
Medium Trucks:	61.2	60.5	54.1	52.6	61.1	61.3
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	69.4	68.4	65.5	60.6	69.2	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	343	739
CNEL:	79	171	369	795

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Portola Parkway  
 Road Segment: Bellevue to ETC-6 (SR-261) SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,873 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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	<b>Noise Source Elevations (in feet)</b>																				
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FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.10	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.34	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.29	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	66.7	65.0	58.9	67.5	68.1	
Medium Trucks:	61.2	60.5	54.1	52.6	61.1	61.3	
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3	
Vehicle Noise:	69.4	68.4	65.5	60.6	69.2	69.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	343	739
CNEL:	79	171	369	795

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Portola Parkway  
 Road Segment: Yale Avenue to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,469 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-18.39	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-22.35	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.8	66.5	67.1
Medium Trucks:	60.1	59.4	53.1	51.5	60.0	60.2
Heavy Trucks:	60.2	59.6	50.5	51.8	60.1	60.3
Vehicle Noise:	68.3	67.4	64.4	59.6	68.1	68.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	135	292	628
CNEL:	68	146	314	676

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Portola Parkway  
 Road Segment: Culver Drive to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,469 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-18.39	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-22.35	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.8	66.5	67.1
Medium Trucks:	60.1	59.4	53.1	51.5	60.0	60.2
Heavy Trucks:	60.2	59.6	50.5	51.8	60.1	60.3
Vehicle Noise:	68.3	67.4	64.4	59.6	68.1	68.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	135	292	628
CNEL:	68	146	314	676



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Portola Parkway  
 Road Segment: Silverado to Portola Springs

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,600 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 627 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 55 mph																					
Near/Far Lane Distance: 48 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 62.5 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 62.5 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 57.786																				
Left View: -90.0 degrees	Medium Trucks: 57.717																				
Right View: 90.0 degrees	Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-4.85	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-22.09	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-26.04	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.7	63.6	61.9	55.8	64.4	65.0
Medium Trucks:	58.1	57.4	51.0	49.5	58.0	58.2
Heavy Trucks:	58.1	57.5	48.5	49.7	58.1	58.2
Vehicle Noise:	66.3	65.3	62.4	57.5	66.1	66.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	158	341
CNEL:	37	79	170	367

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Pusan  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 124 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-8.47	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-25.71	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-29.67	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	50.9	49.8	48.1	42.0	50.6	51.2
Medium Trucks:	45.7	45.1	38.7	37.2	45.6	45.9
Heavy Trucks:	48.9	48.4	39.3	40.6	48.9	49.0
Vehicle Noise:	53.8	52.9	49.0	45.1	53.6	54.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	3	7	14	30
CNEL:	3	7	15	32

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Quail Hill Parkway  
 Road Segment: Shady Canyon Drive to Passage

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,254 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.97	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.21	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.16	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.2	64.2	62.4	56.4	65.0	65.6	
Medium Trucks:	59.0	58.3	52.0	50.4	58.9	59.1	
Heavy Trucks:	59.8	59.3	50.2	51.5	59.8	60.0	
Vehicle Noise:	67.1	66.2	63.0	58.3	66.9	67.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	180	388
CNEL:	42	90	193	416

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Quail Hill Parkway  
 Road Segment: East Knollcrest to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 701 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.73	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.69	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.7	61.7	59.9	53.8	62.5	63.1	
Medium Trucks:	56.5	55.8	49.4	47.9	56.4	56.6	
Heavy Trucks:	57.3	56.7	47.7	48.9	57.3	57.4	
Vehicle Noise:	64.6	63.7	60.5	55.8	64.4	64.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	57	122	263
CNEL:	28	61	131	282

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Project Name: Irvine GP  
 Road Name: Quassar Drive (Spectrum) Job Number: 15937  
 Road Segment: Irvine Center Drive to Spectrum Center Drive (Fortune)

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 149 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 16 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 39.306 Medium Trucks: 39.205 Heavy Trucks: 39.307																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-7.68	1.46	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-24.92	1.48	-1.20	-5.08	0.000	0.000
Heavy Trucks:	77.97	-28.88	1.46	-1.20	-5.56	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	51.3	50.3	48.5	42.4	51.1	51.7
Medium Trucks:	46.2	45.5	39.1	37.6	46.0	46.3
Heavy Trucks:	49.4	48.8	39.7	41.0	49.3	49.5
Vehicle Noise:	54.2	53.4	49.5	45.5	54.0	54.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	3	7	16	35
CNEL:	4	8	17	37

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Red Hill Avenue  
 Road Segment: MacArthur Boulevard to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 38,200 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,152 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.58	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.66	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.62	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.9	67.8	66.1	60.0	68.6	69.2	
Medium Trucks:	62.4	61.8	55.4	53.9	62.3	62.6	
Heavy Trucks:	62.9	62.3	53.2	54.5	62.8	63.0	
Vehicle Noise:	70.6	69.7	66.6	61.8	70.4	70.8	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	192	413	890
CNEL:	96	206	444	957

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Red Hill Avenue  
 Road Segment: I-405 Over Crossing to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,625 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.30	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.54	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.49	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.7	66.6	64.8	58.8	67.4	68.0	
Medium Trucks:	61.2	60.6	54.2	52.6	61.1	61.3	
Heavy Trucks:	61.6	61.1	52.0	53.3	61.6	61.7	
Vehicle Noise:	69.4	68.4	65.4	60.6	69.2	69.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	255	549
CNEL:	59	127	274	590

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Red Hill Avenue  
 Road Segment: Alton Parkway to Deere Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,000 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,310 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.23	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.01	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.97	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.5	64.7	58.6	67.3	67.9
Medium Trucks:	61.1	60.4	54.1	52.5	61.0	61.2
Heavy Trucks:	61.5	60.9	51.9	53.1	61.5	61.6
Vehicle Noise:	69.2	68.3	65.3	60.5	69.0	69.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	72	156	336	724
CNEL:	78	168	361	778



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Red Hill Avenue  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,211 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.04	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.20	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.16	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.3	64.5	58.5	67.1	67.7
Medium Trucks:	60.9	60.2	53.9	52.3	60.8	61.0
Heavy Trucks:	61.3	60.7	51.7	53.0	61.3	61.4
Vehicle Noise:	69.0	68.1	65.1	60.3	68.8	69.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	151	326	703
CNEL:	76	163	351	755

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Red Hill Avenue  
 Road Segment: Deere Avenue to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,203 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.02	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.22	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.17	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.3	66.3	64.5	58.4	67.1	67.7	
Medium Trucks:	60.9	60.2	53.9	52.3	60.8	61.0	
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4	
Vehicle Noise:	69.0	68.1	65.1	60.3	68.8	69.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	151	326	701
CNEL:	75	162	350	753

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Red Hill Avenue  
 Road Segment: Skypark East to MacArthur Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,700 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,378 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.02	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.26	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.21	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.2	65.4	59.4	68.0	68.6
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	69.9	69.0	66.0	61.2	69.7	70.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	124	268	576
CNEL:	62	133	287	619

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Red Hill Avenue  
 Road Segment: Main Street to Skypark East

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,205 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.60	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.84	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.79	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.6	64.8	58.8	67.4	68.0
Medium Trucks:	61.2	60.6	54.2	52.6	61.1	61.3
Heavy Trucks:	61.6	61.1	52.0	53.3	61.6	61.7
Vehicle Noise:	69.4	68.4	65.4	60.6	69.2	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	245	527
CNEL:	57	122	263	566

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Research Drive  
 Road Segment: Hubble to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,700 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	800 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.92	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.16	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.11	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.3	62.2	60.5	54.4	63.0	63.6
Medium Trucks:	57.1	56.4	50.0	48.5	56.9	57.2
Heavy Trucks:	57.9	57.3	48.3	49.5	57.9	58.0
Vehicle Noise:	65.1	64.2	61.1	56.4	64.9	65.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	62	133	287
CNEL:	31	66	143	308

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Research Drive  
 Road Segment: Scientific to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 833 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.74	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.94	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.5	62.4	60.6	54.6	63.2	63.8	
Medium Trucks:	57.2	56.6	50.2	48.7	57.1	57.3	
Heavy Trucks:	58.1	57.5	48.4	49.7	58.1	58.2	
Vehicle Noise:	65.3	64.4	61.3	56.6	65.1	65.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	137	295
CNEL:	32	68	147	317

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Research Drive  
 Road Segment: Bake Parkway to Muller

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 957 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.34	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.1	63.0	61.2	55.2	63.8	64.4	
Medium Trucks:	57.8	57.2	50.8	49.3	57.7	57.9	
Heavy Trucks:	58.7	58.1	49.0	50.3	58.7	58.8	
Vehicle Noise:	65.9	65.0	61.9	57.2	65.7	66.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	70	150	324
CNEL:	35	75	161	347

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Research Drive  
 Road Segment: Irvine Center Drive to Bunsen

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,600 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	710 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.44	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.68	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.64	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.8	61.7	59.9	53.9	62.5	63.1
Medium Trucks:	56.5	55.9	49.5	48.0	56.4	56.6
Heavy Trucks:	57.4	56.8	47.7	49.0	57.4	57.5
Vehicle Noise:	64.6	63.7	60.6	55.9	64.4	64.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	57	123	265
CNEL:	28	61	132	284



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing	Project Name: Irvine GP
Road Name: Ridge Valley (O Street)	Job Number: 15937
Road Segment: Irvine Boulevard to Trabuco Road (Great Park Boulevard)	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,900 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 817 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 45 mph																					
Near/Far Lane Distance: 48 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 62.5 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 62.5 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 57.786																				
Left View: -90.0 degrees	Medium Trucks: 57.717																				
Right View: 90.0 degrees	Heavy Trucks: 57.787																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.83	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.02	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.4	62.3	60.6	54.5	63.1	63.7
Medium Trucks:	57.1	56.5	50.1	48.6	57.0	57.3
Heavy Trucks:	58.0	57.4	48.4	49.6	58.0	58.1
Vehicle Noise:	65.2	64.3	61.2	56.5	65.0	65.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	135	291
CNEL:	31	67	145	312

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Ridge Valley (O Street)  
 Road Segment: Portola Parkway to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 891 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.45	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.69	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.65	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.8	62.7	60.9	54.9	63.5	64.1
Medium Trucks:	57.5	56.8	50.5	48.9	57.4	57.6
Heavy Trucks:	58.4	57.8	48.7	50.0	58.3	58.5
Vehicle Noise:	65.6	64.7	61.5	56.9	65.4	65.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	143	309
CNEL:	33	71	154	331

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing	Project Name: Irvine GP
Road Name: Ridge Valley (O Street)	Job Number: 15937
Road Segment: Trabuco Road (Great Park Boulevard) to Marine Way	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 875 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.73	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.7	62.6	60.9	54.8	63.4	64.0
Medium Trucks:	57.4	56.8	50.4	48.9	57.3	57.6
Heavy Trucks:	58.3	57.7	48.7	49.9	58.3	58.4
Vehicle Noise:	65.5	64.6	61.5	56.8	65.3	65.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	66	142	305
CNEL:	33	70	152	327

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Ridge Valley (O Street)  
 Road Segment: Ranchland to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 900 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 74 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 45 mph																					
Near/Far Lane Distance: 12 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 37.5 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 37.5 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 37.138																				
Left View: -90.0 degrees	Medium Trucks: 37.030																				
Right View: 90.0 degrees	Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-13.24	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-30.48	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-34.44	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.9	54.8	53.0	47.0	55.6	56.2
Medium Trucks:	49.6	48.9	42.6	41.0	49.5	49.7
Heavy Trucks:	50.4	49.9	40.8	42.1	50.4	50.6
Vehicle Noise:	57.7	56.8	53.6	49.0	57.5	58.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	12	26	55
CNEL:	6	13	27	59

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Ridgeline Drive  
 Road Segment: Concordia East to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,040 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 32.140 Medium Trucks: 32.016 Heavy Trucks: 32.141																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-0.69	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-17.93	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	81.57	-21.89	2.78	-1.20	-5.56	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.1	62.4	56.3	64.9	65.5
Medium Trucks:	59.4	58.7	52.4	50.8	59.3	59.5
Heavy Trucks:	61.3	60.7	51.6	52.9	61.2	61.4
Vehicle Noise:	67.4	66.5	63.1	58.7	67.2	67.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	56	121	262
CNEL:	28	60	130	279

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Ridgeline Drive  
 Road Segment: Turtle Rock Drive to San Simeon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,600 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,040 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 35 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 40.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 40.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 32.140				
Road Grade: 0.0%		Medium Trucks: 32.016				
Left View: -90.0 degrees		Heavy Trucks: 32.141				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-0.69	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-17.93	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	81.57	-21.89	2.78	-1.20	-5.56	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.1	62.4	56.3	64.9	65.5
Medium Trucks:	59.4	58.7	52.4	50.8	59.3	59.5
Heavy Trucks:	61.3	60.7	51.6	52.9	61.2	61.4
Vehicle Noise:	67.4	66.5	63.1	58.7	67.2	67.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	56	121	262
CNEL:	28	60	130	279

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Rockfield Avenue  
 Road Segment: Whatney to McLaren

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 990 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.99	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.19	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.2	63.2	61.4	55.3	64.0	64.6	
Medium Trucks:	58.0	57.3	50.9	49.4	57.9	58.1	
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9	
Vehicle Noise:	66.1	65.1	62.0	57.3	65.9	66.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	154	331
CNEL:	36	77	165	355

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Rockfield Avenue  
 Road Segment: Bake Parkway to Whatney

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	5,000 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	413 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-5.80	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-23.04	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-26.99	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.4	59.4	57.6	51.5	60.2	60.8
Medium Trucks:	54.2	53.5	47.1	45.6	54.1	54.3
Heavy Trucks:	55.0	54.4	45.4	46.6	55.0	55.1
Vehicle Noise:	62.3	61.3	58.2	53.5	62.1	62.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	40	86	185
CNEL:	20	43	92	198



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Rockfield Avenue  
 Road Segment: Thomas to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 413 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-5.80	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-23.04	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-26.99	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.4	59.4	57.6	51.5	60.2	60.8	
Medium Trucks:	54.2	53.5	47.1	45.6	54.1	54.3	
Heavy Trucks:	55.0	54.4	45.4	46.6	55.0	55.1	
Vehicle Noise:	62.3	61.3	58.2	53.5	62.1	62.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	40	86	185
CNEL:	20	43	92	198

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Roosevelt  
 Road Segment: Jeffrey Road to Vision

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,031 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.31	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.54	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.50	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.0	61.9	60.1	54.1	62.7	63.3	
Medium Trucks:	56.9	56.3	49.9	48.4	56.8	57.0	
Heavy Trucks:	58.2	57.7	48.6	49.9	58.2	58.4	
Vehicle Noise:	65.0	64.1	60.8	56.2	64.8	65.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	60	130	281
CNEL:	30	65	139	300

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Roosevelt  
 Road Segment: Yale Avenue to Van Buren

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,500 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	701 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	30.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	30.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 29.547				
Road Grade:	0.0%	Medium Trucks: 29.411				
Left View:	-90.0 degrees	Heavy Trucks: 29.547				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.98	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	77.72	-20.22	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	82.99	-24.17	3.32	-1.20	-5.77	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.6	62.8	56.8	65.4	66.0
Medium Trucks:	59.6	59.0	52.6	51.1	59.5	59.8
Heavy Trucks:	60.9	60.4	51.3	52.6	60.9	61.1
Vehicle Noise:	67.7	66.8	63.5	58.9	67.5	67.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	44	95	204
CNEL:	22	47	101	218

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Roosevelt  
 Road Segment: Vision to Bay Tree

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 866 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.06	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.30	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.26	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.2	61.1	59.4	53.3	61.9	62.5	
Medium Trucks:	56.2	55.5	49.1	47.6	56.1	56.3	
Heavy Trucks:	57.5	56.9	47.9	49.1	57.5	57.6	
Vehicle Noise:	64.2	63.3	60.0	55.5	64.0	64.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	116	250
CNEL:	27	58	124	267

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Roosevelt  
 Road Segment: Nimitz to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,500 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,031 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.31	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.54	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.50	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.0	61.9	60.1	54.1	62.7	63.3
Medium Trucks:	56.9	56.3	49.9	48.4	56.8	57.0
Heavy Trucks:	58.2	57.7	48.6	49.9	58.2	58.4
Vehicle Noise:	65.0	64.1	60.8	56.2	64.8	65.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	60	130	281
CNEL:	30	65	139	300

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Roosevelt  
 Road Segment: Tulip (Road C) to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 8,800 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 726 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.83	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.02	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.4	60.4	58.6	52.6	61.2	61.8	
Medium Trucks:	55.4	54.7	48.4	46.8	55.3	55.5	
Heavy Trucks:	56.7	56.1	47.1	48.4	56.7	56.8	
Vehicle Noise:	63.4	62.5	59.3	54.7	63.3	63.7	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	48	103	222
CNEL:	24	51	110	238

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Royal Oak  
 Road Segment: Alton Parkway to Eaglecreek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 380 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 29.547 Medium Trucks: 29.411 Heavy Trucks: 29.547																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.07	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	75.75	-22.31	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	81.57	-26.26	3.32	-1.20	-5.77	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.4	60.3	58.5	52.5	61.1	61.7
Medium Trucks:	55.6	54.9	48.6	47.0	55.5	55.7
Heavy Trucks:	57.4	56.8	47.8	49.1	57.4	57.5
Vehicle Noise:	63.6	62.7	59.3	54.9	63.4	63.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	23	51	109
CNEL:	12	25	54	116

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: Oak Canyon Drive to Burt Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 36,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,020 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.39	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.85	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.80	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.9	59.8	68.4	69.0	
Medium Trucks:	62.3	61.6	55.2	53.7	62.1	62.4	
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8	
Vehicle Noise:	70.4	69.5	66.4	61.6	70.2	70.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	186	402	865
CNEL:	93	200	432	930



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: Irvine Center Drive to Oak Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,954 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.29	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.94	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.90	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	68.9
Medium Trucks:	62.2	61.5	55.1	53.6	62.0	62.3
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	70.3	69.4	66.3	61.5	70.1	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	184	396	853
CNEL:	92	197	425	916

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-405 NB Off-Ramp to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,600 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,020 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 60.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	47.329			
Road Grade: 0.0%	Medium Trucks:	47.244			
Left View: -90.0 degrees	Heavy Trucks:	47.329			
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.39	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.85	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.80	0.25	-1.20	-5.34	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.6	70.6	68.8	62.8	71.4	72.0	
Medium Trucks:	65.2	64.5	58.2	56.6	65.1	65.3	
Heavy Trucks:	65.6	65.0	56.0	57.3	65.6	65.7	
Vehicle Noise:	73.3	72.4	69.4	64.6	73.1	73.6	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	210	451	973
CNEL:	104	225	485	1,045

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: Burt Road to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,094 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.50	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.74	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.70	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.2	68.1	66.4	60.3	69.0	69.6	
Medium Trucks:	62.8	62.1	55.7	54.2	62.7	62.9	
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3	
Vehicle Noise:	70.9	70.0	66.9	62.2	70.7	71.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	192	414	892
CNEL:	96	206	445	958

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: Marine to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 38,800 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,201 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 56.593				
Road Grade: 0.0%	Medium Trucks: 56.522				
Left View: -90.0 degrees	Heavy Trucks: 56.593				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.64	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-14.59	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-18.55	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.7	67.9	61.9	70.5	71.1
Medium Trucks:	64.3	63.6	57.3	55.7	64.2	64.4
Heavy Trucks:	64.7	64.1	55.1	56.3	64.7	64.8
Vehicle Noise:	72.4	71.5	68.5	63.7	72.2	72.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	141	304	654	1,409
CNEL:	151	326	703	1,514

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: Trabuco Road to Towngate

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,500 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,599 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.74	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.50	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.46	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.0	67.0	65.2	59.2	67.8	68.4	
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7	
Heavy Trucks:	62.0	61.4	52.4	53.7	62.0	62.1	
Vehicle Noise:	69.7	68.8	65.8	61.0	69.5	70.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	169	363	783
CNEL:	84	181	390	841

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: Barranca Parkway to Waterworks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,153 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.92	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.32	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.27	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.2	66.2	64.4	58.3	67.0	67.6	
Medium Trucks:	60.8	60.1	53.8	52.2	60.7	60.9	
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3	
Vehicle Noise:	68.9	68.0	65.0	60.2	68.7	69.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	149	321	691
CNEL:	74	160	344	742

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-5 SB Off-Ramp to Marine

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 38,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,201 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.64	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-14.59	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-18.55	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.7	69.7	67.9	61.9	70.5	71.1	
Medium Trucks:	64.3	63.6	57.3	55.7	64.2	64.4	
Heavy Trucks:	64.7	64.1	55.1	56.3	64.7	64.8	
Vehicle Noise:	72.4	71.5	68.5	63.7	72.2	72.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	141	304	654	1,409
CNEL:	151	326	703	1,514

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: Hospital to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,211 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.04	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.20	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.16	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.3	64.5	58.5	67.1	67.7
Medium Trucks:	60.9	60.2	53.9	52.3	60.8	61.0
Heavy Trucks:	61.3	60.7	51.7	53.0	61.3	61.4
Vehicle Noise:	69.0	68.1	65.1	60.3	68.8	69.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	151	326	703
CNEL:	76	163	351	755



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: Nightmist to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,696 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.27	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-13.97	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-17.93	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.4	70.3	68.5	62.5	71.1	71.7
Medium Trucks:	64.9	64.3	57.9	56.4	64.8	65.0
Heavy Trucks:	65.3	64.8	55.7	57.0	65.3	65.5
Vehicle Noise:	73.1	72.1	69.1	64.3	72.9	73.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	155	334	720	1,551
CNEL:	167	359	774	1,667

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,261 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.13	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.10	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.06	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	69.3	67.6	61.5	70.1	70.7
Medium Trucks:	64.0	63.3	56.9	55.4	63.8	64.1
Heavy Trucks:	64.4	63.8	54.7	56.0	64.4	64.5
Vehicle Noise:	72.1	71.2	68.1	63.3	71.9	72.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	173	372	802
CNEL:	86	186	400	862

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-5 NB Off-Ramp to Nightmist

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 43,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,614 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.17	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-14.07	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-18.02	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.3	70.2	68.4	62.4	71.0	71.6
Medium Trucks:	64.8	64.2	57.8	56.3	64.7	64.9
Heavy Trucks:	65.2	64.7	55.6	56.9	65.2	65.4
Vehicle Noise:	73.0	72.0	69.0	64.2	72.8	73.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	153	329	709	1,528
CNEL:	164	354	762	1,642

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: Towngate to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,908 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,220 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.05	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.18	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.14	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.4	66.3	64.5	58.5	67.1	67.7	
Medium Trucks:	60.9	60.3	53.9	52.3	60.8	61.0	
Heavy Trucks:	61.3	60.8	51.7	53.0	61.3	61.5	
Vehicle Noise:	69.1	68.1	65.1	60.3	68.9	69.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	152	327	705
CNEL:	76	163	352	757

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: Waterworks to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,100 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,153 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.92	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.32	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.27	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.2	64.4	58.3	67.0	67.6
Medium Trucks:	60.8	60.1	53.8	52.2	60.7	60.9
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	68.9	68.0	65.0	60.2	68.7	69.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	149	321	691
CNEL:	74	160	344	742

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: Irvine Boulevard to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,600 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,122 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.91	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.15	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.10	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	65.0	63.2	57.2	65.8	66.4
Medium Trucks:	59.6	58.9	52.6	51.0	59.5	59.7
Heavy Trucks:	60.0	59.4	50.4	51.7	60.0	60.1
Vehicle Noise:	67.7	66.8	63.8	59.0	67.5	68.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	92	199	429
CNEL:	46	99	214	461

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: Roosevelt to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 37,700 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,110 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.52	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-14.72	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-18.67	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	69.5	67.8	61.7	70.4	71.0
Medium Trucks:	64.2	63.5	57.1	55.6	64.1	64.3
Heavy Trucks:	64.6	64.0	55.0	56.2	64.6	64.7
Vehicle Noise:	72.3	71.4	68.3	63.6	72.1	72.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	138	298	642	1,383
CNEL:	149	320	689	1,485

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Sand Canyon Avenue  
 Road Segment: Alton Parkway to Hospital

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,800 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,211 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.04	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.20	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.16	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	64.9	58.9	67.5	68.1
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4
Heavy Trucks:	61.7	61.1	52.1	53.4	61.7	61.8
Vehicle Noise:	69.4	68.5	65.5	60.7	69.3	69.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	154	331	713
CNEL:	77	165	356	766



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Sand Canyon/Shady Canyon  
 Road Segment: Quail Hill Parkway to I-405 SB Ramps

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,700 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,790 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 47.329				
Road Grade: 0.0%	Medium Trucks: 47.244				
Left View: -90.0 degrees	Heavy Trucks: 47.329				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.12	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.12	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.07	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.4	68.3	66.5	60.5	69.1	69.7	
Medium Trucks:	62.9	62.3	55.9	54.4	62.8	63.1	
Heavy Trucks:	63.4	62.8	53.7	55.0	63.3	63.5	
Vehicle Noise:	71.1	70.2	67.1	62.3	70.9	71.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	148	319	686
CNEL:	74	159	342	737

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Scientific Way  
 Road Segment: Irvine Center Drive to Wald

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 1,500 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 124 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 35 mph					
Near/Far Lane Distance: 48 feet					
	<b>Vehicle Mix</b>				
	VehicleType	Day	Evening	Night	Daily
	Autos: 77.5% 12.9% 9.6% 97.42%				
	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000				
Centerline Dist. to Barrier: 62.5 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Centerline Dist. to Observer: 62.5 feet					
Barrier Distance to Observer: 0.0 feet					
Observer Height (Above Pad): 5.0 feet					
Pad Elevation: 0.0 feet					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade: 0.0%	Autos: 57.786				
Left View: -90.0 degrees	Medium Trucks: 57.717				
Right View: 90.0 degrees	Heavy Trucks: 57.787				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-9.93	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-27.17	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-31.13	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	52.1	51.1	49.3	43.2	51.9	52.5	
Medium Trucks:	46.3	45.7	39.3	37.8	46.2	46.5	
Heavy Trucks:	48.2	47.6	38.6	39.8	48.2	48.3	
Vehicle Noise:	54.3	53.5	50.0	45.6	54.2	54.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	12	26	55
CNEL:	6	13	27	59

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Shady Canyon Drive  
 Road Segment: Culver Drive/Bonita Canyon Drive to Cloverfield

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,100 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	668 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.16	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-21.40	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-25.35	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.6	63.8	57.8	66.4	67.0
Medium Trucks:	60.3	59.6	53.2	51.7	60.1	60.4
Heavy Trucks:	60.7	60.1	51.0	52.3	60.6	60.8
Vehicle Noise:	68.4	67.5	64.4	59.6	68.2	68.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	132	283
CNEL:	30	66	141	305

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Shady Canyon Drive  
 Road Segment: Bommer Canyon Road to Sunnyhill

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,000 vehicles	Autos:				15
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):				15
Peak Hour Volume:	578 vehicles	Heavy Trucks (3+ Axles):				15
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	50.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 42.814				
Road Grade:	0.0%	Medium Trucks: 42.720				
Left View:	-90.0 degrees	Heavy Trucks: 42.814				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.79	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-22.03	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.99	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.1	62.3	56.2	64.9	65.5
Medium Trucks:	58.7	58.0	51.7	50.1	58.6	58.8
Heavy Trucks:	59.1	58.5	49.5	50.7	59.1	59.2
Vehicle Noise:	66.8	65.9	62.9	58.1	66.6	67.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	297
CNEL:	32	69	148	320

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Skyhawk  
 Road Segment: Great Park Boulevard to Marine Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,200 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	182 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-6.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-24.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-28.00	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	49.7	48.6	46.8	40.8	49.4	50.0
Medium Trucks:	44.5	43.8	37.5	35.9	44.4	44.6
Heavy Trucks:	47.7	47.1	38.1	39.4	47.7	47.8
Vehicle Noise:	52.6	51.7	47.8	43.9	52.4	52.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	19	42
CNEL:	4	10	21	45

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Southwood  
 Road Segment: Yale Avenue to Colt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 248 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-6.92	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-24.16	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-28.12	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	58.0	56.9	55.2	49.1	57.8	58.4	
Medium Trucks:	52.2	51.6	45.2	43.7	52.1	52.4	
Heavy Trucks:	54.1	53.5	44.5	45.7	54.1	54.2	
Vehicle Noise:	60.2	59.4	55.9	51.5	60.1	60.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	18	38	82
CNEL:	9	19	40	87

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Southwood  
 Road Segment: Challenger to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,600 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	215 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-7.55	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-24.78	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-28.74	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.4	56.3	54.6	48.5	57.1	57.7
Medium Trucks:	51.6	50.9	44.6	43.0	51.5	51.7
Heavy Trucks:	53.5	52.9	43.8	45.1	53.4	53.6
Vehicle Noise:	59.6	58.7	55.3	50.9	59.4	59.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	16	34	74
CNEL:	8	17	37	79

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Spectrum Center Drive (Fortune)  
 Road Segment: Pacifica to Quassar Drive (Spectrum )

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,500 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 866 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-18.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-22.01	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.7	57.6	55.9	49.8	58.4	59.0
Medium Trucks:	53.2	52.5	46.2	44.6	53.1	53.3
Heavy Trucks:	55.7	55.1	46.0	47.3	55.6	55.8
Vehicle Noise:	61.2	60.3	56.7	52.5	61.0	61.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	16	34	73	158
CNEL:	17	36	78	168



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Spectrum Center Drive (Fortune)  
 Road Segment: Quassar Drive (Spectrum ) to Gatewayb

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,900 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 982 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.51	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.46	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	59.2	58.2	56.4	50.4	59.0	59.6	
Medium Trucks:	53.7	53.1	46.7	45.2	53.6	53.8	
Heavy Trucks:	56.2	55.6	46.6	47.8	56.2	56.3	
Vehicle Noise:	61.7	60.9	57.2	53.1	61.6	62.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	80	171
CNEL:	18	39	85	183

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Sunnyhill  
 Road Segment: Shady Canyon Drive to Turtle Rock Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	5,600 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	462 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-2.75	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-19.99	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-23.95	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.7	52.7	50.9	44.9	53.5	54.1
Medium Trucks:	48.6	47.9	41.5	40.0	48.4	48.7
Heavy Trucks:	51.8	51.2	42.2	43.4	51.8	51.9
Vehicle Noise:	56.6	55.8	51.9	48.0	56.5	56.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	36	78
CNEL:	8	18	39	83

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Technology Drive  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,100 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,163 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.53	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.49	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.9	63.9	62.1	56.0	64.7	65.3	
Medium Trucks:	58.7	58.0	51.6	50.1	58.6	58.8	
Heavy Trucks:	59.5	58.9	49.9	51.1	59.5	59.6	
Vehicle Noise:	66.8	65.8	62.7	58.0	66.6	67.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	171	369
CNEL:	40	85	184	396

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing	Project Name: Irvine GP
Road Name: Technology Drive	Job Number: 15937
Road Segment: Old Laguna Canyon Road to I-5/SR-133 Undercrossing	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 479 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-5.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-22.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-26.35	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.1	60.0	58.2	52.2	60.8	61.4
Medium Trucks:	54.8	54.1	47.8	46.2	54.7	54.9
Heavy Trucks:	55.7	55.1	46.0	47.3	55.6	55.8
Vehicle Noise:	62.9	62.0	58.8	54.2	62.7	63.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	44	95	204
CNEL:	22	47	102	219

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Technology Drive  
 Road Segment: I-5/SR-133 to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 437 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-5.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-22.78	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-26.74	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.7	59.6	57.8	51.8	60.4	61.0	
Medium Trucks:	54.4	53.8	47.4	45.9	54.3	54.5	
Heavy Trucks:	55.3	54.7	45.6	46.9	55.3	55.4	
Vehicle Noise:	62.5	61.6	58.5	53.8	62.3	62.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	41	89	192
CNEL:	21	44	96	206

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Technology Drive  
 Road Segment: Ada to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 140 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-10.48	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-27.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-31.68	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	55.7	54.7	52.9	46.8	55.5	56.1	
Medium Trucks:	49.5	48.8	42.5	40.9	49.4	49.6	
Heavy Trucks:	50.3	49.7	40.7	42.0	50.3	50.4	
Vehicle Noise:	57.6	56.7	53.5	48.8	57.4	57.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	42	90
CNEL:	10	21	45	97

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Toledo Way  
 Road Segment: Bake Parkway to City Limits

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 627 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.44	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-21.67	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-25.63	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.5	62.5	60.7	54.6	63.3	63.9	
Medium Trucks:	57.1	56.4	50.1	48.5	57.0	57.2	
Heavy Trucks:	57.5	56.9	47.9	49.1	57.5	57.6	
Vehicle Noise:	65.2	64.3	61.3	56.5	65.0	65.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	135	291
CNEL:	31	67	145	313

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Toledo Way  
 Road Segment: Goodyear to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 503 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.39	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.63	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.58	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.6	61.5	59.7	53.7	62.3	62.9	
Medium Trucks:	56.1	55.5	49.1	47.6	56.0	56.2	
Heavy Trucks:	56.5	56.0	46.9	48.2	56.5	56.7	
Vehicle Noise:	64.3	63.3	60.3	55.5	64.1	64.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	117	251
CNEL:	27	58	125	270



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Toledo Way  
 Road Segment: Alton Parkway to Parker

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 437 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-6.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-23.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-27.20	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.0	60.9	59.1	53.1	61.7	62.3	
Medium Trucks:	55.5	54.9	48.5	46.9	55.4	55.6	
Heavy Trucks:	55.9	55.4	46.3	47.6	55.9	56.0	
Vehicle Noise:	63.7	62.7	59.7	54.9	63.5	63.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	49	106	229
CNEL:	25	53	114	246

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Trabuco Road  
 Road Segment: Keystone to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,100 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,081 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.61	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.85	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.81	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.5	61.8	55.7	64.3	64.9
Medium Trucks:	58.4	57.7	51.3	49.8	58.2	58.5
Heavy Trucks:	59.2	58.6	49.6	50.8	59.2	59.3
Vehicle Noise:	66.4	65.5	62.4	57.7	66.2	66.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	163	351
CNEL:	38	81	175	377

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Trabuco Road  
 Road Segment: Jeffrey Road to Keystone

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,081 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.61	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.85	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.81	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.5	61.8	55.7	64.3	64.9
Medium Trucks:	58.4	57.7	51.3	49.8	58.2	58.5
Heavy Trucks:	59.2	58.6	49.6	50.8	59.2	59.3
Vehicle Noise:	66.4	65.5	62.4	57.7	66.2	66.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	163	351
CNEL:	38	81	175	377

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Trabuco Road  
 Road Segment: Culver Drive to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 990 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.99	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.19	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.2	61.4	55.3	64.0	64.6
Medium Trucks:	58.0	57.3	50.9	49.4	57.9	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.1	65.1	62.0	57.3	65.9	66.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	154	331
CNEL:	36	77	165	355

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Trabuco Road  
 Road Segment: Monroe to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 990 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.99	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.19	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.2	63.2	61.4	55.3	64.0	64.6	
Medium Trucks:	58.0	57.3	50.9	49.4	57.9	58.1	
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9	
Vehicle Noise:	66.1	65.1	62.0	57.3	65.9	66.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	154	331
CNEL:	36	77	165	355

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Trabuco Road  
 Road Segment: I-5 NB Off-Ramp to Monroe

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 990 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.99	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.19	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.2	61.4	55.3	64.0	64.6
Medium Trucks:	58.0	57.3	50.9	49.4	57.9	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.1	65.1	62.0	57.3	65.9	66.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	154	331
CNEL:	36	77	165	355

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Trabuco Road  
 Road Segment: Yale Avenue to Remington

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	10,500 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	866 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.81	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.77	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.6	62.6	60.8	54.8	63.4	64.0
Medium Trucks:	57.4	56.7	50.4	48.8	57.3	57.5
Heavy Trucks:	58.2	57.7	48.6	49.9	58.2	58.3
Vehicle Noise:	65.5	64.6	61.4	56.7	65.3	65.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	141	303
CNEL:	32	70	151	325

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Trabuco Road  
 Road Segment: Remington to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 866 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.81	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.77	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.6	62.6	60.8	54.8	63.4	64.0
Medium Trucks:	57.4	56.7	50.4	48.8	57.3	57.5
Heavy Trucks:	58.2	57.7	48.6	49.9	58.2	58.3
Vehicle Noise:	65.5	64.6	61.4	56.7	65.3	65.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	141	303
CNEL:	32	70	151	325



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Turtle Ridge Drive  
 Road Segment: Federation Way to Bonita Canyon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	0 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-42.79	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-60.02	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-63.98	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	23.4	22.4	20.6	14.5	23.2	23.8	
Medium Trucks:	17.2	16.5	10.2	8.6	17.1	17.3	
Heavy Trucks:	18.0	17.4	8.4	9.7	18.0	18.1	
Vehicle Noise:	25.3	24.4	21.2	16.5	25.1	25.5	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	1
CNEL:	0	0	0	1

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Turtle Rock Drive  
 Road Segment: Ridgeline to Willowleaf

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,000 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	578 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.34	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-21.57	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-25.53	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.8	63.7	61.9	55.9	64.5	65.1
Medium Trucks:	58.5	57.9	51.5	49.9	58.4	58.6
Heavy Trucks:	59.4	58.8	49.7	51.0	59.3	59.5
Vehicle Noise:	66.6	65.7	62.5	57.9	66.4	66.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	100	216
CNEL:	23	50	108	232

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Turtle Rock Drive  
 Road Segment: Silkwood to Sunnyhill

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,200 vehicles	Autos:				15
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):				15
Peak Hour Volume:	594 vehicles	Heavy Trucks (3+ Axles):				15
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.21	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-21.45	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-25.41	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	63.8	62.1	56.0	64.6	65.2
Medium Trucks:	58.7	58.0	51.6	50.1	58.5	58.8
Heavy Trucks:	59.5	58.9	49.9	51.1	59.5	59.6
Vehicle Noise:	66.7	65.8	62.7	58.0	66.5	67.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	102	220
CNEL:	24	51	110	236

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Turtle Rock Drive  
 Road Segment: Canyon Park to Ridgeline

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,700 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	553 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.53	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-21.76	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-25.72	1.83	-1.20	-5.60	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.6	63.5	61.7	55.7	64.3	64.9	
Medium Trucks:	58.3	57.7	51.3	49.8	58.2	58.5	
Heavy Trucks:	59.2	58.6	49.5	50.8	59.1	59.3	
Vehicle Noise:	66.4	65.5	62.3	57.7	66.2	66.7	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	45	97	210
CNEL:	22	48	104	225

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Turtle Rock Drive  
 Road Segment: Sunnyhill to Southernwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 289 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-7.35	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-24.58	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-28.54	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.7	60.7	58.9	52.9	61.5	62.1
Medium Trucks:	55.5	54.8	48.5	46.9	55.4	55.6
Heavy Trucks:	56.3	55.8	46.7	48.0	56.3	56.5
Vehicle Noise:	63.6	62.7	59.5	54.9	63.4	63.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	29	63	136
CNEL:	15	31	68	146

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Turtle Rock Drive  
 Road Segment: Campus Drive to Hillgate

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,700 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 553 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 45 mph																					
Near/Far Lane Distance: 48 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 62.5 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 62.5 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 57.786																				
Left View: -90.0 degrees	Medium Trucks: 57.717																				
Right View: 90.0 degrees	Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.76	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.72	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.7	60.6	58.9	52.8	61.4	62.0
Medium Trucks:	55.4	54.8	48.4	46.9	55.3	55.6
Heavy Trucks:	56.3	55.7	46.7	47.9	56.3	56.4
Vehicle Noise:	63.5	62.6	59.5	54.8	63.3	63.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	48	104	225
CNEL:	24	52	112	241

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Turtle Rock Drive  
 Road Segment: Paseo Segovia to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,900 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 322 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 32.140 Medium Trucks: 32.016 Heavy Trucks: 32.141																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-6.88	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-24.11	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	84.25	-28.07	2.78	-1.20	-5.56	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.2	62.1	60.3	54.3	62.9	63.5
Medium Trucks:	56.9	56.3	49.9	48.4	56.8	57.1
Heavy Trucks:	57.8	57.2	48.1	49.4	57.7	57.9
Vehicle Noise:	65.0	64.1	60.9	56.3	64.8	65.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	84	180
CNEL:	19	42	90	193

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: University Drive  
 Road Segment: Golden Glow to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,921 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.99	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.95	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.2	69.1	67.4	61.3	69.9	70.5	
Medium Trucks:	63.8	63.1	56.7	55.2	63.7	63.9	
Heavy Trucks:	64.2	63.6	54.6	55.8	64.2	64.3	
Vehicle Noise:	71.9	71.0	67.9	63.2	71.7	72.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	175	377	811
CNEL:	87	188	405	872



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: University Drive  
 Road Segment: Ridgeline to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,900 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,869 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.47	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.77	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-17.73	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.1	67.3	61.3	69.9	70.5
Medium Trucks:	63.7	63.0	56.7	55.1	63.6	63.8
Heavy Trucks:	64.1	63.5	54.5	55.7	64.1	64.2
Vehicle Noise:	71.8	70.9	67.9	63.1	71.6	72.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	96	208	447	964
CNEL:	104	223	481	1,036

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: University Drive  
 Road Segment: Culver Drive to Golden Glow

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,500 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,846 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.13	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.06	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.0	67.3	61.2	69.8	70.4
Medium Trucks:	63.7	63.0	56.6	55.1	63.5	63.8
Heavy Trucks:	64.1	63.5	54.4	55.7	64.1	64.2
Vehicle Noise:	71.8	70.9	67.8	63.0	71.6	72.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	172	370	798
CNEL:	86	185	398	857

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: University Drive  
 Road Segment: Yale Avenue to Ridgeline

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,200 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,822 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.14	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.10	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.0	67.2	61.2	69.8	70.4
Medium Trucks:	63.6	62.9	56.6	55.0	63.5	63.7
Heavy Trucks:	64.0	63.4	54.4	55.7	64.0	64.1
Vehicle Noise:	71.7	70.8	67.8	63.0	71.6	72.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	171	368	793
CNEL:	85	184	395	852

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: University Drive  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 52,900 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,364 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.99	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.25	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.20	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.2	67.5	61.4	70.0	70.6
Medium Trucks:	63.9	63.2	56.8	55.3	63.7	64.0
Heavy Trucks:	64.3	63.7	54.7	55.9	64.3	64.4
Vehicle Noise:	72.0	71.1	68.0	63.2	71.8	72.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	111	238	513	1,106
CNEL:	119	256	552	1,189

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: University Drive  
 Road Segment: Mesa to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 34,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,805 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.07	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.17	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.12	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.3	70.3	68.5	62.4	71.1	71.7	
Medium Trucks:	64.9	64.2	57.9	56.3	64.8	65.0	
Heavy Trucks:	65.3	64.7	55.7	56.9	65.3	65.4	
Vehicle Noise:	73.0	72.1	69.1	64.3	72.8	73.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	200	430	926
CNEL:	99	214	462	995

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Project Name: Irvine GP  
 Road Name: University Drive Job Number: 15937  
 Road Segment: MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 34,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,805 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.07	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.17	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.12	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.3	70.3	68.5	62.4	71.1	71.7
Medium Trucks:	64.9	64.2	57.9	56.3	64.8	65.0
Heavy Trucks:	65.3	64.7	55.7	56.9	65.3	65.4
Vehicle Noise:	73.0	72.1	69.1	64.3	72.8	73.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	200	430	926
CNEL:	99	214	462	995

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: University Drive  
 Road Segment: California Avenue to Mesa

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 34,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,805 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.07	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.17	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.12	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.3	70.3	68.5	62.4	71.1	71.7
Medium Trucks:	64.9	64.2	57.9	56.3	64.8	65.0
Heavy Trucks:	65.3	64.7	55.7	56.9	65.3	65.4
Vehicle Noise:	73.0	72.1	69.1	64.3	72.8	73.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	200	430	926
CNEL:	99	214	462	995

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: University Drive  
 Road Segment: Campus Drive to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,294 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.20	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.04	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.00	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.5	66.4	64.7	58.6	67.2	67.8	
Medium Trucks:	61.1	60.4	54.0	52.5	60.9	61.2	
Heavy Trucks:	61.5	60.9	51.9	53.1	61.5	61.6	
Vehicle Noise:	69.2	68.3	65.2	60.5	69.0	69.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	72	155	334	720
CNEL:	77	167	359	774



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing	Project Name: Irvine GP
Road Name: University Drive	Job Number: 15937
Road Segment: SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS															
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>															
Average Daily Traffic (Adt): 15,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,238 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15															
<b>Site Data</b>	<b>Vehicle Mix</b>															
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border: none;"> <tr> <td style="text-align: right;">Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td style="text-align: right;">Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td style="text-align: right;">Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </table>	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Autos:	77.5%	12.9%	9.6%	97.42%												
Medium Trucks:	84.8%	4.9%	10.3%	1.84%												
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%												
	<b>Noise Source Elevations (in feet)</b>															
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0															
	<b>Lane Equivalent Distance (in feet)</b>															
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814															

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.48	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-18.72	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-22.68	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.4	65.6	59.5	68.2	68.8	
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1	
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5	
Vehicle Noise:	70.1	69.2	66.2	61.4	69.9	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	107	229	494
CNEL:	53	114	247	531

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing Project Name: Irvine GP  
 Road Name: University Drive Job Number: 15937  
 Road Segment: SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,145 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float:right">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.91	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.33	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.29	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.1	64.4	58.3	67.0	67.6
Medium Trucks:	60.8	60.1	53.7	52.2	60.7	60.9
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	68.9	68.0	64.9	60.2	68.7	69.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	148	320	689
CNEL:	74	159	344	740

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: University Drive  
 Road Segment: San Joaquin to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,500 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,939 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.47	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.77	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.73	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.3	59.7	53.3	51.8	60.2	60.5
Heavy Trucks:	60.8	60.2	51.1	52.4	60.7	60.9
Vehicle Noise:	68.5	67.5	64.5	59.7	68.3	68.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	139	299	644
CNEL:	69	149	321	692

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: University Drive  
 Road Segment: Harvard Avenue to San Joaquin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,939 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.47	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.77	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.73	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.8	65.7	63.9	57.9	66.5	67.1	
Medium Trucks:	60.3	59.7	53.3	51.8	60.2	60.5	
Heavy Trucks:	60.8	60.2	51.1	52.4	60.7	60.9	
Vehicle Noise:	68.5	67.5	64.5	59.7	68.3	68.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	139	299	644
CNEL:	69	149	321	692

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Valley Oak Drive  
 Road Segment: Hawkcreek to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 4,300 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 355 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-6.91	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-24.15	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-28.10	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.0	60.0	58.2	52.2	60.8	61.4	
Medium Trucks:	54.6	53.9	47.6	46.0	54.5	54.7	
Heavy Trucks:	55.0	54.4	45.4	46.7	55.0	55.1	
Vehicle Noise:	62.7	61.8	58.8	54.0	62.5	63.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	43	92	199
CNEL:	21	46	99	214

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Valley Oak Drive  
 Road Segment: Irvine Center Drive to Oak Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 4,500 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 371 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 42.814				
Road Grade: 0.0%	Medium Trucks: 42.720				
Left View: -90.0 degrees	Heavy Trucks: 42.814				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-6.71	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-23.95	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-27.91	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.2	62.1	60.4	54.3	62.9	63.5	
Medium Trucks:	56.8	56.1	49.7	48.2	56.7	56.9	
Heavy Trucks:	57.2	56.6	47.6	48.8	57.2	57.3	
Vehicle Noise:	64.9	64.0	60.9	56.1	64.7	65.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	48	103	222
CNEL:	24	51	110	238

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Valley Oak Drive  
 Road Segment: Barranca Parkway to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 347 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-7.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-24.25	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-28.21	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.9	59.9	58.1	52.1	60.7	61.3	
Medium Trucks:	54.5	53.8	47.5	45.9	54.4	54.6	
Heavy Trucks:	54.9	54.3	45.3	46.6	54.9	55.0	
Vehicle Noise:	62.6	61.7	58.7	53.9	62.4	62.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	42	91	196
CNEL:	21	45	98	211

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Valley Oak Drive  
 Road Segment: Alton Parkway to Hawkcreek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	5,100 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	421 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-6.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-23.41	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-27.36	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.8	60.7	59.0	52.9	61.5	62.1
Medium Trucks:	55.4	54.7	48.3	46.8	55.2	55.5
Heavy Trucks:	55.8	55.2	46.1	47.4	55.8	55.9
Vehicle Noise:	63.5	62.6	59.5	54.7	63.3	63.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	48	104	223
CNEL:	24	52	111	240



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Von Karman Avenue  
 Road Segment: Marriott to Morse Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,900 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,807 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.62	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.62	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.58	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.8	64.0	57.9	66.6	67.2
Medium Trucks:	60.6	59.9	53.6	52.0	60.5	60.7
Heavy Trucks:	61.4	60.8	51.8	53.1	61.4	61.5
Vehicle Noise:	68.7	67.8	64.6	59.9	68.5	68.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	107	230	495
CNEL:	53	114	246	531

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Von Karman Avenue  
 Road Segment: Michelson Drive to Quartz

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,757 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.50	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.74	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.70	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.6	63.9	57.8	66.4	67.1
Medium Trucks:	60.5	59.8	53.4	51.9	60.4	60.6
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4
Vehicle Noise:	68.5	67.6	64.5	59.8	68.4	68.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	105	225	485
CNEL:	52	112	242	521

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Von Karman Avenue  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,964 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.98	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.21	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.1	64.4	58.3	66.9	67.5
Medium Trucks:	61.0	60.3	53.9	52.4	60.8	61.1
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	69.0	68.1	65.0	60.3	68.8	69.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	113	243	523
CNEL:	56	121	260	561

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Von Karman Avenue  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,200 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,162 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.40	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.84	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	84.25	-19.80	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.3	63.5	57.4	66.1	66.7
Medium Trucks:	60.1	59.4	53.0	51.5	60.0	60.2
Heavy Trucks:	60.9	60.3	51.3	52.5	60.9	61.0
Vehicle Noise:	68.2	67.3	64.1	59.4	68.0	68.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	255	549
CNEL:	59	127	273	589

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Von Karman Avenue  
 Road Segment: Main Street to Anchor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,906 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.85	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.34	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.0	64.2	58.2	66.8	67.4
Medium Trucks:	60.8	60.1	53.8	52.2	60.7	60.9
Heavy Trucks:	61.7	61.1	52.0	53.3	61.6	61.8
Vehicle Noise:	68.9	68.0	64.8	60.2	68.7	69.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	110	238	512
CNEL:	55	118	255	550

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Von Karman Avenue  
 Road Segment: Anchor to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,906 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.85	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.34	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.0	64.2	58.2	66.8	67.4
Medium Trucks:	60.8	60.1	53.8	52.2	60.7	60.9
Heavy Trucks:	61.7	61.1	52.0	53.3	61.6	61.8
Vehicle Noise:	68.9	68.0	64.8	60.2	68.7	69.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	110	238	512
CNEL:	55	118	255	550

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Von Karman Avenue  
 Road Segment: Morse to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,100 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,906 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.85	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.34	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.0	64.2	58.2	66.8	67.4
Medium Trucks:	60.8	60.1	53.8	52.2	60.7	60.9
Heavy Trucks:	61.7	61.1	52.0	53.3	61.6	61.8
Vehicle Noise:	68.9	68.0	64.8	60.2	68.7	69.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	110	238	512
CNEL:	55	118	255	550

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Von Karman Avenue  
 Road Segment: Martin to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,403 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.48	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.68	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.7	62.9	56.8	65.5	66.1
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6
Heavy Trucks:	60.3	59.7	50.7	52.0	60.3	60.4
Vehicle Noise:	67.6	66.7	63.5	58.8	67.4	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	90	194	418
CNEL:	45	97	208	448



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Von Karman Avenue  
 Road Segment: Campus Drive to Martin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,403 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.48	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.68	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.7	62.9	56.8	65.5	66.1
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6
Heavy Trucks:	60.3	59.7	50.7	52.0	60.3	60.4
Vehicle Noise:	67.6	66.7	63.5	58.8	67.4	67.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	90	194	418
CNEL:	45	97	208	448

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Von Karman Avenue  
 Road Segment: Dupont Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,403 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.48	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.68	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.7	62.9	56.8	65.5	66.1
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6
Heavy Trucks:	60.3	59.7	50.7	52.0	60.3	60.4
Vehicle Noise:	67.6	66.7	63.5	58.8	67.4	67.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	90	194	418
CNEL:	45	97	208	448

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Walnut Avenue  
 Road Segment: Jeffrey Road to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,782 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.68	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.64	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.8	65.7	63.9	57.9	66.5	67.1	
Medium Trucks:	60.5	59.9	53.5	52.0	60.4	60.6	
Heavy Trucks:	61.4	60.8	51.7	53.0	61.4	61.5	
Vehicle Noise:	68.6	67.7	64.6	59.9	68.4	68.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	106	227	490
CNEL:	53	113	244	526

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Walnut Avenue  
 Road Segment: Myford Road to Jamboree Road SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,683 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.31	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.93	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.88	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.5	65.5	63.7	57.6	66.3	66.9	
Medium Trucks:	60.3	59.6	53.2	51.7	60.2	60.4	
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2	
Vehicle Noise:	68.4	67.5	64.3	59.6	68.2	68.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	102	219	472
CNEL:	51	109	235	506

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Walnut Avenue  
 Road Segment: The Mall Street to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,700 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,543 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.07	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.31	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.26	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	65.1	63.3	57.3	65.9	66.5
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0
Heavy Trucks:	60.7	60.2	51.1	52.4	60.7	60.9
Vehicle Noise:	68.0	67.1	63.9	59.2	67.8	68.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	96	207	445
CNEL:	48	103	222	478

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Walnut Avenue  
 Road Segment: Harvard Avenue to The Mall Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,700 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,543 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.07	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.31	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.26	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.1	65.1	63.3	57.3	65.9	66.5	
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0	
Heavy Trucks:	60.7	60.2	51.1	52.4	60.7	60.9	
Vehicle Noise:	68.0	67.1	63.9	59.2	67.8	68.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	96	207	445
CNEL:	48	103	222	478

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Walnut Avenue  
 Road Segment: Franciscan Street to Ravenwood Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,800 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,469 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.48	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.9	64.9	63.1	57.0	65.7	66.3	
Medium Trucks:	59.7	59.0	52.7	51.1	59.6	59.8	
Heavy Trucks:	60.5	59.9	50.9	52.2	60.5	60.6	
Vehicle Noise:	67.8	66.9	63.7	59.0	67.6	68.0	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	93	200	431
CNEL:	46	100	214	462

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Walnut Avenue  
 Road Segment: Ravenwood Street to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,469 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.48	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.9	63.1	57.0	65.7	66.3
Medium Trucks:	59.7	59.0	52.7	51.1	59.6	59.8
Heavy Trucks:	60.5	59.9	50.9	52.2	60.5	60.6
Vehicle Noise:	67.8	66.9	63.7	59.0	67.6	68.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	93	200	431
CNEL:	46	100	214	462



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Walnut Avenue  
 Road Segment: Culver Drive to Franciscan Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,800 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,469 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.48	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.9	64.9	63.1	57.0	65.7	66.3	
Medium Trucks:	59.7	59.0	52.7	51.1	59.6	59.8	
Heavy Trucks:	60.5	59.9	50.9	52.2	60.5	60.6	
Vehicle Noise:	67.8	66.9	63.7	59.0	67.6	68.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	93	200	431
CNEL:	46	100	214	462

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Walnut Avenue  
 Road Segment: Peters Canyon Road to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,675 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.29	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.95	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.91	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.9	63.8	62.0	56.0	64.6	65.2	
Medium Trucks:	58.6	57.9	51.6	50.0	58.5	58.7	
Heavy Trucks:	59.4	58.9	49.8	51.1	59.4	59.6	
Vehicle Noise:	66.7	65.8	62.6	58.0	66.5	67.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	106	228	490
CNEL:	53	113	244	526

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing Project Name: Irvine GP  
 Road Name: Walnut Avenue Job Number: 15937  
 Road Segment: Jamboree Road NB Off-Ramp to Peters Canyon Road

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,675 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>  <b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
	VehicleType	Day	Evening	Night	Daily																
	Autos:	77.5%	12.9%	9.6%	97.42%																
	Medium Trucks:	84.8%	4.9%	10.3%	1.84%																
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Noise Source Elevations (in feet)</b>																					
Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float:right">Grade Adjustment: 0.0</span>																					
<b>Lane Equivalent Distance (in feet)</b>																					
Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.29	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.95	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.91	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	63.8	62.0	56.0	64.6	65.2
Medium Trucks:	58.6	57.9	51.6	50.0	58.5	58.7
Heavy Trucks:	59.4	58.9	49.8	51.1	59.4	59.6
Vehicle Noise:	66.7	65.8	62.6	58.0	66.5	67.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	106	228	490
CNEL:	53	113	244	526

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Walnut Avenue  
 Road Segment: Yale Avenue to Kazan Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,900 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 982 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.03	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.27	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.23	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.1	61.4	55.3	63.9	64.5
Medium Trucks:	57.9	57.3	50.9	49.4	57.8	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.0	65.1	62.0	57.3	65.8	66.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	329
CNEL:	35	76	164	353

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Walnut Avenue  
 Road Segment: Wisteria to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,900 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 982 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.03	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.27	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.23	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.1	61.4	55.3	63.9	64.5
Medium Trucks:	57.9	57.3	50.9	49.4	57.8	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.0	65.1	62.0	57.3	65.8	66.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	329
CNEL:	35	76	164	353

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing Project Name: Irvine GP  
 Road Name: Warner Avenue Job Number: 15937  
 Road Segment: Jamboree Road SB Off-ramp to Construction North

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,400 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,096 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos:	77.5%	12.9%	9.6%	97.42%
	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
	<b>Noise Source Elevations (in feet)</b>				
	Autos:	2.000			
	Medium Trucks:	4.000			
	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos:	57.786			
	Medium Trucks:	57.717			
	Heavy Trucks:	57.787			

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.93	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.4	64.6	58.6	67.2	67.8
Medium Trucks:	61.2	60.6	54.2	52.7	61.1	61.3
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	69.3	68.4	65.3	60.6	69.1	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	253	546
CNEL:	59	126	272	586

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Warner Avenue  
 Road Segment: Construction North to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,386 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.73	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.6	62.9	56.8	65.4	66.0
Medium Trucks:	59.4	58.8	52.4	50.9	59.3	59.6
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	67.5	66.6	63.5	58.8	67.3	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	89	192	414
CNEL:	44	96	206	445

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Warner Avenue  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 941 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.46	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.41	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.0	62.9	61.2	55.1	63.7	64.3
Medium Trucks:	57.8	57.1	50.7	49.2	57.6	57.9
Heavy Trucks:	58.6	58.0	49.0	50.2	58.6	58.7
Vehicle Noise:	65.8	64.9	61.8	57.1	65.6	66.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	149	320
CNEL:	34	74	159	343



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Warner Avenue  
 Road Segment: Santa Ynez to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 751 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.20	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.39	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.0	62.0	60.2	54.1	62.8	63.4
Medium Trucks:	56.8	56.1	49.7	48.2	56.7	56.9
Heavy Trucks:	57.6	57.0	48.0	49.2	57.6	57.7
Vehicle Noise:	64.9	63.9	60.8	56.1	64.7	65.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	59	128	275
CNEL:	30	64	137	295

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Warner Avenue  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 718 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.39	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.63	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.59	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.8	61.8	60.0	53.9	62.6	63.2	
Medium Trucks:	56.6	55.9	49.5	48.0	56.5	56.7	
Heavy Trucks:	57.4	56.8	47.8	49.0	57.4	57.5	
Vehicle Noise:	64.7	63.8	60.6	55.9	64.5	64.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	124	267
CNEL:	29	62	133	287

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: West Yale Loop  
 Road Segment: Alton Parkway to Blue Lake North

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 660 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.44	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.0	60.0	58.2	52.1	60.8	61.4	
Medium Trucks:	55.0	54.3	48.0	46.4	54.9	55.1	
Heavy Trucks:	56.3	55.7	46.7	47.9	56.3	56.4	
Vehicle Noise:	63.0	62.1	58.9	54.3	62.8	63.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	45	97	208
CNEL:	22	48	104	223

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: West Yale Loop  
 Road Segment: Eagle Run to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,000 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	660 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		57.786		
Left View:	-90.0 degrees	Medium Trucks:		57.717		
Right View:	90.0 degrees	Heavy Trucks:		57.787		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.44	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.0	60.0	58.2	52.1	60.8	61.4
Medium Trucks:	55.0	54.3	48.0	46.4	54.9	55.1
Heavy Trucks:	56.3	55.7	46.7	47.9	56.3	56.4
Vehicle Noise:	63.0	62.1	58.9	54.3	62.8	63.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	45	97	208
CNEL:	22	48	104	223

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: West Yale Loop  
 Road Segment: Thunder Run to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 578 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.82	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.02	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.4	59.4	57.6	51.6	60.2	60.8	
Medium Trucks:	54.4	53.7	47.4	45.8	54.3	54.5	
Heavy Trucks:	55.7	55.1	46.1	47.4	55.7	55.8	
Vehicle Noise:	62.4	61.6	58.3	53.7	62.3	62.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	41	88	191
CNEL:	20	44	95	204

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: West Yale Loop  
 Road Segment: Main Street to Timber Run

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 578 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
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Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.82	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.02	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.4	59.4	57.6	51.6	60.2	60.8
Medium Trucks:	54.4	53.7	47.4	45.8	54.3	54.5
Heavy Trucks:	55.7	55.1	46.1	47.4	55.7	55.8
Vehicle Noise:	62.4	61.6	58.3	53.7	62.3	62.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	41	88	191
CNEL:	20	44	95	204

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: West Yale Loop  
 Road Segment: Yale Avenue to Shorebird

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 470 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.72	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.91	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.5	58.5	56.7	50.7	59.3	59.9
Medium Trucks:	53.5	52.8	46.5	44.9	53.4	53.6
Heavy Trucks:	54.8	54.3	45.2	46.5	54.8	54.9
Vehicle Noise:	61.6	60.7	57.4	52.8	61.4	61.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	36	77	166
CNEL:	18	38	83	178

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: West Yale Loop  
 Road Segment: Warner Avenue to Stonecreek South

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 470 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.72	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.91	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.5	58.5	56.7	50.7	59.3	59.9
Medium Trucks:	53.5	52.8	46.5	44.9	53.4	53.6
Heavy Trucks:	54.8	54.3	45.2	46.5	54.8	54.9
Vehicle Noise:	61.6	60.7	57.4	52.8	61.4	61.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	36	77	166
CNEL:	18	38	83	178



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: West Yale Loop  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	5,500 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	454 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.87	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-22.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-26.07	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.4	58.3	56.6	50.5	59.1	59.7
Medium Trucks:	53.4	52.7	46.3	44.8	53.2	53.5
Heavy Trucks:	54.7	54.1	45.1	46.3	54.7	54.8
Vehicle Noise:	61.4	60.5	57.2	52.7	61.2	61.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	16	35	75	162
CNEL:	17	37	81	174

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: West Yale Loop  
 Road Segment: Stonecreek North to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 470 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
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FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.72	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.91	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	59.5	58.5	56.7	50.7	59.3	59.9	
Medium Trucks:	53.5	52.8	46.5	44.9	53.4	53.6	
Heavy Trucks:	54.8	54.3	45.2	46.5	54.8	54.9	
Vehicle Noise:	61.6	60.7	57.4	52.8	61.4	61.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	36	77	166
CNEL:	18	38	83	178

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: West Yale Loop  
 Road Segment: Birdsong to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 470 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.72	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.91	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	59.5	58.5	56.7	50.7	59.3	59.9	
Medium Trucks:	53.5	52.8	46.5	44.9	53.4	53.6	
Heavy Trucks:	54.8	54.3	45.2	46.5	54.8	54.9	
Vehicle Noise:	61.6	60.7	57.4	52.8	61.4	61.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	36	77	166
CNEL:	18	38	83	178

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Westwood  
 Road Segment: Yorktown to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,600 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 462 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 35 mph																					
Near/Far Lane Distance: 12 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 37.5 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 37.5 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 37.138																				
Left View: -90.0 degrees	Medium Trucks: 37.030																				
Right View: 90.0 degrees	Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-4.21	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-21.45	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-25.41	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.7	59.7	57.9	51.8	60.5	61.1
Medium Trucks:	55.0	54.3	47.9	46.4	54.8	55.1
Heavy Trucks:	56.8	56.2	47.2	48.4	56.8	56.9
Vehicle Noise:	62.9	62.1	58.6	54.2	62.8	63.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	27	57	124
CNEL:	13	28	61	132

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Westwood  
 Road Segment: Bryan Avenue to Leaf

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 297 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-6.13	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-23.37	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-27.33	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	58.8	57.7	56.0	49.9	58.5	59.1	
Medium Trucks:	53.0	52.4	46.0	44.5	52.9	53.1	
Heavy Trucks:	54.9	54.3	45.3	46.5	54.9	55.0	
Vehicle Noise:	61.0	60.1	56.7	52.3	60.9	61.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	20	43	92
CNEL:	10	21	46	98

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Yale Avenue  
 Road Segment: Deerfield Avenue to Winvale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 842 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.70	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-19.94	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-23.89	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.4	65.3	63.6	57.5	66.1	66.7	
Medium Trucks:	60.2	59.5	53.1	51.6	60.0	60.3	
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1	
Vehicle Noise:	68.2	67.3	64.2	59.5	68.0	68.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	60	129	278
CNEL:	30	64	138	298

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Yale Avenue  
 Road Segment: Hicks Canyon Drive to Meadowood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,500 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	619 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.04	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-21.27	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-25.23	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.0	62.2	56.2	64.8	65.4
Medium Trucks:	58.8	58.2	51.8	50.2	58.7	58.9
Heavy Trucks:	59.7	59.1	50.0	51.3	59.6	59.8
Vehicle Noise:	66.9	66.0	62.8	58.2	66.7	67.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	49	105	226
CNEL:	24	52	113	243

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Yale Avenue  
 Road Segment: Walnut Avenue to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,122 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 32.140 Medium Trucks: 32.016 Heavy Trucks: 32.141																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.45	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-18.69	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	84.25	-22.65	2.78	-1.20	-5.56	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	68.9
Medium Trucks:	62.4	61.7	55.3	53.8	62.2	62.5
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3
Vehicle Noise:	70.4	69.5	66.4	61.7	70.2	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	89	192	414
CNEL:	44	96	206	445



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Yale Avenue  
 Road Segment: Roosevelt to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,122 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.45	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.69	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.65	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.8	63.7	61.9	55.9	64.5	65.1	
Medium Trucks:	58.5	57.8	51.5	49.9	58.4	58.6	
Heavy Trucks:	59.4	58.8	49.7	51.0	59.3	59.5	
Vehicle Noise:	66.6	65.7	62.5	57.9	66.4	66.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	167	360
CNEL:	39	83	179	386

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Yale Avenue  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,500 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,031 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.82	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.01	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.3	61.6	55.5	64.1	64.7
Medium Trucks:	58.2	57.5	51.1	49.6	58.0	58.3
Heavy Trucks:	59.0	58.4	49.4	50.6	59.0	59.1
Vehicle Noise:	66.2	65.3	62.2	57.5	66.0	66.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	73	158	340
CNEL:	37	79	169	365

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Yale Avenue  
 Road Segment: West Yale Loop to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,900 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	734 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.53	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.49	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.9	61.9	60.1	54.0	62.7	63.3
Medium Trucks:	56.7	56.0	49.6	48.1	56.6	56.8
Heavy Trucks:	57.5	56.9	47.9	49.1	57.5	57.6
Vehicle Noise:	64.8	63.8	60.7	56.0	64.6	65.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	126	271
CNEL:	29	63	135	291

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Yale Avenue  
 Road Segment: Winvale Avenue to Karen Ann Lane

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 842 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.70	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.94	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.89	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.5	62.5	60.7	54.6	63.3	63.9	
Medium Trucks:	57.3	56.6	50.2	48.7	57.2	57.4	
Heavy Trucks:	58.1	57.5	48.5	49.7	58.1	58.2	
Vehicle Noise:	65.3	64.4	61.3	56.6	65.2	65.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	297
CNEL:	32	69	148	319

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Yale Avenue  
 Road Segment: Karen Ann Lane to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,200 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 842 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.70	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.94	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.89	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.5	62.5	60.7	54.6	63.3	63.9	
Medium Trucks:	57.3	56.6	50.2	48.7	57.2	57.4	
Heavy Trucks:	58.1	57.5	48.5	49.7	58.1	58.2	
Vehicle Noise:	65.3	64.4	61.3	56.6	65.2	65.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	297
CNEL:	32	69	148	319

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Yale Avenue  
 Road Segment: Trabuco Road to Southwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,000 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	743 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.44	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.0	61.9	60.1	54.1	62.7	63.3
Medium Trucks:	56.7	56.1	49.7	48.1	56.6	56.8
Heavy Trucks:	57.6	57.0	47.9	49.2	57.6	57.7
Vehicle Noise:	64.8	63.9	60.7	56.1	64.6	65.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	59	127	273
CNEL:	29	63	136	293

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Yale Avenue  
 Road Segment: Southwood to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,000 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	743 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.44	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.0	61.9	60.1	54.1	62.7	63.3
Medium Trucks:	56.7	56.1	49.7	48.1	56.6	56.8
Heavy Trucks:	57.6	57.0	47.9	49.2	57.6	57.7
Vehicle Noise:	64.8	63.9	60.7	56.1	64.6	65.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	59	127	273
CNEL:	29	63	136	293

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Yale Avenue  
 Road Segment: Northwood to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,500 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	701 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.73	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.69	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.7	61.7	59.9	53.8	62.5	63.1
Medium Trucks:	56.5	55.8	49.4	47.9	56.4	56.6
Heavy Trucks:	57.3	56.7	47.7	48.9	57.3	57.4
Vehicle Noise:	64.6	63.7	60.5	55.8	64.4	64.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	57	122	263
CNEL:	28	61	131	282



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Yale Avenue  
 Road Segment: Bryan Avenue to Monticello

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,500 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	701 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.73	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.69	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.7	61.7	59.9	53.8	62.5	63.1
Medium Trucks:	56.5	55.8	49.4	47.9	56.4	56.6
Heavy Trucks:	57.3	56.7	47.7	48.9	57.3	57.4
Vehicle Noise:	64.6	63.7	60.5	55.8	64.4	64.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	57	122	263
CNEL:	28	61	131	282

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Yale Avenue  
 Road Segment: Irvine Boulevard to Park Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,200 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	594 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.41	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.0	60.9	59.2	53.1	61.7	62.3	
Medium Trucks:	55.8	55.1	48.7	47.2	55.6	55.9	
Heavy Trucks:	56.6	56.0	47.0	48.2	56.6	56.7	
Vehicle Noise:	63.8	62.9	59.8	55.1	63.6	64.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	51	109	236
CNEL:	25	54	117	253

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Existing  
 Road Name: Yale Avenue  
 Road Segment: University Drive to Royce

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,100 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 91 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-12.37	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	79.45	-29.61	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	84.25	-33.57	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.8	54.7	53.0	46.9	55.5	56.1
Medium Trucks:	49.6	48.9	42.5	41.0	49.4	49.7
Heavy Trucks:	50.4	49.8	40.8	42.0	50.4	50.5
Vehicle Noise:	57.6	56.7	53.6	48.9	57.4	57.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	16	34	73
CNEL:	8	17	36	78

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Existing  
 Road Name: Yale Court  
 Road Segment: Arborwood to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,000 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	495 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-2.45	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-19.69	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-23.65	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.9	55.9	54.1	48.0	56.7	57.3
Medium Trucks:	51.8	51.1	44.7	43.2	51.6	51.9
Heavy Trucks:	55.0	54.4	45.3	46.6	54.9	55.1
Vehicle Noise:	59.8	59.0	55.1	51.1	59.6	60.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	16	35	76
CNEL:	8	17	38	81

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Ada  
 Road Segment: Barranca Parway to Marine Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 0 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-42.27	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-59.51	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-63.47	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	24.9	23.8	22.0	16.0	24.6	25.2	
Medium Trucks:	18.9	18.2	11.8	10.3	18.7	19.0	
Heavy Trucks:	20.2	19.6	10.5	11.8	20.1	20.3	
Vehicle Noise:	26.9	26.0	22.7	18.2	26.7	27.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	0	0	0	0
CNEL:	0	0	0	1

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Ada  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,232 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,587 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.67	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.63	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.8	63.8	62.0	55.9	64.6	65.2
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2
Vehicle Noise:	66.8	65.9	62.7	58.1	66.7	67.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	81	174	374
CNEL:	40	86	186	400

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Enterprise to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 56,884 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,693 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.31	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-12.93	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-16.89	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	69.5	67.8	61.7	70.4	71.0
Medium Trucks:	64.2	63.5	57.1	55.6	64.1	64.3
Heavy Trucks:	64.6	64.0	55.0	56.2	64.6	64.7
Vehicle Noise:	72.3	71.4	68.3	63.6	72.1	72.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	116	250	539	1,161
CNEL:	125	269	579	1,248

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: I-5 NB Off-Ramp to Technology Drive West

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 60,594 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,999 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.58	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-12.66	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-16.61	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.3	70.2	68.5	62.4	71.0	71.6
Medium Trucks:	64.9	64.2	57.8	56.3	64.7	65.0
Heavy Trucks:	65.3	64.7	55.7	56.9	65.3	65.4
Vehicle Noise:	73.0	72.1	69.0	64.2	72.8	73.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	265	570	1,228
CNEL:	132	284	613	1,320



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: East Yale Loop to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 30,534 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,519 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.63	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.59	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.7	60.7	69.3	69.9
Medium Trucks:	63.1	62.5	56.1	54.5	63.0	63.2
Heavy Trucks:	63.5	63.0	53.9	55.2	63.5	63.7
Vehicle Noise:	71.3	70.3	67.3	62.5	71.1	71.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	158	341	735
CNEL:	79	170	367	790

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Gateway Boulevard to Enterprise

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,234 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,907 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.23	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.01	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.97	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.5	65.7	59.6	68.3	68.9	
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2	
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6	
Vehicle Noise:	70.2	69.3	66.3	61.5	70.0	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	182	392	844
CNEL:	91	195	421	907

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Jeffrey Road to Royal Oak

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,495 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,938 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.47	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.73	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.4	65.6	59.5	68.2	68.8
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	70.1	69.2	66.2	61.4	69.9	70.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	287	617
CNEL:	66	143	308	663

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Daimler Street to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,780 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,962 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos:	77.5%	12.9%	9.6%	97.42%
	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
	<b>Noise Source Elevations (in feet)</b>				
	Autos:	2.000			
	Medium Trucks:	4.000			
	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos:	57.786			
	Medium Trucks:	57.717			
	Heavy Trucks:	57.787			

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.52	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.68	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.4	65.6	59.6	68.2	68.8	
Medium Trucks:	62.0	61.4	55.0	53.5	61.9	62.2	
Heavy Trucks:	62.5	61.9	52.8	54.1	62.4	62.6	
Vehicle Noise:	70.2	69.3	66.2	61.4	70.0	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	134	289	622
CNEL:	67	144	310	669

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,362 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,010 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.62	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.62	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.57	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	68.9
Medium Trucks:	62.1	61.5	55.1	53.6	62.0	62.3
Heavy Trucks:	62.6	62.0	52.9	54.2	62.5	62.7
Vehicle Noise:	70.3	69.4	66.3	61.5	70.1	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	294	633
CNEL:	68	146	315	680

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: West Yale Loop to Lake Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,892 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,971 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.70	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.66	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.7	59.6	68.2	68.8
Medium Trucks:	62.1	61.4	55.0	53.5	61.9	62.2
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	70.2	69.3	66.2	61.4	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	135	290	624
CNEL:	67	145	311	671

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Technology Drive West to Ada

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,191 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,233 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.69	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.55	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.51	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.4	68.3	66.6	60.5	69.1	69.7
Medium Trucks:	63.0	62.3	55.9	54.4	62.9	63.1
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	71.1	70.2	67.1	62.4	70.9	71.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	426	919
CNEL:	99	213	458	987

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Creek Road to East Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,067 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,903 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.39	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.85	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.81	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0
Heavy Trucks:	62.3	61.7	52.7	54.0	62.3	62.4
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	283	610
CNEL:	66	141	304	655



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Red Hill Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,216 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,750 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.22	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.17	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.0	66.9	65.2	59.1	67.7	68.3	
Medium Trucks:	61.5	60.9	54.5	53.0	61.4	61.7	
Heavy Trucks:	62.0	61.4	52.3	53.6	61.9	62.1	
Vehicle Noise:	69.7	68.8	65.7	60.9	69.5	69.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	124	268	577
CNEL:	62	134	288	620

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Lake Road to Creek Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,890 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,888 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.35	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.89	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.84	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.2	65.5	59.4	68.0	68.7
Medium Trucks:	61.9	61.2	54.8	53.3	61.8	62.0
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.0	69.1	66.0	61.3	69.8	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	282	607
CNEL:	65	140	303	652

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Telemetry to Banting

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,313 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,676 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.40	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.36	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	65.0	58.9	67.5	68.1
Medium Trucks:	61.4	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	61.8	61.2	52.1	53.4	61.8	61.9
Vehicle Noise:	69.5	68.6	65.5	60.7	69.3	69.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	121	260	560
CNEL:	60	130	279	602

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Irvine Boulevard to Commercentre

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,324 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,244 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.70	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.54	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.49	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.0	67.9	66.2	60.1	68.7	69.4	
Medium Trucks:	62.6	61.9	55.5	54.0	62.5	62.7	
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1	
Vehicle Noise:	70.7	69.8	66.7	62.0	70.5	71.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	196	421	908
CNEL:	98	210	453	975

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Jenner to Telemetry

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,130 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,661 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.44	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.40	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	64.9	58.9	67.5	68.1
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4
Heavy Trucks:	61.7	61.1	52.1	53.4	61.7	61.8
Vehicle Noise:	69.4	68.5	65.5	60.7	69.2	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	120	259	557
CNEL:	60	129	278	598

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Irvine Center Drive to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,165 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,489 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.55	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.69	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.64	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.8	65.0	59.0	67.6	68.2
Medium Trucks:	61.4	60.7	54.4	52.8	61.3	61.5
Heavy Trucks:	61.8	61.3	52.2	53.5	61.8	61.9
Vehicle Noise:	69.6	68.6	65.6	60.8	69.4	69.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	164	353	761
CNEL:	82	176	379	817

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Sand Canyon Avenue to Hospital

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 36,781 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,034 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.41	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.83	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.78	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.7	70.6	68.8	62.8	71.4	72.0	
Medium Trucks:	65.2	64.6	58.2	56.7	65.1	65.4	
Heavy Trucks:	65.7	65.1	56.0	57.3	65.6	65.8	
Vehicle Noise:	73.4	72.4	69.4	64.6	73.2	73.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	210	453	976
CNEL:	105	226	487	1,048

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Laguna Canyon Road to Jenner

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,926 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,644 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.49	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.44	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.6	64.9	58.8	67.4	68.1
Medium Trucks:	61.3	60.6	54.2	52.7	61.2	61.4
Heavy Trucks:	61.7	61.1	52.1	53.3	61.7	61.8
Vehicle Noise:	69.4	68.5	65.4	60.7	69.2	69.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	119	257	553
CNEL:	59	128	276	594



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan Project Name: Irvine GP  
 Road Name: Alton Parkway Job Number: 15937  
 Road Segment: Technology Drive East to Barranca Pkwy/Muirlands Blvd

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 34,162 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,818 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.09	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.15	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.10	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	62.0	61.3	54.9	53.4	61.8	62.1
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	70.1	69.2	66.1	61.3	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	178	384	827
CNEL:	89	191	412	888

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Royal Oak to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,001 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,650 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.47	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.43	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.7	64.9	58.8	67.5	68.1
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4
Heavy Trucks:	61.7	61.1	52.1	53.3	61.7	61.8
Vehicle Noise:	69.4	68.5	65.5	60.7	69.2	69.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	119	257	555
CNEL:	60	128	277	596

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Banting to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 18,390 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,517 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.84	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.79	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.3	64.5	58.5	67.1	67.7
Medium Trucks:	60.9	60.3	53.9	52.3	60.8	61.0
Heavy Trucks:	61.3	60.8	51.7	53.0	61.3	61.4
Vehicle Noise:	69.1	68.1	65.1	60.3	68.9	69.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	113	243	524
CNEL:	56	121	262	563

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan	Project Name: Irvine GP
Road Name: Alton Parkway	Job Number: 15937
Road Segment: Barranca Pkwy/Muirlands Blvd to Jeronimo Road	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 33,762 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,785 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border: none;"> <thead> <tr> <th style="text-align: left;">VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.04	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.20	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.15	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0
Heavy Trucks:	62.3	61.7	52.7	54.0	62.3	62.4
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	381	820
CNEL:	88	190	409	881

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Ada to Technology Drive East

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,909 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,715 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.93	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.31	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.27	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.2	65.4	59.4	68.0	68.6
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	69.9	69.0	66.0	61.2	69.7	70.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	374	806
CNEL:	87	187	402	866

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,845 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,472 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.73	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.97	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.92	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.2	66.2	64.4	58.3	67.0	67.6	
Medium Trucks:	60.8	60.1	53.8	52.2	60.7	60.9	
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3	
Vehicle Noise:	68.9	68.0	65.0	60.2	68.7	69.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	111	239	514
CNEL:	55	119	256	552

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Jeronimo Road to Hughes

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,838 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,544 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.65	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.59	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.55	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	66.9	65.1	59.1	67.7	68.3
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6
Heavy Trucks:	61.9	61.3	52.3	53.6	61.9	62.0
Vehicle Noise:	69.6	68.7	65.7	60.9	69.5	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	358	772
CNEL:	83	179	385	829

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Hughes to Morgan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,010 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,393 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.38	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.86	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.81	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.6	64.9	58.8	67.4	68.0
Medium Trucks:	61.3	60.6	54.2	52.7	61.1	61.4
Heavy Trucks:	61.7	61.1	52.0	53.3	61.7	61.8
Vehicle Noise:	69.4	68.5	65.4	60.6	69.2	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	344	741
CNEL:	80	172	370	796



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Morgan to Toledo Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,745 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,041 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.69	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.55	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.50	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	65.9	64.2	58.1	66.7	67.3
Medium Trucks:	60.6	59.9	53.5	52.0	60.4	60.7
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1
Vehicle Noise:	68.7	67.8	64.7	59.9	68.5	69.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	309	667
CNEL:	72	154	332	716

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: San Marino to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,868 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,052 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.48	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	66.0	64.2	58.1	66.8	67.4
Medium Trucks:	60.6	59.9	53.5	52.0	60.5	60.7
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1
Vehicle Noise:	68.7	67.8	64.8	60.0	68.5	69.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	310	669
CNEL:	72	155	334	719

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Jamboree Road to Murphy Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,978 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,896 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.37	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.87	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.83	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.6	63.8	57.8	66.4	67.0
Medium Trucks:	60.2	59.6	53.2	51.7	60.1	60.4
Heavy Trucks:	60.7	60.1	51.0	52.3	60.6	60.8
Vehicle Noise:	68.4	67.5	64.4	59.6	68.2	68.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	137	295	635
CNEL:	68	147	316	682

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Hospital to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,303 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,840 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 47.329				
Road Grade: 0.0%	Medium Trucks: 47.244				
Left View: -90.0 degrees	Heavy Trucks: 47.329				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.24	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.00	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.95	0.25	-1.20	-5.34	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.5	68.4	66.7	60.6	69.2	69.8	
Medium Trucks:	63.1	62.4	56.0	54.5	62.9	63.2	
Heavy Trucks:	63.5	62.9	53.9	55.1	63.5	63.6	
Vehicle Noise:	71.2	70.3	67.2	62.4	71.0	71.5	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	151	324	699
CNEL:	75	162	349	751

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,026 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,817 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.19	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.05	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.01	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.4	68.4	66.6	60.6	69.2	69.8
Medium Trucks:	63.0	62.3	56.0	54.4	62.9	63.1
Heavy Trucks:	63.4	62.8	53.8	55.1	63.4	63.5
Vehicle Noise:	71.1	70.2	67.2	62.4	70.9	71.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	149	322	693
CNEL:	74	160	346	745

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Murphy Avenue to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,029 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,817 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.19	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.05	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.01	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.5	65.4	63.7	57.6	66.2	66.8	
Medium Trucks:	60.1	59.4	53.0	51.5	59.9	60.2	
Heavy Trucks:	60.5	59.9	50.9	52.1	60.5	60.6	
Vehicle Noise:	68.2	67.3	64.2	59.4	68.0	68.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	286	617
CNEL:	66	143	308	663

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Foster to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,872 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,052 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.48	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	66.0	64.2	58.1	66.8	67.4
Medium Trucks:	60.6	59.9	53.5	52.0	60.5	60.7
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1
Vehicle Noise:	68.7	67.8	64.8	60.0	68.5	69.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	310	669
CNEL:	72	155	334	719

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Fairbanks to Foster

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,257 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,919 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.42	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.82	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.77	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.8	66.5	67.1
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4
Heavy Trucks:	60.7	60.1	51.1	52.3	60.7	60.8
Vehicle Noise:	68.4	67.5	64.5	59.7	68.2	68.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	138	297	640
CNEL:	69	148	319	687



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Toledo Way to Berteau

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,840 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,802 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.05	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.5	65.4	63.6	57.6	66.2	66.8	
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1	
Heavy Trucks:	60.4	59.8	50.8	52.1	60.4	60.5	
Vehicle Noise:	68.1	67.2	64.2	59.4	68.0	68.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	285	613
CNEL:	66	142	306	659

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Pacifica to Meridian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,738 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,546 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.52	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.76	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.71	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.3	61.6	55.3	53.7	62.2	62.4
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.4	69.5	66.5	61.7	70.2	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	134	289	622
CNEL:	67	144	310	669

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Bertea to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,315 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,758 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.04	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.20	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.15	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.3	65.3	63.5	57.5	66.1	66.7	
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0	
Heavy Trucks:	60.3	59.7	50.7	52.0	60.3	60.4	
Vehicle Noise:	68.0	67.1	64.1	59.3	67.8	68.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	280	604
CNEL:	65	140	301	648

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Meridian to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,783 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,467 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.74	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.98	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.94	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.5	62.7	56.7	65.3	65.9
Medium Trucks:	59.1	58.5	52.1	50.5	59.0	59.2
Heavy Trucks:	59.5	59.0	49.9	51.2	59.5	59.7
Vehicle Noise:	67.3	66.3	63.3	58.5	67.1	67.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	115	248	535
CNEL:	57	124	267	575

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Paseo Westpark to San Marino

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,914 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,643 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.25	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.49	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.45	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.1	65.0	63.2	57.2	65.8	66.4	
Medium Trucks:	59.6	58.9	52.6	51.0	59.5	59.7	
Heavy Trucks:	60.0	59.4	50.4	51.7	60.0	60.1	
Vehicle Noise:	67.7	66.8	63.8	59.0	67.6	68.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	124	268	577
CNEL:	62	134	288	620

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Alton Parkway  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,294 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,344 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-18.36	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-22.32	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.1	62.4	56.3	64.9	65.5
Medium Trucks:	58.7	58.1	51.7	50.2	58.6	58.9
Heavy Trucks:	59.2	58.6	49.5	50.8	59.1	59.3
Vehicle Noise:	66.9	66.0	62.9	58.1	66.7	67.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	109	234	505
CNEL:	54	117	252	542

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Astor  
 Road Segment: Lynx to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,138 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,579 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 37.138				
Road Grade: 0.0%	Medium Trucks: 37.030				
Left View: -90.0 degrees	Heavy Trucks: 37.139				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	1.79	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-15.44	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-19.40	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.1	61.3	55.3	63.9	64.5
Medium Trucks:	58.7	58.0	51.7	50.1	58.6	58.8
Heavy Trucks:	61.2	60.6	51.5	52.8	61.1	61.3
Vehicle Noise:	66.7	65.8	62.2	58.0	66.5	66.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	102	220
CNEL:	23	50	109	234

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Astor  
 Road Segment: Cadence to Lynx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,633 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,290 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 37.138				
Road Grade: 0.0%		Medium Trucks: 37.030				
Left View: -90.0 degrees		Heavy Trucks: 37.139				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	0.91	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-16.32	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-20.28	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.3	62.2	60.5	54.4	63.0	63.6
Medium Trucks:	57.8	57.1	50.8	49.2	57.7	57.9
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	65.8	64.9	61.3	57.1	65.6	66.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	41	89	192
CNEL:	20	44	95	204



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bake Parkway  
 Road Segment: I-5 NB Off-Ramp to Rockfield Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 91,457 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 7,545 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	6.37	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-10.87	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-14.83	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	74.5	73.4	71.6	65.6	74.2	74.8	
Medium Trucks:	68.0	67.4	61.0	59.4	67.9	68.1	
Heavy Trucks:	68.4	67.9	58.8	60.1	68.4	68.6	
Vehicle Noise:	76.2	75.2	72.2	67.4	76.0	76.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	250	538	1,159	2,496
CNEL:	268	578	1,245	2,682

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Bake Parkway  
 Road Segment: Muirlands Boulevard to Jeronimo Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 60,885 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,023 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.60	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-12.64	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-16.59	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.9	69.8	68.1	62.0	70.6	71.3
Medium Trucks:	64.5	63.8	57.4	55.9	64.4	64.6
Heavy Trucks:	64.9	64.3	55.3	56.5	64.9	65.0
Vehicle Noise:	72.6	71.7	68.6	63.9	72.4	72.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	262	564	1,215
CNEL:	131	281	606	1,305

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bake Parkway  
 Road Segment: Rockfield Boulevard to Muirlands Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 66,745 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,506 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	5.00	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-12.24	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-16.19	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.1	72.0	70.3	64.2	72.8	73.4	
Medium Trucks:	66.7	66.0	59.6	58.1	66.5	66.8	
Heavy Trucks:	67.1	66.5	57.5	58.7	67.1	67.2	
Vehicle Noise:	74.8	73.9	70.8	66.0	74.6	75.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	202	436	939	2,023
CNEL:	217	468	1,009	2,174

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bake Parkway  
 Road Segment: Jeronimo Road to Toledo Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 49,574 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,090 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.49	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.0	69.0	67.2	61.1	69.8	70.4	
Medium Trucks:	63.6	62.9	56.5	55.0	63.5	63.7	
Heavy Trucks:	64.0	63.4	54.4	55.6	64.0	64.1	
Vehicle Noise:	71.7	70.8	67.7	63.0	71.5	72.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	228	492	1,059
CNEL:	114	245	528	1,138

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bake Parkway  
 Road Segment: Toledo Way to Cromwell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,682 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,769 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.35	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.88	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.84	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.8	60.8	69.4	70.0
Medium Trucks:	63.2	62.6	56.2	54.6	63.1	63.3
Heavy Trucks:	63.6	63.1	54.0	55.3	63.6	63.7
Vehicle Noise:	71.4	70.4	67.4	62.6	71.2	71.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	466	1,003
CNEL:	108	232	500	1,078

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bake Parkway  
 Road Segment: Cromwell to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,725 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,772 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">VehicleType</th> <th style="text-align: center;">Day</th> <th style="text-align: center;">Evening</th> <th style="text-align: center;">Night</th> <th style="text-align: center;">Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td style="text-align: center;">77.5%</td> <td style="text-align: center;">12.9%</td> <td style="text-align: center;">9.6%</td> <td style="text-align: center;">97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td style="text-align: center;">84.8%</td> <td style="text-align: center;">4.9%</td> <td style="text-align: center;">10.3%</td> <td style="text-align: center;">1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td style="text-align: center;">86.5%</td> <td style="text-align: center;">2.7%</td> <td style="text-align: center;">10.8%</td> <td style="text-align: center;">0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.36	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.88	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.84	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.8	60.8	69.4	70.0
Medium Trucks:	63.2	62.6	56.2	54.6	63.1	63.3
Heavy Trucks:	63.6	63.1	54.0	55.3	63.6	63.8
Vehicle Noise:	71.4	70.4	67.4	62.6	71.2	71.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	466	1,004
CNEL:	108	232	501	1,079

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bake Parkway  
 Road Segment: Research Drive to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,918 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,221 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.06	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.18	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.14	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.4	66.3	64.5	58.5	67.1	67.7	
Medium Trucks:	60.9	60.3	53.9	52.3	60.8	61.0	
Heavy Trucks:	61.3	60.8	51.7	53.0	61.3	61.5	
Vehicle Noise:	69.1	68.1	65.1	60.3	68.9	69.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	152	327	705
CNEL:	76	163	352	758

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bake Parkway  
 Road Segment: Irvine Center Drive to Research Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,085 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 750 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.66	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-20.90	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-24.85	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.6	61.6	59.8	53.8	62.4	63.0	
Medium Trucks:	56.2	55.5	49.2	47.6	56.1	56.3	
Heavy Trucks:	56.6	56.0	47.0	48.3	56.6	56.7	
Vehicle Noise:	64.3	63.4	60.4	55.6	64.1	64.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	342
CNEL:	37	79	170	367



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Bake Parkway  
 Road Segment: Lake Forest Drive to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,286 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	519 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	84.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 74.458				
Road Grade:	0.0%	Medium Trucks: 74.404				
Left View:	-90.0 degrees	Heavy Trucks: 74.458				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.26	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-22.50	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-26.45	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.0	60.0	58.2	52.2	60.8	61.4
Medium Trucks:	54.6	53.9	47.6	46.0	54.5	54.7
Heavy Trucks:	55.0	54.4	45.4	46.7	55.0	55.1
Vehicle Noise:	62.7	61.8	58.8	54.0	62.5	63.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	124	267
CNEL:	29	62	133	287

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Banting  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,452 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 367 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-22.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-26.40	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	56.8	55.8	54.0	48.0	56.6	57.2	
Medium Trucks:	51.1	50.4	44.0	42.5	50.9	51.2	
Heavy Trucks:	52.9	52.3	43.3	44.5	52.9	53.0	
Vehicle Noise:	59.1	58.2	54.8	50.4	58.9	59.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	53	114
CNEL:	12	26	56	121

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Pacifica to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,831 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,049 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.90	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.8	67.0	60.9	69.6	70.2
Medium Trucks:	63.2	62.5	56.2	54.6	63.1	63.3
Heavy Trucks:	63.2	62.7	53.6	54.9	63.2	63.4
Vehicle Noise:	71.4	70.5	67.5	62.7	71.2	71.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	349	752
CNEL:	81	174	375	809

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Banting to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,806 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,129 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.46	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.78	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.73	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	68.9	67.2	61.1	69.7	70.3
Medium Trucks:	63.4	62.7	56.4	54.8	63.3	63.5
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	71.6	70.6	67.7	62.8	71.4	71.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	358	771
CNEL:	83	179	385	830

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: I-5 HOV Ramp to Technology Drive West

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,598 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,699 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.52	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.76	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.71	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.0	68.0	66.2	60.1	68.8	69.4	
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5	
Heavy Trucks:	62.4	61.9	52.8	54.1	62.4	62.5	
Vehicle Noise:	70.6	69.7	66.7	61.8	70.4	70.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	143	308	664
CNEL:	71	154	331	714

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Technology Drive West to Ada

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,700 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,955 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.09	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.15	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.10	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.6	66.8	60.7	69.4	70.0
Medium Trucks:	63.0	62.3	56.0	54.4	62.9	63.1
Heavy Trucks:	63.0	62.5	53.4	54.7	63.0	63.2
Vehicle Noise:	71.2	70.3	67.3	62.4	71.0	71.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	338	729
CNEL:	78	169	364	784

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Irvine Center Drive to I-5 HOV Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,207 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,667 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.84	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.80	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.9	66.1	60.0	68.7	69.3
Medium Trucks:	62.3	61.7	55.3	53.7	62.2	62.4
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5
Vehicle Noise:	70.5	69.6	66.6	61.8	70.3	70.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	141	304	655
CNEL:	70	152	327	705

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,675 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,201 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.64	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.59	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.1	67.3	61.3	69.9	70.5
Medium Trucks:	63.5	62.9	56.5	55.0	63.4	63.6
Heavy Trucks:	63.6	63.0	53.9	55.2	63.5	63.7
Vehicle Noise:	71.7	70.8	67.8	63.0	71.5	72.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	170	366	789
CNEL:	85	183	394	848



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: East Yale Loop to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,229 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,081 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.36	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.88	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.83	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	68.8	67.1	61.0	69.6	70.2
Medium Trucks:	63.3	62.6	56.3	54.7	63.2	63.4
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4
Vehicle Noise:	71.5	70.5	67.6	62.7	71.3	71.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	164	353	760
CNEL:	82	176	379	817

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: West Yale Loop to Lake Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,495 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,103 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.41	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.83	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.79	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	68.9	67.1	61.1	69.7	70.3
Medium Trucks:	63.3	62.7	56.3	54.8	63.2	63.4
Heavy Trucks:	63.4	62.8	53.7	55.0	63.3	63.5
Vehicle Noise:	71.5	70.6	67.6	62.8	71.3	71.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	355	765
CNEL:	82	177	382	823

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Ada to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,456 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,348 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.88	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.31	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	69.4	67.6	61.5	70.2	70.8
Medium Trucks:	63.8	63.1	56.8	55.2	63.7	63.9
Heavy Trucks:	63.8	63.3	54.2	55.5	63.8	63.9
Vehicle Noise:	72.0	71.1	68.1	63.2	71.8	72.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	382	823
CNEL:	89	191	411	886

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Lake Road to Creek Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,501 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,939 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.05	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.19	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.14	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.8	60.7	69.3	69.9
Medium Trucks:	63.0	62.3	55.9	54.4	62.9	63.1
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	71.2	70.2	67.3	62.4	71.0	71.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	72	156	336	725
CNEL:	78	168	362	780

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Red Hill Avenue to Armstrong Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,978 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,711 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.87	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-14.37	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-18.32	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.5	71.5	69.7	63.7	72.3	72.9
Medium Trucks:	65.9	65.3	58.9	57.4	65.8	66.0
Heavy Trucks:	66.0	65.4	56.3	57.6	65.9	66.1
Vehicle Noise:	74.1	73.2	70.2	65.4	73.9	74.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	183	393	847	1,825
CNEL:	196	423	911	1,963

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Discovery/Herchel to Banting

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,685 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,789 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.30	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.53	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.49	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.2	66.4	60.4	69.0	69.6
Medium Trucks:	62.6	62.0	55.6	54.1	62.5	62.7
Heavy Trucks:	62.7	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	70.8	69.9	66.9	62.1	70.6	71.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	148	319	687
CNEL:	74	159	343	739

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Lyon to East Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,895 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,806 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.49	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.45	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.2	66.5	60.4	69.0	69.6
Medium Trucks:	62.7	62.0	55.6	54.1	62.6	62.8
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.9	69.9	67.0	62.1	70.7	71.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	149	321	691
CNEL:	74	160	345	744

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Creek Road to Lyon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,564 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,779 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.51	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.2	68.2	66.4	60.3	69.0	69.6	
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7	
Heavy Trucks:	62.6	62.0	53.0	54.3	62.6	62.7	
Vehicle Noise:	70.8	69.9	66.9	62.0	70.6	71.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	147	318	684
CNEL:	74	159	342	736



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 38,982 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,216 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.25	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.99	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.94	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	69.5	67.7	61.7	70.3	70.9
Medium Trucks:	63.9	63.3	56.9	55.4	63.8	64.0
Heavy Trucks:	64.0	63.4	54.3	55.6	63.9	64.1
Vehicle Noise:	72.1	71.2	68.2	63.4	71.9	72.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	107	231	499	1,074
CNEL:	116	249	536	1,156

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Sand Canyon Avenue to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,260 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,589 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.01	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.7	65.9	59.8	68.5	69.1
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2
Heavy Trucks:	62.1	61.6	52.5	53.8	62.1	62.3
Vehicle Noise:	70.3	69.4	66.4	61.5	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	137	295	635
CNEL:	68	147	317	683

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Armstrong Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,440 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,006 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.96	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.28	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.24	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.2	67.4	61.4	70.0	70.6
Medium Trucks:	63.6	63.0	56.6	55.1	63.5	63.8
Heavy Trucks:	63.7	63.1	54.1	55.3	63.7	63.8
Vehicle Noise:	71.8	70.9	67.9	63.1	71.6	72.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	103	221	477	1,027
CNEL:	110	238	513	1,105

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 18,496 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,526 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.99	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.18	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.5	65.7	59.7	68.3	68.9	
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.1	
Heavy Trucks:	62.0	61.4	52.3	53.6	62.0	62.1	
Vehicle Noise:	70.1	69.2	66.2	61.4	69.9	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	287	618
CNEL:	66	143	308	665

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Jamboree Road to Construction Circle

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,130 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,403 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.99	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.25	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.21	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	62.3	61.6	55.2	53.7	62.1	62.4
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.4	69.5	66.6	61.7	70.2	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	188	405	872
CNEL:	94	202	436	938

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Santa Rosa to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,283 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,333 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.86	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.38	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.34	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.1	61.5	55.1	53.6	62.0	62.2
Heavy Trucks:	62.2	61.6	52.5	53.8	62.1	62.3
Vehicle Noise:	70.3	69.4	66.4	61.6	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	184	397	855
CNEL:	92	198	427	920

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: FedEx to Discovery/Herchel

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,244 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,258 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.83	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.02	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.6	64.9	58.8	67.4	68.1
Medium Trucks:	61.1	60.4	54.1	52.5	61.0	61.2
Heavy Trucks:	61.1	60.5	51.5	52.8	61.1	61.2
Vehicle Noise:	69.3	68.4	65.4	60.5	69.1	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	117	252	543
CNEL:	58	126	271	584

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Jeffrey Road to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,857 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,308 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.89	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.85	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.9	66.8	65.0	59.0	67.6	68.2	
Medium Trucks:	61.3	60.6	54.2	52.7	61.2	61.4	
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4	
Vehicle Noise:	69.5	68.5	65.6	60.7	69.3	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	120	259	558
CNEL:	60	129	278	600



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Laguna Canyon Road to FedEx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,848 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,225 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.94	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.18	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.14	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.5	64.8	58.7	67.3	67.9
Medium Trucks:	61.0	60.3	54.0	52.4	60.9	61.1
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1
Vehicle Noise:	69.2	68.2	65.3	60.4	69.0	69.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	115	248	534
CNEL:	57	124	266	574

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Pullman Street to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 36,153 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,983 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.92	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-15.31	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-19.27	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.6	70.5	68.8	62.7	71.3	71.9
Medium Trucks:	65.0	64.3	58.0	56.4	64.9	65.1
Heavy Trucks:	65.0	64.4	55.4	56.6	65.0	65.1
Vehicle Noise:	73.2	72.2	69.3	64.4	73.0	73.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	158	340	732	1,578
CNEL:	170	366	788	1,697

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Construction Circle to Fire Station

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,175 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,077 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.35	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.89	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.84	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	67.2	65.4	59.4	68.0	68.6	
Medium Trucks:	61.6	61.0	54.6	53.0	61.5	61.7	
Heavy Trucks:	61.7	61.1	52.0	53.3	61.6	61.8	
Vehicle Noise:	69.8	68.9	65.9	61.1	69.6	70.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	170	367	791
CNEL:	85	183	395	851

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Fire Station to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,175 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,077 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.35	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.89	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.84	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.2	65.4	59.4	68.0	68.6
Medium Trucks:	61.6	61.0	54.6	53.0	61.5	61.7
Heavy Trucks:	61.7	61.1	52.0	53.3	61.6	61.8
Vehicle Noise:	69.8	68.9	65.9	61.1	69.6	70.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	170	367	791
CNEL:	85	183	395	851

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Paseo Westpark to Santa Rosa

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,294 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,087 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos: 77.5% 12.9% 9.6% 97.42% Medium Trucks: 84.8% 4.9% 10.3% 1.84% Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
	<b>Noise Source Elevations (in feet)</b>				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0				
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.37	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.87	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.82	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.2	65.4	59.4	68.0	68.6	
Medium Trucks:	61.6	61.0	54.6	53.1	61.5	61.8	
Heavy Trucks:	61.7	61.1	52.1	53.3	61.7	61.8	
Vehicle Noise:	69.8	68.9	66.0	61.1	69.6	70.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	171	368	794
CNEL:	85	184	396	854

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Barranca Parkway  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,160 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,911 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.01	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.25	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.20	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.8	65.0	59.0	67.6	68.2
Medium Trucks:	61.3	60.6	54.2	52.7	61.1	61.4
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4
Vehicle Noise:	69.5	68.5	65.6	60.7	69.2	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	347	749
CNEL:	81	173	374	805

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bay Tree  
 Road Segment: Trabuco Road to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,723 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 225 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-7.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-24.58	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-28.54	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.7	53.6	51.9	45.8	54.4	55.1
Medium Trucks:	48.9	48.3	41.9	40.3	48.8	49.0
Heavy Trucks:	50.8	50.2	41.2	42.4	50.8	50.9
Vehicle Noise:	56.9	56.1	52.6	48.2	56.8	57.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	18	38	82
CNEL:	9	19	41	87

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Beacon  
 Road Segment: Ridge Valley to Benchmark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,119 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	257 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-6.09	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-23.32	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-27.28	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.3	55.2	53.5	47.4	56.0	56.6
Medium Trucks:	50.8	50.1	43.8	42.2	50.7	50.9
Heavy Trucks:	53.3	52.7	43.7	44.9	53.3	53.4
Vehicle Noise:	58.8	57.9	54.3	50.1	58.6	59.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	14	30	66
CNEL:	7	15	32	70



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Benchmark (LN Street)  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,829 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 151 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-8.40	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-25.64	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-29.60	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	54.0	52.9	51.2	45.1	53.7	54.3	
Medium Trucks:	48.5	47.8	41.5	39.9	48.4	48.6	
Heavy Trucks:	51.0	50.4	41.3	42.6	50.9	51.1	
Vehicle Noise:	56.5	55.6	52.0	47.8	56.3	56.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	10	21	46
CNEL:	5	11	23	49

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bison Avenue  
 Road Segment: SR-73 NB Off-Ramp to California Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,221 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,163 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.40	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.84	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.79	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.6	64.8	58.7	67.4	68.0
Medium Trucks:	61.4	60.7	54.3	52.8	61.3	61.5
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	69.4	68.5	65.4	60.7	69.3	69.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	120	259	558
CNEL:	60	129	278	598

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bonita Canyon Drive  
 Road Segment: MacArthur Boulevard to SR-73

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 30,318 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,501 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 75.0 feet Centerline Dist. to Observer: 75.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 70.413 Medium Trucks: 70.356 Heavy Trucks: 70.413																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.57	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.67	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-19.62	-2.33	-1.20	-5.25	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.2	65.4	59.4	68.0	68.6
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	62.2	61.6	52.6	53.9	62.2	62.3
Vehicle Noise:	69.9	69.0	66.0	61.2	69.7	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	72	155	335	721
CNEL:	77	167	359	774

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Bonita Canyon Drive  
 Road Segment: Turtle Ridge to Shady Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,645 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,703 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height:	0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	75.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	75.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 70.413				
Road Grade:	0.0%	Medium Trucks: 70.356				
Left View:	-90.0 degrees	Heavy Trucks: 70.413				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.10	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.33	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-21.29	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.5	63.7	57.7	66.3	66.9
Medium Trucks:	60.1	59.5	53.1	51.6	60.0	60.3
Heavy Trucks:	60.6	60.0	50.9	52.2	60.5	60.7
Vehicle Noise:	68.3	67.4	64.3	59.5	68.1	68.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	120	259	558
CNEL:	60	129	278	599

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bonita Canyon Drive  
 Road Segment: Newport Coast Drive to Turtle Ridge

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,987 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,566 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 75.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	70.413			
Road Grade: 0.0%	Medium Trucks:	70.356			
Left View: -90.0 degrees	Heavy Trucks:	70.413			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.46	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.70	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-21.65	-2.33	-1.20	-5.25	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	65.1	63.4	57.3	65.9	66.6
Medium Trucks:	59.8	59.1	52.7	51.2	59.7	59.9
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3
Vehicle Noise:	67.9	67.0	63.9	59.2	67.7	68.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	245	528
CNEL:	57	122	263	567

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bonita Canyon Drive  
 Road Segment: SR-73 NB Off-Ramp to Newport Coast Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,778 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,467 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 75.0 feet Centerline Dist. to Observer: 75.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 70.413 Medium Trucks: 70.356 Heavy Trucks: 70.413																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.75	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.98	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-21.94	-2.33	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.9	64.9	63.1	57.0	65.7	66.3	
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6	
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0	
Vehicle Noise:	67.6	66.7	63.7	58.9	67.4	67.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	109	234	505
CNEL:	54	117	252	542

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Bosque  
 Road Segment: Cadence to Great Park Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,850 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 978 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 37.138				
Road Grade: 0.0%		Medium Trucks: 37.030				
Left View: -90.0 degrees		Heavy Trucks: 37.139				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.29	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-17.53	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-21.48	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.1	61.0	59.3	53.2	61.8	62.4
Medium Trucks:	56.6	55.9	49.6	48.0	56.5	56.7
Heavy Trucks:	59.1	58.5	49.5	50.7	59.1	59.2
Vehicle Noise:	64.6	63.7	60.1	55.9	64.4	64.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	16	34	74	160
CNEL:	17	37	79	170

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bosque  
 Road Segment: Irvine Boulevard to Benchmark (LN Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,686 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 634 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-2.17	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-19.41	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-23.36	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.2	59.2	57.4	51.3	60.0	60.6	
Medium Trucks:	54.7	54.1	47.7	46.1	54.6	54.8	
Heavy Trucks:	57.2	56.6	47.6	48.8	57.2	57.3	
Vehicle Noise:	62.7	61.9	58.2	54.0	62.6	63.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	26	55	120
CNEL:	13	27	59	127



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bosque  
 Road Segment: Benchmark to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,750 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 639 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-2.13	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-19.37	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-23.33	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.3	59.2	57.4	51.4	60.0	60.6
Medium Trucks:	54.8	54.1	47.7	46.2	54.6	54.9
Heavy Trucks:	57.2	56.6	47.6	48.9	57.2	57.3
Vehicle Noise:	62.8	61.9	58.3	54.1	62.6	63.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	26	56	120
CNEL:	13	28	59	128

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bosque  
 Road Segment: Great Park Boulevard to Beacon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,880 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 155 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-8.28	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-25.52	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-29.48	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.1	53.0	51.3	45.2	53.8	54.4
Medium Trucks:	48.6	47.9	41.6	40.0	48.5	48.7
Heavy Trucks:	51.1	50.5	41.5	42.7	51.1	51.2
Vehicle Noise:	56.6	55.7	52.1	47.9	56.4	56.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	10	22	47
CNEL:	5	11	23	50

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Bosque  
 Road Segment: Beacon to S 5th Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1,524 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	126 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		37.138		
Left View:	-90.0 degrees	Medium Trucks:		37.030		
Right View:	90.0 degrees	Heavy Trucks:		37.139		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-9.20	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-26.43	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-30.39	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.2	52.1	50.4	44.3	52.9	53.5
Medium Trucks:	47.7	47.0	40.7	39.1	47.6	47.8
Heavy Trucks:	50.2	49.6	40.5	41.8	50.1	50.3
Vehicle Noise:	55.7	54.8	51.2	47.0	55.5	55.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	19	41
CNEL:	4	9	20	43

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Bryan Avenue  
 Road Segment: Jamboree Road to Market Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,684 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,789 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.66	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.62	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	64.0	57.9	66.5	67.1
Medium Trucks:	60.5	59.9	53.5	52.0	60.4	60.7
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5
Vehicle Noise:	68.6	67.7	64.6	59.9	68.4	68.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	106	228	491
CNEL:	53	114	245	527

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bryan Avenue  
 Road Segment: Market Place to El Camino Real

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,735 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,793 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.59	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.61	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	64.0	57.9	66.5	67.1
Medium Trucks:	60.6	59.9	53.5	52.0	60.4	60.7
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5
Vehicle Noise:	68.6	67.7	64.6	59.9	68.4	68.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	106	228	492
CNEL:	53	114	245	528

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bryan Avenue  
 Road Segment: Rubicon to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,735 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,793 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">VehicleType</th> <th style="text-align: center;">Day</th> <th style="text-align: center;">Evening</th> <th style="text-align: center;">Night</th> <th style="text-align: center;">Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td style="text-align: center;">77.5%</td> <td style="text-align: center;">12.9%</td> <td style="text-align: center;">9.6%</td> <td style="text-align: center;">97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td style="text-align: center;">84.8%</td> <td style="text-align: center;">4.9%</td> <td style="text-align: center;">10.3%</td> <td style="text-align: center;">1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td style="text-align: center;">86.5%</td> <td style="text-align: center;">2.7%</td> <td style="text-align: center;">10.8%</td> <td style="text-align: center;">0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.59	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.61	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.8	65.7	64.0	57.9	66.5	67.1	
Medium Trucks:	60.6	59.9	53.5	52.0	60.4	60.7	
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5	
Vehicle Noise:	68.6	67.7	64.6	59.9	68.4	68.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	106	228	492
CNEL:	53	114	245	528

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bryan Avenue  
 Road Segment: El Camino Real to Rubicon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,735 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,793 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.59	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.61	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	64.0	57.9	66.5	67.1
Medium Trucks:	60.6	59.9	53.5	52.0	60.4	60.7
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5
Vehicle Noise:	68.6	67.7	64.6	59.9	68.4	68.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	106	228	492
CNEL:	53	114	245	528

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Bryan Avenue  
 Road Segment: Eastwood to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,981 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 988 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.20	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.1	61.4	55.3	64.0	64.6
Medium Trucks:	58.0	57.3	50.9	49.4	57.9	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.0	65.1	62.0	57.3	65.9	66.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	154	331
CNEL:	35	76	165	355



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bryan Avenue  
 Road Segment: Westwood to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,001 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 990 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.99	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.19	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.2	61.4	55.3	64.0	64.6
Medium Trucks:	58.0	57.3	50.9	49.4	57.9	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.1	65.1	62.0	57.3	65.9	66.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	154	331
CNEL:	36	77	165	355

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Bryan Avenue  
 Road Segment: Culver Drive to Westwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,292 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,014 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.89	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.08	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.3	61.5	55.4	64.1	64.7
Medium Trucks:	58.1	57.4	51.0	49.5	58.0	58.2
Heavy Trucks:	58.9	58.3	49.3	50.5	58.9	59.0
Vehicle Noise:	66.2	65.3	62.1	57.4	66.0	66.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	73	156	337
CNEL:	36	78	168	361

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Bryan Avenue  
 Road Segment: Yale Avenue to Eastwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,130 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 918 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.52	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.9	62.8	61.1	55.0	63.6	64.2
Medium Trucks:	57.7	57.0	50.6	49.1	57.5	57.8
Heavy Trucks:	58.5	57.9	48.9	50.1	58.5	58.6
Vehicle Noise:	65.7	64.8	61.7	57.0	65.5	66.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	68	146	315
CNEL:	34	73	157	338

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Cadence  
 Road Segment: Pusan to Chinon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,989 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 412 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.29	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-22.53	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-26.49	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	60.8	59.0	53.0	61.6	62.2
Medium Trucks:	55.8	55.2	48.8	47.3	55.7	55.9
Heavy Trucks:	57.1	56.6	47.5	48.8	57.1	57.2
Vehicle Noise:	63.9	63.0	59.7	55.1	63.7	64.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	31	66	142
CNEL:	15	33	71	152

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Cadence  
 Road Segment: Bosque to Pusan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,049 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 417 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.24	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-22.48	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-26.44	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	60.8	59.1	53.0	61.6	62.2
Medium Trucks:	55.9	55.2	48.9	47.3	55.8	56.0
Heavy Trucks:	57.2	56.6	47.6	48.8	57.2	57.3
Vehicle Noise:	63.9	63.0	59.7	55.2	63.7	64.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	31	66	143
CNEL:	15	33	71	153

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Cadence  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,822 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 398 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.44	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-22.68	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-26.64	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.7	60.6	58.9	52.8	61.4	62.0	
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8	
Heavy Trucks:	57.0	56.4	47.4	48.6	57.0	57.1	
Vehicle Noise:	63.7	62.8	59.5	55.0	63.5	64.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	30	64	139
CNEL:	15	32	69	149

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Cadence  
 Road Segment: Chinon to Merit

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,575 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 130 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-10.30	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-27.54	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-31.50	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	56.8	55.8	54.0	48.0	56.6	57.2	
Medium Trucks:	50.8	50.2	43.8	42.2	50.7	50.9	
Heavy Trucks:	52.1	51.5	42.5	43.8	52.1	52.2	
Vehicle Noise:	58.9	58.0	54.7	50.1	58.7	59.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	14	31	66
CNEL:	7	15	33	70

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Cadence  
 Road Segment: Merit to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,397 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 115 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-10.82	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-28.06	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-32.02	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.3	55.3	53.5	47.4	56.1	56.7
Medium Trucks:	50.3	49.6	43.3	41.7	50.2	50.4
Heavy Trucks:	51.6	51.0	42.0	43.2	51.6	51.7
Vehicle Noise:	58.3	57.4	54.2	49.6	58.1	58.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	13	28	61
CNEL:	7	14	30	65



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: California Avenue  
 Road Segment: University Drive to Academy Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,529 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,281 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.36	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.60	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.56	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.9	62.8	61.1	55.0	63.6	64.2
Medium Trucks:	57.9	57.2	50.8	49.3	57.8	58.0
Heavy Trucks:	59.2	58.6	49.6	50.8	59.2	59.3
Vehicle Noise:	65.9	65.0	61.7	57.2	65.7	66.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	70	150	324
CNEL:	35	75	161	347

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: California Avenue  
 Road Segment: Campus Drive to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,756 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 805 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 40 mph																					
Near/Far Lane Distance: 48 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 62.5 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 62.5 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 57.786																				
Left View: -90.0 degrees	Medium Trucks: 57.717																				
Right View: 90.0 degrees	Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.38	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.62	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.58	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	60.8	59.1	53.0	61.6	62.2
Medium Trucks:	55.9	55.2	48.8	47.3	55.7	56.0
Heavy Trucks:	57.2	56.6	47.5	48.8	57.2	57.3
Vehicle Noise:	63.9	63.0	59.7	55.2	63.7	64.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	51	110	238
CNEL:	25	55	118	255

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: California Avenue  
 Road Segment: Theory to Bison Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,438 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 779 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.76	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.72	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.7	60.7	58.9	52.9	61.5	62.1	
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8	
Heavy Trucks:	57.0	56.4	47.4	48.7	57.0	57.1	
Vehicle Noise:	63.7	62.9	59.6	55.0	63.6	64.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	233
CNEL:	25	54	116	249

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Campus Drive  
 Road Segment: Carlson Avenue to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,465 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,266 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 42.814				
Road Grade: 0.0%		Medium Trucks: 42.720				
Left View: -90.0 degrees		Heavy Trucks: 42.814				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.14	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-16.09	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-20.05	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	70.0	68.2	62.2	70.8	71.4
Medium Trucks:	64.6	64.0	57.6	56.0	64.5	64.7
Heavy Trucks:	65.0	64.4	55.4	56.7	65.0	65.1
Vehicle Noise:	72.8	71.8	68.8	64.0	72.6	73.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	343	740
CNEL:	79	171	369	795

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Campus Drive  
 Road Segment: University Drive to Bridge Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,499 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,599 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.74	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.46	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.7	68.6	66.9	60.8	69.4	70.0	
Medium Trucks:	63.3	62.6	56.2	54.7	63.1	63.4	
Heavy Trucks:	63.7	63.1	54.1	55.3	63.7	63.8	
Vehicle Noise:	71.4	70.5	67.4	62.6	71.2	71.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	348	751
CNEL:	81	174	374	807

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Campus Drive  
 Road Segment: Jamboree Road to Carlson Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,851 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,380 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.36	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.88	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.84	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.3	66.5	60.4	69.1	69.7
Medium Trucks:	62.9	62.2	55.8	54.3	62.8	63.0
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4
Vehicle Noise:	71.0	70.1	67.0	62.3	70.8	71.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	153	329	708
CNEL:	76	164	353	761

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Campus Drive  
 Road Segment: Stanford Court to Berkeley Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,338 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,255 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.12	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.07	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.3	60.2	68.8	69.4
Medium Trucks:	62.6	62.0	55.6	54.1	62.5	62.8
Heavy Trucks:	63.1	62.5	53.4	54.7	63.0	63.2
Vehicle Noise:	70.8	69.9	66.8	62.0	70.6	71.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	147	317	683
CNEL:	73	158	341	734

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Campus Drive  
 Road Segment: California Avenue to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,438 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,181 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.98	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.22	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.9	66.1	60.1	68.7	69.3
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0
Vehicle Noise:	70.6	69.7	66.7	61.9	70.4	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	310	668
CNEL:	72	155	333	718



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Campus Drive  
 Road Segment: Berkeley Avenue to Cornell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,044 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,736 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.25	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.21	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.9	65.1	59.1	67.7	68.3
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6
Heavy Trucks:	61.9	61.3	52.3	53.6	61.9	62.0
Vehicle Noise:	69.6	68.7	65.7	60.9	69.4	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	124	266	574
CNEL:	62	133	286	616

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Campus Drive  
 Road Segment: Martin to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,957 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,316 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.41	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4
Heavy Trucks:	60.7	60.1	51.1	52.4	60.7	60.8
Vehicle Noise:	68.4	67.5	64.5	59.7	68.2	68.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	221	477
CNEL:	51	110	238	513

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan	Project Name: Irvine GP
Road Name: Campus Drive	Job Number: 15937
Road Segment: Culver Drive to Paseo Montoya (Turtle Rock Drive)	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,713 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 1,296 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 50 mph																					
Near/Far Lane Distance: 48 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 62.5 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 62.5 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 57.786																				
Left View: -90.0 degrees	Medium Trucks: 57.717																				
Right View: 90.0 degrees	Heavy Trucks: 57.787																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.48	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.6	63.8	57.8	66.4	67.0
Medium Trucks:	60.2	59.6	53.2	51.7	60.1	60.4
Heavy Trucks:	60.7	60.1	51.0	52.3	60.6	60.8
Vehicle Noise:	68.4	67.5	64.4	59.6	68.2	68.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	102	219	472
CNEL:	51	109	235	507

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Campus Drive  
 Road Segment: Von Karman Avenue to Teller Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,785 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,137 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.85	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.09	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.04	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.1	65.0	63.3	57.2	65.8	66.5	
Medium Trucks:	59.7	59.0	52.6	51.1	59.6	59.8	
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2	
Vehicle Noise:	67.8	66.9	63.8	59.1	67.6	68.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	93	201	433
CNEL:	46	100	216	465

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Campus Drive  
 Road Segment: MacArthur Boulevard to Martin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,788 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,137 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.85	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.09	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.04	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	65.0	63.3	57.2	65.8	66.5
Medium Trucks:	59.7	59.0	52.6	51.1	59.6	59.8
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2
Vehicle Noise:	67.8	66.9	63.8	59.1	67.6	68.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	93	201	433
CNEL:	46	100	216	465

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Campus Drive  
 Road Segment: Teller Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,365 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 938 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.69	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.93	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.88	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.3	64.2	62.4	56.4	65.0	65.6	
Medium Trucks:	58.8	58.2	51.8	50.3	58.7	59.0	
Heavy Trucks:	59.2	58.7	49.6	50.9	59.2	59.4	
Vehicle Noise:	67.0	66.0	63.0	58.2	66.8	67.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	177	380
CNEL:	41	88	190	409

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Carlson Avenue  
 Road Segment: Michelson Drive to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,044 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,076 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.09	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.33	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.28	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.9	64.8	63.0	57.0	65.6	66.2	
Medium Trucks:	59.4	58.8	52.4	50.9	59.3	59.5	
Heavy Trucks:	59.8	59.3	50.2	51.5	59.8	60.0	
Vehicle Noise:	67.6	66.6	63.6	58.8	67.4	67.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	90	194	417
CNEL:	45	97	208	448

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Chinon  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,025 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	332 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-4.19	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-21.42	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-25.38	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.2	54.1	52.4	46.3	54.9	55.5
Medium Trucks:	50.0	49.4	43.0	41.4	49.9	50.1
Heavy Trucks:	53.2	52.6	43.6	44.9	53.2	53.3
Vehicle Noise:	58.1	57.2	53.3	49.4	57.9	58.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	13	27	59
CNEL:	6	13	29	62



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Creek Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,622 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 381 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-3.59	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-20.82	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-24.78	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	52.9	51.8	50.1	44.0	52.6	53.2	
Medium Trucks:	47.7	47.1	40.7	39.2	47.6	47.8	
Heavy Trucks:	50.9	50.4	41.3	42.6	50.9	51.1	
Vehicle Noise:	55.8	54.9	51.0	47.1	55.6	56.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	15	32	69
CNEL:	7	16	34	73

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 58,147 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,797 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.99	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.25	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.21	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.9	70.8	69.0	63.0	71.6	72.2	
Medium Trucks:	65.3	64.6	58.2	56.7	65.1	65.4	
Heavy Trucks:	65.3	64.7	55.7	56.9	65.3	65.4	
Vehicle Noise:	73.4	72.5	69.6	64.7	73.2	73.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	138	298	642	1,383
CNEL:	149	320	690	1,488

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 60,031 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,953 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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Autos:	77.5%	12.9%	9.6%	97.42%																	
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Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.13	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.11	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.07	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.0	70.9	69.2	63.1	71.7	72.4	
Medium Trucks:	65.4	64.7	58.4	56.8	65.3	65.5	
Heavy Trucks:	65.4	64.8	55.8	57.1	65.4	65.5	
Vehicle Noise:	73.6	72.7	69.7	64.8	73.4	73.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	141	304	656	1,412
CNEL:	152	327	705	1,520

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 60,471 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,989 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.16	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.08	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.04	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.0	71.0	69.2	63.2	71.8	72.4
Medium Trucks:	65.4	64.8	58.4	56.9	65.3	65.5
Heavy Trucks:	65.5	64.9	55.8	57.1	65.4	65.6
Vehicle Noise:	73.6	72.7	69.7	64.9	73.4	73.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	142	306	659	1,419
CNEL:	153	329	709	1,527

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Scottsdale Drive to I-5 SB Off- Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 60,310 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,976 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.05	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.0	71.0	69.2	63.1	71.8	72.4
Medium Trucks:	65.4	64.7	58.4	56.8	65.3	65.5
Heavy Trucks:	65.5	64.9	55.8	57.1	65.4	65.6
Vehicle Noise:	73.6	72.7	69.7	64.9	73.4	73.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	142	305	658	1,417
CNEL:	152	328	707	1,524

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: I-405 NB Off-Ramp to San Leandro

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 57,001 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,703 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.90	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.34	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.29	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.8	70.7	69.0	62.9	71.5	72.1	
Medium Trucks:	65.2	64.5	58.1	56.6	65.1	65.3	
Heavy Trucks:	65.2	64.6	55.6	56.8	65.2	65.3	
Vehicle Noise:	73.4	72.4	69.5	64.6	73.2	73.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	136	294	633	1,364
CNEL:	147	316	681	1,468

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: San Leandro to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 53,202 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,389 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.60	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.64	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.59	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.4	68.7	62.6	71.2	71.8
Medium Trucks:	64.9	64.2	57.8	56.3	64.8	65.0
Heavy Trucks:	64.9	64.3	55.3	56.5	64.9	65.0
Vehicle Noise:	73.1	72.1	69.2	64.3	72.9	73.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	130	281	605	1,303
CNEL:	140	302	651	1,402

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Harvard Avenue to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 52,683 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,346 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.56	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.68	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.64	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.4	70.4	68.6	62.6	71.2	71.8
Medium Trucks:	64.8	64.2	57.8	56.3	64.7	64.9
Heavy Trucks:	64.9	64.3	55.2	56.5	64.8	65.0
Vehicle Noise:	73.0	72.1	69.1	64.3	72.8	73.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	129	279	601	1,295
CNEL:	139	300	646	1,393



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Trabuco Road to Farwell Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 61,294 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,057 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.22	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.02	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-16.98	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.5	71.4	69.7	63.6	72.2	72.9
Medium Trucks:	65.9	65.2	58.9	57.3	65.8	66.0
Heavy Trucks:	65.9	65.3	56.3	57.6	65.9	66.0
Vehicle Noise:	74.1	73.2	70.2	65.3	73.9	74.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	145	313	674	1,453
CNEL:	156	337	725	1,563

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 51,629 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,259 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.47	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.77	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.72	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.4	70.3	68.5	62.5	71.1	71.7	
Medium Trucks:	64.7	64.1	57.7	56.2	64.6	64.9	
Heavy Trucks:	64.8	64.2	55.2	56.4	64.8	64.9	
Vehicle Noise:	72.9	72.0	69.1	64.2	72.7	73.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	128	275	593	1,277
CNEL:	137	296	638	1,374

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Main Street to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 50,144 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,137 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.34	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.89	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.85	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.2	70.2	68.4	62.3	71.0	71.6
Medium Trucks:	64.6	63.9	57.6	56.0	64.5	64.7
Heavy Trucks:	64.6	64.1	55.0	56.3	64.6	64.8
Vehicle Noise:	72.8	71.9	68.9	64.1	72.6	73.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	125	270	581	1,253
CNEL:	135	290	626	1,348

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Warner Avenue to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 48,921 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,036 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.24	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.00	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.96	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	70.1	68.3	62.2	70.9	71.5
Medium Trucks:	64.5	63.8	57.5	55.9	64.4	64.6
Heavy Trucks:	64.5	64.0	54.9	56.2	64.5	64.7
Vehicle Noise:	72.7	71.8	68.8	63.9	72.5	73.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	265	572	1,232
CNEL:	133	286	615	1,326

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Walnut Avenue to Scottsdale Dive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 48,508 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,002 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.20	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.04	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.99	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.1	70.0	68.3	62.2	70.8	71.4	
Medium Trucks:	64.5	63.8	57.4	55.9	64.4	64.6	
Heavy Trucks:	64.5	63.9	54.9	56.1	64.5	64.6	
Vehicle Noise:	72.7	71.7	68.8	63.9	72.5	72.9	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	264	569	1,225
CNEL:	132	284	612	1,318

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,184 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,893 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.08	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.16	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.11	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.0	69.9	68.1	62.1	70.7	71.3
Medium Trucks:	64.4	63.7	57.3	55.8	64.2	64.5
Heavy Trucks:	64.4	63.8	54.8	56.0	64.4	64.5
Vehicle Noise:	72.5	71.6	68.7	63.8	72.3	72.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	120	259	558	1,203
CNEL:	129	279	601	1,294

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Shady Canyon Drive to Palo Verde

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,206 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,245 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.69	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.55	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.51	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.2	69.2	67.4	61.3	70.0	70.6	
Medium Trucks:	63.6	62.9	56.6	55.0	63.5	63.7	
Heavy Trucks:	63.6	63.1	54.0	55.3	63.6	63.8	
Vehicle Noise:	71.8	70.9	67.9	63.0	71.6	72.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	172	371	799
CNEL:	86	185	399	860

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Deerfield Avenue to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,819 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,698 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.86	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.38	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.34	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.7	67.9	61.9	70.5	71.1
Medium Trucks:	64.1	63.5	57.1	55.6	64.0	64.2
Heavy Trucks:	64.2	63.6	54.5	55.8	64.1	64.3
Vehicle Noise:	72.3	71.4	68.4	63.6	72.1	72.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	116	250	540	1,162
CNEL:	125	269	580	1,251



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Sandburg Way to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 43,901 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,622 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.77	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.47	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.43	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.6	67.8	61.8	70.4	71.0
Medium Trucks:	64.0	63.4	57.0	55.5	63.9	64.2
Heavy Trucks:	64.1	63.5	54.4	55.7	64.1	64.2
Vehicle Noise:	72.2	71.3	68.3	63.5	72.0	72.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	247	532	1,146
CNEL:	123	266	572	1,233

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 43,101 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,556 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.69	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.55	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.51	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	69.5	67.7	61.7	70.3	70.9
Medium Trucks:	64.0	63.3	56.9	55.4	63.8	64.1
Heavy Trucks:	64.0	63.4	54.4	55.6	64.0	64.1
Vehicle Noise:	72.1	71.2	68.3	63.4	71.9	72.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	244	526	1,133
CNEL:	122	262	566	1,218

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Palo Verde to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,255 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,001 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.00	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.7	68.7	66.9	60.8	69.5	70.1	
Medium Trucks:	63.1	62.4	56.1	54.5	63.0	63.2	
Heavy Trucks:	63.1	62.6	53.5	54.8	63.1	63.3	
Vehicle Noise:	71.3	70.4	67.4	62.5	71.1	71.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	344	740
CNEL:	80	172	370	796

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: University Drive to Sandburg Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 40,605 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,350 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.43	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.81	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.77	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.3	69.2	67.5	61.4	70.0	70.7	
Medium Trucks:	63.7	63.0	56.7	55.1	63.6	63.8	
Heavy Trucks:	63.7	63.1	54.1	55.4	63.7	63.8	
Vehicle Noise:	71.9	71.0	68.0	63.1	71.7	72.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	109	234	505	1,088
CNEL:	117	252	543	1,171

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Farwell Avenue to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 47,503 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,919 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.11	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.13	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.08	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.4	70.3	68.6	62.5	71.1	71.7	
Medium Trucks:	64.8	64.1	57.8	56.2	64.7	64.9	
Heavy Trucks:	64.8	64.2	55.2	56.5	64.8	64.9	
Vehicle Noise:	73.0	72.1	69.1	64.2	72.8	73.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	264	569	1,226
CNEL:	132	284	612	1,319

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Campus Drive to High School

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,178 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,315 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.38	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.86	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.81	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.2	67.4	61.4	70.0	70.6
Medium Trucks:	63.7	63.0	56.6	55.1	63.5	63.8
Heavy Trucks:	63.7	63.1	54.1	55.3	63.7	63.8
Vehicle Noise:	71.8	70.9	68.0	63.1	71.6	72.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	108	233	502	1,081
CNEL:	116	250	540	1,163

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: High School to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,525 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,261 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.31	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.93	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.88	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.2	69.1	67.4	61.3	69.9	70.5	
Medium Trucks:	63.6	62.9	56.5	55.0	63.5	63.7	
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7	
Vehicle Noise:	71.8	70.8	67.9	63.0	71.6	72.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	107	230	496	1,069
CNEL:	115	248	534	1,150

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Bryan Avenue to Florence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,270 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,075 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.06	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.18	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.14	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.9	68.9	67.1	61.1	69.7	70.3	
Medium Trucks:	63.3	62.7	56.3	54.7	63.2	63.4	
Heavy Trucks:	63.4	62.8	53.7	55.0	63.3	63.5	
Vehicle Noise:	71.5	70.6	67.6	62.8	71.3	71.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	103	221	477	1,028
CNEL:	111	238	513	1,106



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Portola Parkway to Settlers

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,591 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,781 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.55	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.51	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.2	66.4	60.3	69.0	69.6
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	62.6	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	70.8	69.9	66.9	62.0	70.6	71.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	148	318	685
CNEL:	74	159	342	737

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Florence to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,440 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,006 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.96	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.28	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.24	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.8	67.0	61.0	69.6	70.2
Medium Trucks:	63.2	62.6	56.2	54.7	63.1	63.3
Heavy Trucks:	63.3	62.7	53.6	54.9	63.2	63.4
Vehicle Noise:	71.4	70.5	67.5	62.7	71.2	71.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	218	470	1,013
CNEL:	109	235	506	1,089

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Irvine Boulevard to Viewpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,912 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,303 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.80	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.44	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.39	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.9	59.8	68.4	69.0
Medium Trucks:	62.1	61.4	55.0	53.5	62.0	62.2
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	70.3	69.3	66.4	61.5	70.1	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	183	393	848
CNEL:	91	196	423	912

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Viewpark to Meadowood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,661 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,282 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.76	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.48	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.43	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.6	67.6	65.8	59.8	68.4	69.0	
Medium Trucks:	62.0	61.4	55.0	53.5	61.9	62.1	
Heavy Trucks:	62.1	61.5	52.4	53.7	62.0	62.2	
Vehicle Noise:	70.2	69.3	66.3	61.5	70.0	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	182	391	843
CNEL:	91	195	421	906

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Settlers to Furrow

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	11,425 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	943 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-3.08	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-20.32	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-24.27	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.4	63.6	57.6	66.2	66.8
Medium Trucks:	59.8	59.2	52.8	51.3	59.7	60.0
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0
Vehicle Noise:	68.0	67.1	64.2	59.3	67.8	68.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	97	208	448
CNEL:	48	104	224	482

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Culver Drive  
 Road Segment: Meadowood to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,435 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,603 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.77	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-18.01	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.97	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.0	64.3	58.2	66.8	67.5
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	60.5	59.9	50.9	52.2	60.5	60.6
Vehicle Noise:	68.7	67.8	64.8	59.9	68.5	69.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	143	309	666
CNEL:	72	154	333	716

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Discovery Drive  
 Road Segment: Irvine Center Drive to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,932 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	737 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.77	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.00	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.96	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.5	60.4	58.7	52.6	61.2	61.8
Medium Trucks:	55.5	54.8	48.4	46.9	55.4	55.6
Heavy Trucks:	56.8	56.2	47.2	48.4	56.8	56.9
Vehicle Noise:	63.5	62.6	59.3	54.8	63.3	63.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	48	104	224
CNEL:	24	52	111	240

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Discovery Drive  
 Road Segment: Waterworks Way to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,423 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	365 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.82	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-23.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-27.01	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.4	57.4	55.6	49.6	58.2	58.8
Medium Trucks:	52.4	51.7	45.4	43.8	52.3	52.5
Heavy Trucks:	53.7	53.1	44.1	45.4	53.7	53.8
Vehicle Noise:	60.5	59.6	56.3	51.7	60.3	60.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	30	65	140
CNEL:	15	32	70	150



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: East Yale Loop  
 Road Segment: Alton Parkway to Witherspoon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,625 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,042 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.46	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.0	61.9	60.2	54.1	62.7	63.3
Medium Trucks:	57.0	56.3	49.9	48.4	56.9	57.1
Heavy Trucks:	58.3	57.7	48.7	49.9	58.3	58.4
Vehicle Noise:	65.0	64.1	60.8	56.3	64.8	65.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	131	282
CNEL:	30	65	140	302

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: East Yale Loop  
 Road Segment: Osborn Street to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,855 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 978 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.73	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.7	61.7	59.9	53.8	62.5	63.1	
Medium Trucks:	56.7	56.0	49.7	48.1	56.6	56.8	
Heavy Trucks:	58.0	57.4	48.4	49.6	58.0	58.1	
Vehicle Noise:	64.7	63.8	60.6	56.0	64.6	65.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	126	271
CNEL:	29	62	135	290

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: East Yale Loop  
 Road Segment: Yale Avenue to Springbrook South

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,084 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 832 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.43	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.0	61.0	59.2	53.1	61.8	62.4
Medium Trucks:	56.0	55.3	49.0	47.4	55.9	56.1
Heavy Trucks:	57.3	56.7	47.7	48.9	57.3	57.4
Vehicle Noise:	64.0	63.1	59.9	55.3	63.8	64.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	113	243
CNEL:	26	56	121	260

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: East Yale Loop  
 Road Segment: Springbrook North to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,140 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 672 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.41	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.36	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.1	60.0	58.3	52.2	60.8	61.4	
Medium Trucks:	55.1	54.4	48.0	46.5	55.0	55.2	
Heavy Trucks:	56.4	55.8	46.8	48.0	56.4	56.5	
Vehicle Noise:	63.1	62.2	58.9	54.4	62.9	63.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	45	98	211
CNEL:	23	49	105	226

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: East Yale Loop  
 Road Segment: Woodspring to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,731 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 555 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.99	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.19	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.3	59.2	57.4	51.4	60.0	60.6
Medium Trucks:	54.2	53.6	47.2	45.7	54.1	54.4
Heavy Trucks:	55.6	55.0	45.9	47.2	55.5	55.7
Vehicle Noise:	62.3	61.4	58.1	53.6	62.1	62.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	40	86	186
CNEL:	20	43	92	199

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: East Yale Loop  
 Road Segment: Barranca Parkway to Eastshore

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,747 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	557 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.98	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.22	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.18	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.3	59.2	57.5	51.4	60.0	60.6
Medium Trucks:	54.3	53.6	47.2	45.7	54.1	54.4
Heavy Trucks:	55.6	55.0	45.9	47.2	55.6	55.7
Vehicle Noise:	62.3	61.4	58.1	53.6	62.1	62.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	40	86	186
CNEL:	20	43	92	199

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Eastwood  
 Road Segment: Bryan Avenue to Monticello

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,973 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	245 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-6.96	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-24.20	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-28.16	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.0	56.9	55.1	49.1	57.7	58.3
Medium Trucks:	52.2	51.5	45.2	43.6	52.1	52.3
Heavy Trucks:	54.0	53.5	44.4	45.7	54.0	54.2
Vehicle Noise:	60.2	59.3	55.9	51.5	60.0	60.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	38	81
CNEL:	9	19	40	87

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Eastwood  
 Road Segment: Columbus to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,023 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	167 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-8.64	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-25.87	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-29.83	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.3	55.2	53.5	47.4	56.0	56.6
Medium Trucks:	50.5	49.9	43.5	41.9	50.4	50.6
Heavy Trucks:	52.4	51.8	42.7	44.0	52.4	52.5
Vehicle Noise:	58.5	57.6	54.2	49.8	58.3	58.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	14	29	63
CNEL:	7	14	31	67



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: El Camino Real  
 Road Segment: Jamboree Road to Alliance (SR-261 Bridge)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 18,775 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,549 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.46	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.78	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.73	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.7	63.7	61.9	55.8	64.5	65.1	
Medium Trucks:	58.7	58.0	51.7	50.1	58.6	58.8	
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1	
Vehicle Noise:	66.7	65.8	62.6	58.0	66.5	67.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	171	368
CNEL:	39	85	183	394

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: El Camino Real North  
 Road Segment: El Camino Real to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,510 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 537 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.33	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.1	59.1	57.3	51.2	59.9	60.5	
Medium Trucks:	54.1	53.4	47.1	45.5	54.0	54.2	
Heavy Trucks:	55.4	54.8	45.8	47.0	55.4	55.5	
Vehicle Noise:	62.1	61.2	58.0	53.4	61.9	62.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	84	182
CNEL:	19	42	90	194

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Fairbanks  
 Road Segment: Alton Parkway to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,025 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,487 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 37.138				
Road Grade: 0.0%		Medium Trucks: 37.030				
Left View: -90.0 degrees		Heavy Trucks: 37.139				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.28	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-16.95	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-20.91	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.4	64.6	58.5	67.2	67.8
Medium Trucks:	61.4	60.7	54.4	52.8	61.3	61.5
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	69.4	68.5	65.3	60.7	69.3	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	72	155	334
CNEL:	36	77	166	358

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Fairbanks  
 Road Segment: Irvine Boulevard to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,256 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 764 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.61	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-19.85	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-23.80	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.5	63.5	61.7	55.7	64.3	64.9
Medium Trucks:	58.5	57.8	51.5	49.9	58.4	58.6
Heavy Trucks:	59.8	59.2	50.2	51.5	59.8	59.9
Vehicle Noise:	66.5	65.6	62.4	57.8	66.4	66.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	46	100	214
CNEL:	23	49	107	230

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Fairchild Road  
 Road Segment: MacArthur Boulevard to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,074 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 584 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.53	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.48	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.9	60.9	59.1	53.0	61.7	62.3	
Medium Trucks:	55.7	55.0	48.6	47.1	55.6	55.8	
Heavy Trucks:	56.5	55.9	46.9	48.1	56.5	56.6	
Vehicle Noise:	63.8	62.9	59.7	55.0	63.6	64.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	233
CNEL:	25	54	116	250

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Gateway Boulevard  
 Road Segment: Alton Parkway to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,311 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,181 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	0.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-16.71	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-20.66	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.0	59.0	57.2	51.2	59.8	60.4
Medium Trucks:	54.5	53.9	47.5	46.0	54.4	54.6
Heavy Trucks:	57.0	56.4	47.4	48.6	57.0	57.1
Vehicle Noise:	62.5	61.7	58.0	53.9	62.4	62.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	42	90	194
CNEL:	21	44	96	206

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan Project Name: Irvine GP  
 Road Name: Gateway Boulevard Job Number: 15937  
 Road Segment: Spectrum Center Drive (Fortune Drive) to Alton Parkway

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,892 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 899 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.65	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.89	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.85	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.9	57.8	56.0	50.0	58.6	59.2
Medium Trucks:	53.3	52.7	46.3	44.8	53.2	53.5
Heavy Trucks:	55.8	55.2	46.2	47.5	55.8	55.9
Vehicle Noise:	61.4	60.5	56.9	52.7	61.2	61.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	16	35	75	162
CNEL:	17	37	80	172

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Gateway Boulevard  
 Road Segment: Irvine Center Drive to Meridian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,160 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 426 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-3.90	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-21.14	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-25.09	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.6	54.5	52.8	46.7	55.3	55.9
Medium Trucks:	50.1	49.4	43.1	41.5	50.0	50.2
Heavy Trucks:	52.6	52.0	43.0	44.2	52.6	52.7
Vehicle Noise:	58.1	57.2	53.6	49.4	57.9	58.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	10	21	46	98
CNEL:	10	23	49	105



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Great Park Boulevard  
 Road Segment: Sand Canyon to Ridge Valley

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 41,232 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,402 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.91	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.33	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.29	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.2	71.1	69.3	63.3	71.9	72.5
Medium Trucks:	65.7	65.1	58.7	57.2	65.6	65.9
Heavy Trucks:	66.1	65.6	56.5	57.8	66.1	66.3
Vehicle Noise:	73.9	72.9	69.9	65.1	73.7	74.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	105	227	489	1,053
CNEL:	113	244	525	1,131

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Great Park Boulevard  
 Road Segment: Ridge Valley (O Street) to Bosque (LY Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,241 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,670 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.42	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.38	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	64.9	58.9	67.5	68.1
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	61.8	61.2	52.1	53.4	61.7	61.9
Vehicle Noise:	69.5	68.6	65.5	60.7	69.3	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	120	259	559
CNEL:	60	129	279	601

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Great Park Boulevard (EB)  
 Road Segment: Bosque to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,039 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 581 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.77	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-22.01	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-25.96	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.1	65.0	63.2	57.2	65.8	66.4	
Medium Trucks:	59.6	59.0	52.6	51.1	59.5	59.8	
Heavy Trucks:	60.0	59.5	50.4	51.7	60.0	60.2	
Vehicle Noise:	67.8	66.8	63.8	59.0	67.6	68.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	56	120	258
CNEL:	28	60	129	277

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Great Park Boulevard (WB)  
 Road Segment: Bosque to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,351 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 524 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.22	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-22.45	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-26.41	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.6	62.8	56.7	65.4	66.0
Medium Trucks:	59.2	58.5	52.2	50.6	59.1	59.3
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7
Vehicle Noise:	67.3	66.4	63.4	58.6	67.1	67.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	112	241
CNEL:	26	56	120	259

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: University Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,732 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,793 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 37.138				
Road Grade: 0.0%		Medium Trucks: 37.030				
Left View: -90.0 degrees		Heavy Trucks: 37.139				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.58	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-16.65	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-20.61	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.8	60.8	69.4	70.0
Medium Trucks:	63.4	62.8	56.4	54.9	63.3	63.6
Heavy Trucks:	64.3	63.7	54.7	55.9	64.3	64.4
Vehicle Noise:	71.5	70.6	67.5	62.8	71.3	71.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	99	213	459
CNEL:	49	106	229	493

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: Michelson Drive to Coronado

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,191 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,408 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.87	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.37	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.33	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.3	59.2	67.8	68.4
Medium Trucks:	61.8	61.2	54.8	53.3	61.7	62.0
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	69.9	69.0	65.9	61.2	69.7	70.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	278	599
CNEL:	64	138	298	643

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: San Marino to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,906 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,302 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.67	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.57	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.52	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.8	65.1	59.0	67.6	68.2
Medium Trucks:	61.6	61.0	54.6	53.1	61.5	61.8
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	69.7	68.8	65.7	61.0	69.5	70.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	270	581
CNEL:	62	134	289	624

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: Coronado to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,017 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,311 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.69	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.55	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.51	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.8	65.1	59.0	67.6	68.2
Medium Trucks:	61.7	61.0	54.6	53.1	61.5	61.8
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	69.7	68.8	65.7	61.0	69.5	70.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	126	271	583
CNEL:	63	135	290	625



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: San Carlo to San Marino

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,164 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,241 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.55	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.68	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.64	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	64.9	58.9	67.5	68.1
Medium Trucks:	61.5	60.9	54.5	52.9	61.4	61.6
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5
Vehicle Noise:	69.6	68.7	65.5	60.9	69.4	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	123	265	571
CNEL:	61	132	284	612

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: Main Street to San Carlo

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,657 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,199 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.47	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.72	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.6	64.9	58.8	67.4	68.0
Medium Trucks:	61.4	60.8	54.4	52.9	61.3	61.6
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	69.5	68.6	65.5	60.8	69.3	69.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	121	262	564
CNEL:	60	130	281	605

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: Alton Parkway to San Leon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,733 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.44	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.76	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.6	63.8	57.8	66.4	67.0
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5
Heavy Trucks:	61.2	60.7	51.6	52.9	61.2	61.4
Vehicle Noise:	68.5	67.6	64.4	59.8	68.3	68.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	104	223	481
CNEL:	52	111	239	516

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: San Juan to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,509 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,692 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.33	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.91	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.86	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.5	65.5	63.7	57.7	66.3	66.9	
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4	
Heavy Trucks:	61.1	60.6	51.5	52.8	61.1	61.3	
Vehicle Noise:	68.4	67.5	64.3	59.6	68.2	68.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	102	220	473
CNEL:	51	109	236	508

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: San Leon to San Juan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,160 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,663 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.94	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.4	63.6	57.6	66.2	66.8
Medium Trucks:	60.2	59.6	53.2	51.7	60.1	60.3
Heavy Trucks:	61.1	60.5	51.4	52.7	61.1	61.2
Vehicle Noise:	68.3	67.4	64.3	59.6	68.1	68.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	101	217	468
CNEL:	50	108	233	502

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,559 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,284 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.87	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.06	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.3	64.3	62.5	56.5	65.1	65.7
Medium Trucks:	59.1	58.4	52.1	50.5	59.0	59.2
Heavy Trucks:	59.9	59.4	50.3	51.6	59.9	60.1
Vehicle Noise:	67.2	66.3	63.1	58.4	67.0	67.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	85	183	394
CNEL:	42	91	196	422

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: Deerfield Avenue to Poplar Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,473 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,277 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.89	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.08	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.3	64.3	62.5	56.4	65.1	65.7
Medium Trucks:	59.1	58.4	52.0	50.5	59.0	59.2
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0
Vehicle Noise:	67.2	66.3	63.1	58.4	67.0	67.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	85	182	392
CNEL:	42	91	195	421

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,075 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,409 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.46	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.70	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.66	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.8	64.7	62.9	56.9	65.5	66.1
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6
Heavy Trucks:	60.3	59.8	50.7	52.0	60.3	60.5
Vehicle Noise:	67.6	66.7	63.5	58.9	67.4	67.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	90	194	419
CNEL:	45	97	209	449



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: Bridge Road to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,962 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,317 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.76	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.99	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.95	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.5	64.4	62.6	56.6	65.2	65.8
Medium Trucks:	59.2	58.5	52.2	50.6	59.1	59.3
Heavy Trucks:	60.1	59.5	50.4	51.7	60.0	60.2
Vehicle Noise:	67.3	66.4	63.2	58.6	67.1	67.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	86	186	401
CNEL:	43	93	199	430

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: Paseo Westpark to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,630 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,372 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.58	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.82	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.77	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.6	62.8	56.8	65.4	66.0
Medium Trucks:	59.4	58.7	52.4	50.8	59.3	59.5
Heavy Trucks:	60.2	59.6	50.6	51.9	60.2	60.3
Vehicle Noise:	67.5	66.6	63.4	58.7	67.3	67.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	89	191	412
CNEL:	44	95	205	442

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: Poplar Street to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,344 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,101 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.53	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	79.45	-18.77	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	84.25	-22.73	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.6	63.8	57.8	66.4	67.0
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5
Heavy Trucks:	61.2	60.6	51.6	52.9	61.2	61.3
Vehicle Noise:	68.5	67.6	64.4	59.7	68.3	68.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	83	178	384
CNEL:	41	89	191	412

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: California Avenue to Berkeley Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,155 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.33	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.52	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.9	63.8	62.1	56.0	64.6	65.2	
Medium Trucks:	58.6	58.0	51.6	50.1	58.5	58.8	
Heavy Trucks:	59.5	58.9	49.9	51.1	59.5	59.6	
Vehicle Noise:	66.7	65.8	62.7	58.0	66.5	67.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	170	367
CNEL:	39	85	183	394

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: Culver Drive to California Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,746 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,134 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.40	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.64	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.60	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.8	63.7	62.0	55.9	64.5	65.2
Medium Trucks:	58.6	57.9	51.5	50.0	58.5	58.7
Heavy Trucks:	59.4	58.8	49.8	51.0	59.4	59.5
Vehicle Noise:	66.6	65.7	62.6	57.9	66.5	66.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	168	363
CNEL:	39	84	181	389

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: Berkeley to Bridge Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,010 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,156 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.52	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	63.8	62.1	56.0	64.6	65.2
Medium Trucks:	58.7	58.0	51.6	50.1	58.5	58.8
Heavy Trucks:	59.5	58.9	49.9	51.1	59.5	59.6
Vehicle Noise:	66.7	65.8	62.7	58.0	66.5	67.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	170	367
CNEL:	39	85	183	394

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Harvard Avenue  
 Road Segment: Warner Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,408 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,106 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.51	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.75	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.71	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.7	63.6	61.9	55.8	64.4	65.0
Medium Trucks:	58.5	57.8	51.4	49.9	58.3	58.6
Heavy Trucks:	59.3	58.7	49.7	50.9	59.3	59.4
Vehicle Noise:	66.5	65.6	62.5	57.8	66.3	66.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	166	357
CNEL:	38	82	178	383

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Hicks Canyon Drive  
 Road Segment: Delamesa to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,310 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	191 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	50.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 42.814				
Road Grade:	0.0%	Medium Trucks: 42.720				
Left View:	-90.0 degrees	Heavy Trucks: 42.814				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-8.06	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	75.75	-25.30	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	81.57	-29.25	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.0	54.9	53.1	47.1	55.7	56.3
Medium Trucks:	50.2	49.5	43.1	41.6	50.1	50.3
Heavy Trucks:	52.0	51.4	42.4	43.6	52.0	52.1
Vehicle Noise:	58.2	57.3	53.9	49.5	58.0	58.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	79
CNEL:	8	18	39	85



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Hornet (5th St)  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,316 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 274 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-5.03	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-22.27	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-26.22	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	54.3	53.3	51.5	45.5	54.1	54.7	
Medium Trucks:	49.2	48.5	42.1	40.6	49.1	49.3	
Heavy Trucks:	52.4	51.8	42.8	44.0	52.4	52.5	
Vehicle Noise:	57.2	56.4	52.5	48.6	57.1	57.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	11	24	52
CNEL:	5	12	25	55

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Hubble  
 Road Segment: Irvine Center Drive to Bunsen

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,224 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 183 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-6.76	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-24.00	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-27.96	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.6	51.5	49.8	43.7	52.3	52.9
Medium Trucks:	47.4	46.8	40.4	38.9	47.3	47.6
Heavy Trucks:	50.7	50.1	41.0	42.3	50.6	50.8
Vehicle Noise:	55.5	54.7	50.7	46.8	55.3	55.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	18	39
CNEL:	4	9	19	42

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: SR-133 NB Off- Ramp to Ridge Valley (O Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 42,105 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,474 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.59	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.65	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.61	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	69.4	67.6	61.6	70.2	70.8
Medium Trucks:	63.9	63.2	56.8	55.3	63.7	64.0
Heavy Trucks:	63.9	63.3	54.3	55.5	63.9	64.0
Vehicle Noise:	72.0	71.1	68.2	63.3	71.8	72.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	111	240	518	1,115
CNEL:	120	258	557	1,200

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: SR-133 SB Off-Ramp to SR-133 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 41,055 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,387 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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Autos:	77.5%	12.9%	9.6%	97.42%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.48	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.76	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.72	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.4	69.3	67.5	61.5	70.1	70.7	
Medium Trucks:	63.7	63.1	56.7	55.2	63.6	63.9	
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9	
Vehicle Noise:	71.9	71.0	68.1	63.2	71.7	72.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	236	509	1,096
CNEL:	118	254	547	1,179

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Sand Canyon to SR-133 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,675 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,768 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.94	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.30	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.26	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.2	70.2	68.4	62.3	71.0	71.6
Medium Trucks:	64.6	63.9	57.6	56.0	64.5	64.7
Heavy Trucks:	64.7	64.1	55.0	56.3	64.6	64.8
Vehicle Noise:	72.8	71.9	68.9	64.1	72.6	73.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	119	257	554	1,194
CNEL:	128	277	596	1,285

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Merit to Alton

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,805 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,954 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.88	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.36	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.31	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	66.9	60.9	69.5	70.1
Medium Trucks:	63.2	62.5	56.1	54.6	63.0	63.3
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3
Vehicle Noise:	71.3	70.4	67.5	62.6	71.1	71.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	465	1,001
CNEL:	108	232	500	1,077

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Journey to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 35,910 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,963 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.89	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.34	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.30	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	66.9	60.9	69.5	70.1
Medium Trucks:	63.2	62.5	56.1	54.6	63.0	63.3
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3
Vehicle Noise:	71.4	70.4	67.5	62.6	71.2	71.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	465	1,003
CNEL:	108	232	501	1,079

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Ridge Valley (O Street) to Bosque (LY Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,235 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,659 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.43	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.81	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.77	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.3	68.2	66.5	60.4	69.0	69.7	
Medium Trucks:	62.7	62.0	55.7	54.1	62.6	62.8	
Heavy Trucks:	62.7	62.1	53.1	54.4	62.7	62.8	
Vehicle Noise:	70.9	70.0	67.0	62.1	70.7	71.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	201	433	933
CNEL:	100	216	466	1,004



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Pusan Way to Chinon (B Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,080 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,564 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.27	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.97	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.93	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.2	68.1	66.3	60.3	68.9	69.5	
Medium Trucks:	62.5	61.9	55.5	54.0	62.4	62.7	
Heavy Trucks:	62.6	62.0	52.9	54.2	62.6	62.7	
Vehicle Noise:	70.7	69.8	66.8	62.0	70.5	71.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	196	423	911
CNEL:	98	211	455	980

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Palo Lado to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,118 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,320 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.83	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.41	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.36	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.7	65.9	59.8	68.5	69.1
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2
Heavy Trucks:	62.1	61.6	52.5	53.8	62.1	62.2
Vehicle Noise:	70.3	69.4	66.4	61.5	70.1	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	184	395	852
CNEL:	92	197	425	916

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Culver Drive to Palo Lado

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,495 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,351 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.89	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.35	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.30	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.2	61.5	55.1	53.6	62.0	62.3
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	70.4	69.4	66.5	61.6	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	399	859
CNEL:	92	199	429	925

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: SR-261 SB Off-Ramp to SR-261 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,294 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,334 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.86	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.38	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.34	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.1	61.5	55.1	53.6	62.0	62.2
Heavy Trucks:	62.2	61.6	52.5	53.8	62.1	62.3
Vehicle Noise:	70.3	69.4	66.4	61.6	70.1	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	184	397	855
CNEL:	92	198	427	920

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Old Myford Road to Market Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,891 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,301 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.80	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.44	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.40	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.9	59.8	68.4	69.0	
Medium Trucks:	62.1	61.4	55.0	53.5	62.0	62.2	
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2	
Vehicle Noise:	70.3	69.3	66.4	61.5	70.1	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	183	393	847
CNEL:	91	196	423	912

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Bosque (LY Street) to Modjeska

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,773 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,374 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.93	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.31	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.26	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.8	66.0	59.9	68.6	69.2
Medium Trucks:	62.2	61.5	55.2	53.6	62.1	62.3
Heavy Trucks:	62.2	61.7	52.6	53.9	62.2	62.3
Vehicle Noise:	70.4	69.5	66.5	61.6	70.2	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	186	402	865
CNEL:	93	200	432	931

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Jamboree Road to Old Myford Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,513 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,270 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.74	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.50	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.46	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.6	65.8	59.7	68.4	69.0
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.0	61.5	52.4	53.7	62.0	62.2
Vehicle Noise:	70.2	69.3	66.3	61.4	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	390	840
CNEL:	90	195	419	903

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Market Place to SR-261 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,325 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,254 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.49	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.6	67.5	65.8	59.7	68.3	68.9	
Medium Trucks:	62.0	61.3	54.9	53.4	61.9	62.1	
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1	
Vehicle Noise:	70.2	69.2	66.3	61.4	70.0	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	180	388	836
CNEL:	90	194	417	899



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Jeffrey Road to Groveland

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,715 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,451 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.07	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.17	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.12	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	67.9	66.1	60.1	68.7	69.3
Medium Trucks:	62.3	61.7	55.3	53.8	62.2	62.5
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	70.5	69.6	66.7	61.8	70.3	70.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	190	410	884
CNEL:	95	205	441	951

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Bake Parkway to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 30,011 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,476 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.11	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.12	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.08	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.0	67.9	66.2	60.1	68.7	69.3	
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5	
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5	
Vehicle Noise:	70.6	69.6	66.7	61.8	70.4	70.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	192	413	890
CNEL:	96	206	444	957

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan Project Name: Irvine GP  
 Road Name: Irvine Boulevard Job Number: 15937  
 Road Segment: Independence Way (The Groves)/The Groves to Jeffrey Road

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b> Average Daily Traffic (Adt): 27,709 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,286 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	<b>Site Conditions (Hard = 10, Soft = 15)</b> Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b> Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<b>Vehicle Mix</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table> <b>Noise Source Elevations (in feet)</b> Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Lane Equivalent Distance (in feet)</b> Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.77	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.47	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.43	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.8	59.8	68.4	69.0	
Medium Trucks:	62.0	61.4	55.0	53.5	61.9	62.2	
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2	
Vehicle Noise:	70.2	69.3	66.3	61.5	70.0	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	182	392	844
CNEL:	91	196	421	908

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Chinon (B Street) to Merit

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,405 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,261 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.72	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.52	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.47	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	68.9
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.0	61.4	52.4	53.7	62.0	62.1
Vehicle Noise:	70.2	69.3	66.3	61.4	70.0	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	180	389	837
CNEL:	90	194	418	901

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: SR-261 NB Off-Ramp to Central Park

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,097 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,153 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.51	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.73	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.69	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.3	65.6	59.5	68.1	68.7	
Medium Trucks:	61.8	61.1	54.7	53.2	61.7	61.9	
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9	
Vehicle Noise:	70.0	69.0	66.1	61.2	69.8	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	175	376	811
CNEL:	87	188	405	872

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan	Project Name: Irvine GP
Road Name: Irvine Boulevard	Job Number: 15937
Road Segment: Pueblo Norte to Independence Way (The Groves)/ Parkwood	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,190 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 2,078 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 55 mph																					
Near/Far Lane Distance: 78 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 84.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 84.0 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 74.458																				
Left View: -90.0 degrees	Medium Trucks: 74.404																				
Right View: 90.0 degrees	Heavy Trucks: 74.458																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.35	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.88	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.84	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.2	65.4	59.4	68.0	68.6
Medium Trucks:	61.6	61.0	54.6	53.0	61.5	61.7
Heavy Trucks:	61.7	61.1	52.0	53.3	61.6	61.8
Vehicle Noise:	69.8	68.9	65.9	61.1	69.6	70.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	171	367	792
CNEL:	85	183	395	852

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Yale Avenue to Pueblo Norte

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,057 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,067 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.33	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.91	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.86	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	67.2	65.4	59.3	68.0	68.6	
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7	
Heavy Trucks:	61.6	61.0	52.0	53.3	61.6	61.7	
Vehicle Noise:	69.8	68.9	65.9	61.0	69.6	70.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	170	366	789
CNEL:	85	183	394	849

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Modjeska to Pusan Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,040 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,148 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.50	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.74	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.70	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	61.8	61.1	54.7	53.2	61.7	61.9
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	70.0	69.0	66.1	61.2	69.8	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	376	809
CNEL:	87	188	404	871



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Central Park Avenue to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,685 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,871 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.10	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.34	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.29	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	66.7	65.0	58.9	67.5	68.1	
Medium Trucks:	61.2	60.5	54.1	52.6	61.1	61.3	
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3	
Vehicle Noise:	69.4	68.4	65.5	60.6	69.2	69.6	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	343	738
CNEL:	79	171	369	794

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Parker to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,409 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,849 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.39	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.35	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.7	64.9	58.8	67.5	68.1
Medium Trucks:	61.1	60.4	54.1	52.5	61.0	61.2
Heavy Trucks:	61.2	60.6	51.5	52.8	61.1	61.3
Vehicle Noise:	69.3	68.4	65.4	60.6	69.1	69.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	158	340	732
CNEL:	79	170	366	788

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Boulevard  
 Road Segment: Alton Parkway to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,955 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,481 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-18.35	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-22.31	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.2	59.5	53.1	51.6	60.0	60.3
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3
Vehicle Noise:	68.3	67.4	64.5	59.6	68.1	68.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	293	632
CNEL:	68	146	315	680

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan Project Name: Irvine GP  
 Road Name: Irvine Center Drive Job Number: 15937  
 Road Segment: Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 51,275 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,230 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.86	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.38	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.34	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	69.5	67.7	61.7	70.3	70.9
Medium Trucks:	64.1	63.5	57.1	55.6	64.0	64.2
Heavy Trucks:	64.6	64.0	54.9	56.2	64.5	64.7
Vehicle Noise:	72.3	71.3	68.3	63.5	72.1	72.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	237	510	1,099
CNEL:	118	254	548	1,181

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Orange Tree to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 43,698 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,605 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.16	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.08	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.03	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.5	68.4	66.6	60.6	69.2	69.8
Medium Trucks:	63.0	62.4	56.0	54.5	62.9	63.1
Heavy Trucks:	63.4	62.9	53.8	55.1	63.4	63.6
Vehicle Noise:	71.2	70.2	67.2	62.4	71.0	71.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	210	452	974
CNEL:	105	225	486	1,046

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: I-405 SB Off-Ramp to Research

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 46,454 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,832 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.43	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.81	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.77	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.1	67.3	61.3	69.9	70.5
Medium Trucks:	63.7	63.0	56.7	55.1	63.6	63.8
Heavy Trucks:	64.1	63.5	54.5	55.8	64.1	64.2
Vehicle Noise:	71.8	70.9	67.9	63.1	71.6	72.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	103	222	478	1,029
CNEL:	111	238	513	1,106

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Irvine Valley College to Orange Tree

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 42,382 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,496 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.21	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.17	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.3	66.5	60.5	69.1	69.7
Medium Trucks:	62.9	62.2	55.9	54.3	62.8	63.0
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4
Vehicle Noise:	71.0	70.1	67.1	62.3	70.8	71.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	95	206	443	954
CNEL:	103	221	476	1,025

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Fontaine Avenue to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,987 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,299 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.78	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.46	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.42	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.3	60.2	68.8	69.4
Medium Trucks:	62.6	62.0	55.6	54.1	62.5	62.8
Heavy Trucks:	63.1	62.5	53.4	54.7	63.0	63.2
Vehicle Noise:	70.8	69.9	66.8	62.0	70.6	71.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	426	918
CNEL:	99	212	458	986



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Culver Drive to Deerwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,661 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,272 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.74	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.50	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.45	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	68.0	66.2	60.2	68.8	69.4
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	63.0	62.4	53.4	54.7	63.0	63.1
Vehicle Noise:	70.7	69.8	66.8	62.0	70.5	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	197	424	913
CNEL:	98	211	455	981

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Deerwood to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,150 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,230 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.68	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.56	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.51	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	67.9	66.2	60.1	68.7	69.3
Medium Trucks:	62.6	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	63.0	62.4	53.3	54.6	63.0	63.1
Vehicle Noise:	70.7	69.8	66.7	61.9	70.5	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	195	420	905
CNEL:	97	210	451	972

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Yale Avenue to Fontaine Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 38,813 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,202 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.65	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.59	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.55	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	67.9	66.1	60.1	68.7	69.3
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6
Heavy Trucks:	62.9	62.3	53.3	54.6	62.9	63.0
Vehicle Noise:	70.6	69.7	66.7	61.9	70.4	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	194	418	900
CNEL:	97	208	449	967

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Jeffrey Road to Irvine Valley College

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,074 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,306 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.78	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.45	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.41	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.3	60.2	68.8	69.4
Medium Trucks:	62.7	62.0	55.6	54.1	62.5	62.8
Heavy Trucks:	63.1	62.5	53.4	54.7	63.1	63.2
Vehicle Noise:	70.8	69.9	66.8	62.0	70.6	71.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	427	919
CNEL:	99	213	458	988

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Alton Parkway to Spectrum

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,648 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,858 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.04	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.6	59.6	68.2	68.8
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.4	61.9	52.8	54.1	62.4	62.5
Vehicle Noise:	70.2	69.2	66.2	61.4	70.0	70.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	180	387	834
CNEL:	90	193	416	896

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Spectrum to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,982 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,803 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.07	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.17	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.13	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.1
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5
Vehicle Noise:	70.1	69.2	66.1	61.3	69.9	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	382	824
CNEL:	88	191	411	885

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Hearthstone to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,389 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,002 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.37	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.87	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.83	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.2	61.6	55.2	53.7	62.1	62.3
Heavy Trucks:	62.7	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	70.4	69.4	66.4	61.6	70.2	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	186	400	862
CNEL:	93	200	430	926

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Charter to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,888 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,713 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.93	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.31	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.27	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.2	65.4	59.3	68.0	68.6
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	69.9	69.0	66.0	61.2	69.7	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	374	806
CNEL:	87	187	402	866



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Jamboree Road to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,538 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,767 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.01	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.23	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.18	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.3	65.5	59.4	68.1	68.7	
Medium Trucks:	61.9	61.2	54.8	53.3	61.8	62.0	
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4	
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	176	379	816
CNEL:	88	189	407	877

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Pacifica to Entertainment (Enterprise/Fortune)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,656 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,777 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.21	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.17	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.3	65.5	59.4	68.1	68.7	
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0	
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4	
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	176	380	818
CNEL:	88	189	408	879

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,525 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,601 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.74	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.50	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.45	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	67.0	65.2	59.2	67.8	68.4
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7
Heavy Trucks:	62.0	61.4	52.4	53.7	62.0	62.1
Vehicle Noise:	69.7	68.8	65.8	61.0	69.5	70.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	169	364	783
CNEL:	84	181	391	842

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Harvard Avenue to Hearthstone

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,072 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,563 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.68	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.56	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.51	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.0	66.9	65.2	59.1	67.7	68.3	
Medium Trucks:	61.5	60.9	54.5	53.0	61.4	61.7	
Heavy Trucks:	62.0	61.4	52.3	53.6	61.9	62.1	
Vehicle Noise:	69.7	68.8	65.7	60.9	69.5	70.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	167	360	776
CNEL:	83	180	387	834

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Research to Hubble

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,150 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,487 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.55	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.69	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.65	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.8	65.0	59.0	67.6	68.2
Medium Trucks:	61.4	60.7	54.4	52.8	61.3	61.5
Heavy Trucks:	61.8	61.2	52.2	53.5	61.8	61.9
Vehicle Noise:	69.5	68.6	65.6	60.8	69.4	69.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	164	353	760
CNEL:	82	176	379	817

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Barranca Parkway to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,369 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,258 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.13	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.11	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.07	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.4	64.6	58.6	67.2	67.8
Medium Trucks:	61.0	60.3	54.0	52.4	60.9	61.1
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5
Vehicle Noise:	69.1	68.2	65.2	60.4	68.9	69.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	154	331	713
CNEL:	77	165	356	766

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Bake Parkway to Muller

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,012 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,559 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.57	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.52	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	66.9	65.1	59.1	67.7	68.3
Medium Trucks:	61.5	60.9	54.5	53.0	61.4	61.7
Heavy Trucks:	62.0	61.4	52.3	53.6	61.9	62.1
Vehicle Noise:	69.7	68.8	65.7	60.9	69.5	69.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	167	360	775
CNEL:	83	179	386	833

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Discovery to Charter

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,747 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,207 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.21	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.17	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.3	66.3	64.5	58.5	67.1	67.7	
Medium Trucks:	60.9	60.2	53.9	52.3	60.8	61.0	
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4	
Vehicle Noise:	69.0	68.1	65.1	60.3	68.8	69.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	151	326	702
CNEL:	75	163	350	754



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Hubble to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,424 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,427 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.44	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.80	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.75	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.7	66.7	64.9	58.9	67.5	68.1	
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4	
Heavy Trucks:	61.7	61.1	52.1	53.4	61.7	61.8	
Vehicle Noise:	69.4	68.5	65.5	60.7	69.2	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	347	748
CNEL:	80	173	373	804

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Muller to Tesla

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,797 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,293 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.20	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.04	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.00	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.4	64.7	58.6	67.2	67.8
Medium Trucks:	61.1	60.4	54.0	52.5	60.9	61.2
Heavy Trucks:	61.5	60.9	51.9	53.1	61.5	61.6
Vehicle Noise:	69.2	68.3	65.2	60.5	69.0	69.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	72	155	334	720
CNEL:	77	167	359	774

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Sand Canyon Avenue to Odyssey

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,007 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,063 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.74	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.50	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.46	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	66.0	64.2	58.2	66.8	67.4
Medium Trucks:	60.6	59.9	53.6	52.0	60.5	60.7
Heavy Trucks:	61.0	60.4	51.4	52.7	61.0	61.1
Vehicle Noise:	68.7	67.8	64.8	60.0	68.5	69.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	145	312	671
CNEL:	72	155	335	721

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Tesla to Scientific Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,203 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,162 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.94	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.30	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.25	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.2	66.2	64.4	58.4	67.0	67.6	
Medium Trucks:	60.8	60.1	53.8	52.2	60.7	60.9	
Heavy Trucks:	61.2	60.6	51.6	52.9	61.2	61.3	
Vehicle Noise:	68.9	68.0	65.0	60.2	68.7	69.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	149	321	693
CNEL:	74	160	345	744

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Scientific Way to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,631 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,032 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.57	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.52	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	65.9	64.1	58.1	66.7	67.3
Medium Trucks:	60.5	59.9	53.5	52.0	60.4	60.7
Heavy Trucks:	61.0	60.4	51.3	52.6	60.9	61.1
Vehicle Noise:	68.7	67.8	64.7	59.9	68.5	68.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	143	308	665
CNEL:	71	154	331	714

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Gateway Boulevard to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,437 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,769 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.07	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.17	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.13	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	59.9	59.3	52.9	51.4	59.8	60.1
Heavy Trucks:	60.4	59.8	50.7	52.0	60.3	60.5
Vehicle Noise:	68.1	67.2	64.1	59.3	67.9	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	281	606
CNEL:	65	140	302	651

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Laguna Canyon Road to Discovery

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,659 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,704 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.09	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.33	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.29	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.2	65.2	63.4	57.3	66.0	66.6	
Medium Trucks:	59.8	59.1	52.7	51.2	59.7	59.9	
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3	
Vehicle Noise:	67.9	67.0	63.9	59.2	67.7	68.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	274	591
CNEL:	64	137	295	635

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Irvine Center Drive  
 Road Segment: Odyssey to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,273 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,755 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.20	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.16	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	68.0	67.1	64.1	59.3	67.8	68.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	280	603
CNEL:	65	140	301	648



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Irvine Center Drive (Edinger)  
 Road Segment: Redhill Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,743 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,114 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.52	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.71	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.67	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.8	67.8	66.0	59.9	68.6	69.2	
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5	
Heavy Trucks:	62.8	62.2	53.2	54.4	62.8	62.9	
Vehicle Noise:	70.5	69.6	66.6	61.8	70.3	70.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	190	410	883
CNEL:	95	204	441	949

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: I-5 SB Off-Ramp to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 69,825 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,761 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.78	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-12.46	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-16.41	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.7	71.6	69.8	63.8	72.4	73.0
Medium Trucks:	66.1	65.4	59.0	57.5	65.9	66.2
Heavy Trucks:	66.1	65.5	56.5	57.7	66.1	66.2
Vehicle Noise:	74.2	73.3	70.4	65.5	74.0	74.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	156	337	725	1,562
CNEL:	168	362	780	1,681

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 77,890 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 6,426 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.26	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-11.98	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-15.94	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.6	72.5	70.7	64.7	73.3	73.9
Medium Trucks:	66.9	66.3	59.9	58.4	66.8	67.1
Heavy Trucks:	67.0	66.4	57.3	58.6	67.0	67.1
Vehicle Noise:	75.1	74.2	71.2	66.4	74.9	75.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	170	367	791	1,704
CNEL:	183	395	851	1,833

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Walnut Avenue to Michelle Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 59,833 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,936 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.11	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.13	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.08	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.0	70.9	69.2	63.1	71.7	72.3
Medium Trucks:	65.4	64.7	58.4	56.8	65.3	65.5
Heavy Trucks:	65.4	64.8	55.8	57.0	65.4	65.5
Vehicle Noise:	73.6	72.6	69.7	64.8	73.4	73.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	141	304	654	1,409
CNEL:	152	327	704	1,516

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: I-405 NB Off-Ramp to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 79,710 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 6,576 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.36	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-11.88	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-15.84	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	75.0	74.0	72.2	66.1	74.8	75.4	
Medium Trucks:	68.4	67.7	61.4	59.8	68.3	68.5	
Heavy Trucks:	68.4	67.9	58.8	60.1	68.4	68.6	
Vehicle Noise:	76.6	75.7	72.7	67.9	76.4	76.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	267	576	1,241	2,673
CNEL:	288	619	1,335	2,875

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Michelle Drive to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 56,450 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,657 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.86	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.38	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.34	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.7	70.7	68.9	62.9	71.5	72.1	
Medium Trucks:	65.1	64.5	58.1	56.6	65.0	65.2	
Heavy Trucks:	65.2	64.6	55.5	56.8	65.1	65.3	
Vehicle Noise:	73.3	72.4	69.4	64.6	73.1	73.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	136	292	629	1,356
CNEL:	146	314	677	1,458

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Main Street to Kelvin Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 67,444 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,564 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.63	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.61	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.56	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.3	73.2	71.5	65.4	74.0	74.6
Medium Trucks:	67.7	67.0	60.7	59.1	67.6	67.8
Heavy Trucks:	67.7	67.1	58.1	59.4	67.7	67.8
Vehicle Noise:	75.9	75.0	72.0	67.1	75.7	76.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	239	515	1,110	2,391
CNEL:	257	554	1,194	2,572

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 84,006 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 6,931 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 130 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 88.792 Medium Trucks: 88.747 Heavy Trucks: 88.792																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.59	-3.84	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-11.65	-3.84	-1.20	-4.96	0.000	0.000
Heavy Trucks:	86.40	-15.61	-3.84	-1.20	-5.14	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.3	71.3	69.5	63.4	72.1	72.7	
Medium Trucks:	65.7	65.0	58.7	57.1	65.6	65.8	
Heavy Trucks:	65.7	65.2	56.1	57.4	65.7	65.9	
Vehicle Noise:	73.9	73.0	70.0	65.1	73.7	74.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	194	418	901	1,940
CNEL:	209	450	969	2,088



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Kelvin Avenue to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 62,646 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,168 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.31	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.93	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.88	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.0	72.9	71.2	65.1	73.7	74.3
Medium Trucks:	67.4	66.7	60.3	58.8	67.3	67.5
Heavy Trucks:	67.4	66.8	57.8	59.0	67.4	67.5
Vehicle Noise:	75.6	74.6	71.7	66.8	75.4	75.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	228	490	1,057	2,276
CNEL:	245	528	1,137	2,449

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 61,804 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,099 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.25	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.99	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.94	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.9	72.9	71.1	65.0	73.7	74.3
Medium Trucks:	67.3	66.6	60.3	58.7	67.2	67.4
Heavy Trucks:	67.3	66.8	57.7	59.0	67.3	67.5
Vehicle Noise:	75.5	74.6	71.6	66.7	75.3	75.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	226	486	1,047	2,256
CNEL:	243	523	1,126	2,427

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Birch Street to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,836 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,699 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.86	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.38	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.34	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.7	67.9	61.9	70.5	71.1
Medium Trucks:	64.1	63.5	57.1	55.6	64.0	64.2
Heavy Trucks:	64.2	63.6	54.5	55.8	64.1	64.3
Vehicle Noise:	72.3	71.4	68.4	63.6	72.1	72.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	116	250	540	1,163
CNEL:	125	269	581	1,251

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Dupont Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 50,671 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,180 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.39	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.85	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.80	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.7	70.6	68.9	62.8	71.4	72.0
Medium Trucks:	65.1	64.4	58.0	56.5	65.0	65.2
Heavy Trucks:	65.1	64.5	55.5	56.7	65.1	65.2
Vehicle Noise:	73.3	72.3	69.4	64.5	73.1	73.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	128	276	594	1,280
CNEL:	138	297	639	1,377

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Alton Parkway to Beckman

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 56,746 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,682 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.88	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.36	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.31	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.6	72.5	70.7	64.7	73.3	73.9
Medium Trucks:	66.9	66.3	59.9	58.4	66.8	67.1
Heavy Trucks:	67.0	66.4	57.4	58.6	67.0	67.1
Vehicle Noise:	75.1	74.2	71.2	66.4	74.9	75.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	213	459	989	2,131
CNEL:	229	494	1,064	2,293

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Fairchild Road to Birch Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 46,728 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,855 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.04	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.20	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.16	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.3	70.3	68.5	62.4	71.1	71.7
Medium Trucks:	64.7	64.0	57.7	56.1	64.6	64.8
Heavy Trucks:	64.8	64.2	55.1	56.4	64.7	64.9
Vehicle Noise:	72.9	72.0	69.0	64.2	72.7	73.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	261	563	1,212
CNEL:	130	281	605	1,304

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Beckman to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 53,974 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,453 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.66	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.57	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.53	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.3	72.3	70.5	64.5	73.1	73.7
Medium Trucks:	66.7	66.1	59.7	58.1	66.6	66.8
Heavy Trucks:	66.8	66.2	57.1	58.4	66.7	66.9
Vehicle Noise:	74.9	74.0	71.0	66.2	74.7	75.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	206	444	957	2,061
CNEL:	222	478	1,029	2,217

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: I-5 NB Off-Ramp to El Camino Real

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 52,710 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,349 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.56	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.68	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.63	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.2	72.2	70.4	64.3	73.0	73.6	
Medium Trucks:	66.6	66.0	59.6	58.0	66.5	66.7	
Heavy Trucks:	66.7	66.1	57.0	58.3	66.6	66.8	
Vehicle Noise:	74.8	73.9	70.9	66.1	74.6	75.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	203	437	942	2,029
CNEL:	218	470	1,013	2,182



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Campus Drive to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 42,224 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,483 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.60	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.64	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.60	-2.29	-1.20	-5.23	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.9	69.8	68.1	62.0	70.6	71.2	
Medium Trucks:	64.3	63.6	57.2	55.7	64.2	64.4	
Heavy Trucks:	64.3	63.7	54.7	55.9	64.3	64.4	
Vehicle Noise:	72.5	71.5	68.6	63.7	72.3	72.7	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	244	526	1,133
CNEL:	122	263	566	1,219

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: El Camino Real to West Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 52,735 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,351 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.56	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.68	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.63	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.2	72.2	70.4	64.3	73.0	73.6
Medium Trucks:	66.6	66.0	59.6	58.0	66.5	66.7
Heavy Trucks:	66.7	66.1	57.0	58.3	66.6	66.8
Vehicle Noise:	74.8	73.9	70.9	66.1	74.6	75.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	203	437	942	2,029
CNEL:	218	470	1,013	2,183

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: West Drive to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 52,526 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,333 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.55	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.69	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.65	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.2	72.2	70.4	64.3	73.0	73.6
Medium Trucks:	66.6	65.9	59.6	58.0	66.5	66.7
Heavy Trucks:	66.6	66.1	57.0	58.3	66.6	66.7
Vehicle Noise:	74.8	73.9	70.9	66.0	74.6	75.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	202	436	939	2,024
CNEL:	218	469	1,011	2,177

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Bryan Avenue to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 49,213 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,060 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.26	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.98	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.93	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.9	71.9	70.1	64.0	72.7	73.3
Medium Trucks:	66.3	65.7	59.3	57.7	66.2	66.4
Heavy Trucks:	66.4	65.8	56.7	58.0	66.3	66.5
Vehicle Noise:	74.5	73.6	70.6	65.8	74.3	74.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	194	418	900	1,938
CNEL:	208	449	968	2,085

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Koll Center to Fairchild Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,496 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,258 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.31	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.93	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.89	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.6	69.5	67.8	61.7	70.3	70.9	
Medium Trucks:	64.0	63.3	57.0	55.4	63.9	64.1	
Heavy Trucks:	64.0	63.4	54.4	55.6	64.0	64.1	
Vehicle Noise:	72.2	71.3	68.3	63.4	72.0	72.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	108	233	503	1,084
CNEL:	117	251	541	1,166

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: MacArthur Boulevard to Koll Center

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,695 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,275 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.33	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.91	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.86	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	69.6	67.8	61.7	70.4	71.0
Medium Trucks:	64.0	63.3	57.0	55.4	63.9	64.1
Heavy Trucks:	64.0	63.5	54.4	55.7	64.0	64.2
Vehicle Noise:	72.2	71.3	68.3	63.4	72.0	72.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	109	234	505	1,087
CNEL:	117	252	543	1,170

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Irvine Boulevard to Portola Pakway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,887 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,466 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.10	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.14	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.10	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	67.9	66.2	60.1	68.7	69.3
Medium Trucks:	62.4	61.7	55.3	53.8	62.3	62.5
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	70.6	69.6	66.7	61.8	70.4	70.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	191	412	887
CNEL:	95	206	443	954

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Warner Avenue to Edinger Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 85,506 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 7,054 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 96 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 64.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 64.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 42.438				
Road Grade: 0.0%		Medium Trucks: 42.344				
Left View: -90.0 degrees		Heavy Trucks: 42.439				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.66	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-11.58	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-15.53	0.96	-1.20	-5.31	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	77.2	76.1	74.4	68.3	76.9	77.6
Medium Trucks:	70.6	69.9	63.6	62.0	70.5	70.7
Heavy Trucks:	70.6	70.0	61.0	62.3	70.6	70.7
Vehicle Noise:	78.8	77.9	74.9	70.0	78.6	79.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	239	515	1,110	2,391
CNEL:	257	554	1,194	2,572



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 70,769 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,838 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 96 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.438 Medium Trucks: 42.344 Heavy Trucks: 42.439																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.84	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-12.40	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-16.35	0.96	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	76.4	75.3	73.6	67.5	76.1	76.7	
Medium Trucks:	69.8	69.1	62.8	61.2	69.7	69.9	
Heavy Trucks:	69.8	69.2	60.2	61.4	69.8	69.9	
Vehicle Noise:	78.0	77.0	74.1	69.2	77.8	78.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	211	454	978	2,107
CNEL:	227	488	1,052	2,267

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jamboree Road  
 Road Segment: Edinger Avenue to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 66,189 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,461 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 96 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 64.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 64.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 42.438				
Road Grade: 0.0%		Medium Trucks: 42.344				
Left View: -90.0 degrees		Heavy Trucks: 42.439				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.55	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-12.69	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-16.64	0.96	-1.20	-5.31	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.1	75.0	73.3	67.2	75.8	76.4
Medium Trucks:	69.5	68.8	62.5	60.9	69.4	69.6
Heavy Trucks:	69.5	68.9	59.9	61.1	69.5	69.6
Vehicle Noise:	77.7	76.7	73.8	68.9	77.5	77.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	202	434	936	2,016
CNEL:	217	467	1,006	2,168

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jeffrey Road  
 Road Segment: Walnut Avenue to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 54,962 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,534 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.61	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.62	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.58	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.1	66.3	60.3	68.9	69.5
Medium Trucks:	62.9	62.3	55.9	54.4	62.8	63.0
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9
Vehicle Noise:	71.0	70.1	67.0	62.3	70.8	71.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	95	205	442	953
CNEL:	102	220	474	1,022

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jeffrey Road  
 Road Segment: I-5 NB Off-Ramp to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 62,169 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,129 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	5.15	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.09	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.04	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.1	67.3	61.2	69.9	70.5
Medium Trucks:	63.9	63.2	56.8	55.3	63.8	64.0
Heavy Trucks:	64.7	64.1	55.1	56.3	64.7	64.8
Vehicle Noise:	72.0	71.1	67.9	63.2	71.8	72.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	105	226	487	1,049
CNEL:	113	242	522	1,125

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jeffrey Road  
 Road Segment: Poplar (Meadows) to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 49,562 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,089 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.17	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.07	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.03	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.7	65.9	59.8	68.5	69.1	
Medium Trucks:	62.5	61.8	55.4	53.9	62.4	62.6	
Heavy Trucks:	63.3	62.7	53.7	55.0	63.3	63.4	
Vehicle Noise:	70.6	69.7	66.5	61.8	70.4	70.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	192	413	889
CNEL:	95	205	443	954

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jeffrey Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,090 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,802 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.85	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.39	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.34	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.2	68.8
Medium Trucks:	62.2	61.5	55.1	53.6	62.0	62.3
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	70.2	69.3	66.2	61.5	70.1	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	183	393	847
CNEL:	91	196	422	909

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Center Drive to Poplar (Meadows)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,470 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,916 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.98	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.26	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.22	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.5	65.7	59.7	68.3	68.9
Medium Trucks:	62.3	61.6	55.3	53.7	62.2	62.4
Heavy Trucks:	63.1	62.6	53.5	54.8	63.1	63.2
Vehicle Noise:	70.4	69.5	66.3	61.6	70.2	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	186	401	864
CNEL:	93	200	430	927

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jeffrey Road  
 Road Segment: I-405 NB Off-Ramp to Quail Creek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,688 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,769 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.81	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.43	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.38	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	62.1	61.5	55.1	53.6	62.0	62.2
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	70.2	69.3	66.2	61.5	70.0	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	391	842
CNEL:	90	195	419	903



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jeffrey Road  
 Road Segment: Barranca Parkway to Irvine Valley College

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,426 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,748 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.79	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.45	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.41	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.3	65.5	59.5	68.1	68.7	
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2	
Heavy Trucks:	62.9	62.4	53.3	54.6	62.9	63.1	
Vehicle Noise:	70.2	69.3	66.1	61.4	70.0	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	389	839
CNEL:	90	194	418	900

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jeffrey Road  
 Road Segment: Quail Creek to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,819 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,780 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.82	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.41	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.37	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	62.1	61.5	55.1	53.6	62.0	62.3
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	70.2	69.3	66.2	61.5	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	182	392	844
CNEL:	91	195	420	905

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Valley College to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 43,854 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,618 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.63	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.60	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.56	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.1	65.4	59.3	67.9	68.5
Medium Trucks:	62.0	61.3	54.9	53.4	61.8	62.1
Heavy Trucks:	62.8	62.2	53.2	54.4	62.8	62.9
Vehicle Noise:	70.0	69.1	66.0	61.3	69.8	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	380	819
CNEL:	88	189	408	879

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jeffrey Road  
 Road Segment: Trabuco Road to Hideaway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 38,135 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,146 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.21	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.17	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.5	64.8	58.7	67.3	67.9
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	69.4	68.5	65.4	60.7	69.2	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	347	747
CNEL:	80	173	372	801

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jeffrey Road  
 Road Segment: Hideaway to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 38,018 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,136 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.01	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.22	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.18	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.5	64.7	58.7	67.3	67.9
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.4
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	69.4	68.5	65.4	60.7	69.2	69.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	346	745
CNEL:	80	172	371	799

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jeffrey Road  
 Road Segment: Roosevelt to Grove

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 40,456 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,338 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.28	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.95	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.91	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.2	65.4	59.4	68.0	68.6
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.9	62.3	53.2	54.5	62.8	63.0
Vehicle Noise:	70.1	69.2	66.0	61.4	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	170	366	788
CNEL:	84	182	392	845

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jeffrey Road  
 Road Segment: Grove to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 40,151 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,312 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
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### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.25	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.99	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.94	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.2	65.4	59.3	68.0	68.6
Medium Trucks:	62.0	61.3	54.9	53.4	61.9	62.1
Heavy Trucks:	62.8	62.2	53.2	54.4	62.8	62.9
Vehicle Noise:	70.1	69.2	66.0	61.3	69.9	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	169	364	784
CNEL:	84	181	390	841

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jeffrey Road  
 Road Segment: Bryan Avenue to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,995 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,392 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.84	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.40	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.36	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.4	65.3	63.6	57.5	66.1	66.7	
Medium Trucks:	60.2	59.5	53.1	51.6	60.0	60.3	
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1	
Vehicle Noise:	68.2	67.3	64.2	59.5	68.0	68.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	134	289	622
CNEL:	67	144	310	667



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jeffrey Road  
 Road Segment: Encore to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,559 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,366 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.60	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-17.83	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-21.79	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.0	62.9	61.1	55.1	63.7	64.3
Medium Trucks:	57.7	57.0	50.7	49.1	57.6	57.8
Heavy Trucks:	58.6	58.0	48.9	50.2	58.5	58.7
Vehicle Noise:	65.8	64.9	61.7	57.1	65.6	66.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	92	199	428
CNEL:	46	99	213	459

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Boulevard to Encore

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,038 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,241 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.01	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-18.25	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-22.21	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.5	62.5	60.7	54.7	63.3	63.9
Medium Trucks:	57.3	56.6	50.3	48.7	57.2	57.4
Heavy Trucks:	58.1	57.6	48.5	49.8	58.1	58.3
Vehicle Noise:	65.4	64.5	61.3	56.6	65.2	65.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	86	186	401
CNEL:	43	93	200	431

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jeronimo Road  
 Road Segment: Goodyear to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,433 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	696 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.72	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.7	61.6	59.9	53.8	62.4	63.0
Medium Trucks:	56.4	55.8	49.4	47.9	56.3	56.6
Heavy Trucks:	57.3	56.7	47.7	48.9	57.3	57.4
Vehicle Noise:	64.5	63.6	60.5	55.8	64.3	64.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	56	122	262
CNEL:	28	60	130	281

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Jeronimo Road  
 Road Segment: Alton Parkway to Goodyear

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,252 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	681 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.62	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.86	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.81	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.6	61.5	59.8	53.7	62.3	62.9
Medium Trucks:	56.4	55.7	49.3	47.8	56.2	56.5
Heavy Trucks:	57.2	56.6	47.6	48.8	57.2	57.3
Vehicle Noise:	64.4	63.5	60.4	55.7	64.2	64.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	56	120	258
CNEL:	28	60	128	277

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Laguna Canyon Road  
 Road Segment: Old Laguna Canyon Road to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 53,167 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,386 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.60	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.64	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.60	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.4	68.7	62.6	71.2	71.8
Medium Trucks:	64.9	64.2	57.8	56.3	64.8	65.0
Heavy Trucks:	64.9	64.3	55.3	56.5	64.9	65.0
Vehicle Noise:	73.1	72.1	69.2	64.3	72.9	73.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	130	281	605	1,303
CNEL:	140	302	650	1,401

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Laguna Canyon Road  
 Road Segment: Laguna Canyon Freeway to Quail Hill Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 16,794 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,385 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.41	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.64	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.60	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.1	67.1	65.3	59.2	67.9	68.5	
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6	
Heavy Trucks:	61.5	61.0	51.9	53.2	61.5	61.7	
Vehicle Noise:	69.7	68.8	65.8	61.0	69.5	70.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	269	579
CNEL:	62	134	289	623

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Laguna Canyon Road  
 Road Segment: Discovery to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,943 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 903 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-3.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-20.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-24.46	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.3	65.2	63.4	57.4	66.0	66.6	
Medium Trucks:	59.7	59.0	52.6	51.1	59.5	59.8	
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8	
Vehicle Noise:	67.8	66.9	64.0	59.1	67.6	68.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	94	202	435
CNEL:	47	101	217	468

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Laguna Canyon Road  
 Road Segment: I-405 Overcrossing to Pasteur

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,635 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 712 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.88	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-21.12	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.08	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.0	65.0	63.2	57.1	65.8	66.4	
Medium Trucks:	59.6	58.9	52.6	51.0	59.5	59.7	
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1	
Vehicle Noise:	67.7	66.8	63.8	59.0	67.5	68.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	342
CNEL:	37	79	171	368



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Laguna Canyon Road  
 Road Segment: Irvine Center Drive to Discovery

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,104 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 751 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-4.07	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-21.30	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-25.26	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.5	64.4	62.6	56.6	65.2	65.8	
Medium Trucks:	58.9	58.2	51.8	50.3	58.7	59.0	
Heavy Trucks:	58.9	58.3	49.3	50.5	58.9	59.0	
Vehicle Noise:	67.0	66.1	63.2	58.3	66.8	67.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	83	179	385
CNEL:	41	89	192	414

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Laguna Canyon Road  
 Road Segment: Quail Hill Parkway to I-405 Overcrossing

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,635 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 712 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.88	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-21.12	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.08	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	65.0	63.2	57.1	65.8	66.4
Medium Trucks:	59.6	58.9	52.6	51.0	59.5	59.7
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1
Vehicle Noise:	67.7	66.8	63.8	59.0	67.5	68.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	342
CNEL:	37	79	171	368

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Laguna Canyon Road  
 Road Segment: Pasteur to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,294 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	684 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-4.47	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-21.71	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-25.66	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.0	62.2	56.2	64.8	65.4
Medium Trucks:	58.5	57.8	51.4	49.9	58.3	58.6
Heavy Trucks:	58.5	57.9	48.9	50.1	58.5	58.6
Vehicle Noise:	66.6	65.7	62.8	57.9	66.4	66.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	168	362
CNEL:	39	84	181	389

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Laguna Canyon Road  
 Road Segment: Waterworks to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,050 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	582 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-5.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-22.41	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-26.37	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.3	61.5	55.5	64.1	64.7
Medium Trucks:	57.8	57.1	50.7	49.2	57.6	57.9
Heavy Trucks:	57.8	57.2	48.2	49.4	57.8	57.9
Vehicle Noise:	65.9	65.0	62.1	57.2	65.7	66.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	70	151	325
CNEL:	35	75	162	349

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Laguna Canyon Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,757 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 557 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-5.36	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-22.60	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-26.55	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.2	63.1	61.3	55.3	63.9	64.5	
Medium Trucks:	57.6	56.9	50.5	49.0	57.4	57.7	
Heavy Trucks:	57.6	57.0	48.0	49.2	57.6	57.7	
Vehicle Noise:	65.8	64.8	61.9	57.0	65.6	66.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	68	147	316
CNEL:	34	73	158	340

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Laguna Canyon Road  
 Road Segment: Barranca Parkway to Waterworks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,177 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 510 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-5.75	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-22.99	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-26.94	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.8	62.7	61.0	54.9	63.5	64.1	
Medium Trucks:	57.2	56.5	50.1	48.6	57.1	57.3	
Heavy Trucks:	57.2	56.6	47.6	48.8	57.2	57.3	
Vehicle Noise:	65.4	64.4	61.5	56.6	65.2	65.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	297
CNEL:	32	69	148	320

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Lake Forest Drive  
 Road Segment: Hidden Canyon to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,913 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,478 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.71	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.91	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.2	64.4	58.4	67.0	67.6
Medium Trucks:	60.8	60.1	53.8	52.2	60.7	60.9
Heavy Trucks:	61.2	60.6	51.6	52.9	61.2	61.3
Vehicle Noise:	68.9	68.0	65.0	60.2	68.7	69.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	111	239	515
CNEL:	55	119	257	554

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Lake Forest Drive  
 Road Segment: Bake Parkway to Hidden Canyon (Romano)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,780 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,467 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.74	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.94	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.1	64.4	58.3	67.0	67.6
Medium Trucks:	60.8	60.1	53.7	52.2	60.7	60.9
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	68.9	68.0	64.9	60.2	68.7	69.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	110	238	513
CNEL:	55	119	256	551



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Lake Forest Drive  
 Road Segment: Tesla to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,227 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,091 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-19.27	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-23.22	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.2	61.4	55.4	64.0	64.6
Medium Trucks:	57.8	57.2	50.8	49.3	57.7	58.0
Heavy Trucks:	58.3	57.7	48.6	49.9	58.2	58.4
Vehicle Noise:	66.0	65.1	62.0	57.2	65.8	66.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	95	204	439
CNEL:	47	102	219	472

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Lake Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,127 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	505 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	50.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 42.814				
Road Grade:	0.0%	Medium Trucks: 42.720				
Left View:	-90.0 degrees	Heavy Trucks: 42.814				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-2.36	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	70.80	-19.60	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	77.97	-23.56	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.1	55.0	53.3	47.2	55.8	56.4
Medium Trucks:	50.9	50.2	43.9	42.3	50.8	51.0
Heavy Trucks:	54.1	53.5	44.5	45.8	54.1	54.2
Vehicle Noise:	59.0	58.1	54.2	50.3	58.8	59.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	42	90
CNEL:	10	21	44	95

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Lynx  
 Road Segment: Irvine Boulevard to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1,330 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	110 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-8.99	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-26.23	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-30.19	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	50.4	49.3	47.5	41.5	50.1	50.7
Medium Trucks:	45.2	44.5	38.2	36.6	45.1	45.3
Heavy Trucks:	48.4	47.8	38.8	40.0	48.4	48.5
Vehicle Noise:	53.3	52.4	48.5	44.6	53.1	53.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	3	6	13	28
CNEL:	3	6	14	30

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: MacArthur Boulevard  
 Road Segment: I-405 SB Off-Ramp to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 57,170 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,717 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 60 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.54	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-13.70	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-17.66	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.6	73.6	71.8	65.8	74.4	75.0
Medium Trucks:	67.9	67.2	60.8	59.3	67.8	68.0
Heavy Trucks:	67.6	67.0	57.9	59.2	67.5	67.7
Vehicle Noise:	76.1	75.2	72.3	67.4	75.9	76.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	248	535	1,152	2,482
CNEL:	267	576	1,241	2,673

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: MacArthur Boulevard  
 Road Segment: Main Street to I-405 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 58,639 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,838 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.65	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-13.59	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-17.55	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	74.8	73.7	71.9	65.9	74.5	75.1	
Medium Trucks:	68.0	67.3	61.0	59.4	67.9	68.1	
Heavy Trucks:	67.7	67.1	58.0	59.3	67.7	67.8	
Vehicle Noise:	76.2	75.3	72.4	67.5	76.0	76.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	252	544	1,171	2,524
CNEL:	272	586	1,262	2,718

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: MacArthur Boulevard  
 Road Segment: I-405 NB Off-Ramp and I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 57,119 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,712 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 60 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.53	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-13.71	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-17.66	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.6	73.6	71.8	65.8	74.4	75.0
Medium Trucks:	67.9	67.2	60.8	59.3	67.8	68.0
Heavy Trucks:	67.6	67.0	57.9	59.2	67.5	67.7
Vehicle Noise:	76.1	75.2	72.3	67.4	75.9	76.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	248	534	1,151	2,480
CNEL:	267	575	1,240	2,671

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: MacArthur Boulevard  
 Road Segment: Jamboree Road to Fairchild Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,795 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,283 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.03	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.98	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	66.7	64.9	58.9	67.5	68.1	
Medium Trucks:	61.5	60.9	54.5	53.0	61.4	61.6	
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5	
Vehicle Noise:	69.6	68.7	65.6	60.9	69.4	69.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	357	768
CNEL:	82	178	382	824

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: MacArthur Boulevard  
 Road Segment: Fairchild Road to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 38,766 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,198 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.10	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.14	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.10	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.6	64.8	58.8	67.4	68.0
Medium Trucks:	61.4	60.7	54.4	52.8	61.3	61.5
Heavy Trucks:	62.3	61.7	52.6	53.9	62.2	62.4
Vehicle Noise:	69.5	68.6	65.4	60.8	69.3	69.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	163	350	755
CNEL:	81	174	376	810



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: MacArthur Boulevard  
 Road Segment: Fitch to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 41,798 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,448 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.43	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.81	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.77	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	62.2	61.5	55.1	53.6	62.0	62.3
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	70.2	69.3	66.2	61.5	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	173	374	805
CNEL:	86	186	401	864

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: MacArthur Boulevard  
 Road Segment: Michelson Drive to Douglas

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,849 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,370 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 56.593				
Road Grade: 0.0%	Medium Trucks: 56.522				
Left View: -90.0 degrees	Heavy Trucks: 56.593				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.33	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-13.91	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-17.87	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.8	60.8	69.4	70.0
Medium Trucks:	63.4	62.8	56.4	54.9	63.3	63.5
Heavy Trucks:	64.3	63.7	54.7	55.9	64.3	64.4
Vehicle Noise:	71.5	70.6	67.5	62.8	71.3	71.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	122	264	568	1,224
CNEL:	131	283	610	1,313

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: MacArthur Boulevard  
 Road Segment: Douglas to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 41,587 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,431 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.40	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-13.84	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-17.79	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	66.9	60.9	69.5	70.1
Medium Trucks:	63.5	62.8	56.5	54.9	63.4	63.6
Heavy Trucks:	64.4	63.8	54.7	56.0	64.3	64.5
Vehicle Noise:	71.6	70.7	67.5	62.9	71.4	71.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	124	267	575	1,239
CNEL:	133	286	617	1,329

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: MacArthur Boulevard  
 Road Segment: Skypark to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 33,703 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,781 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.49	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.75	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.70	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.4	64.6	58.6	67.2	67.8
Medium Trucks:	61.2	60.5	54.2	52.6	61.1	61.3
Heavy Trucks:	62.1	61.5	52.4	53.7	62.0	62.2
Vehicle Noise:	69.3	68.4	65.2	60.6	69.1	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	150	324	697
CNEL:	75	161	347	748

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: MacArthur Boulevard  
 Road Segment: Redhill Avenue to Skypark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,805 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,376 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.81	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.43	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.39	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	60.1	59.5	53.1	51.5	60.0	60.2
Heavy Trucks:	61.0	60.4	51.3	52.6	61.0	61.1
Vehicle Noise:	68.2	67.3	64.2	59.5	68.0	68.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	287	619
CNEL:	66	143	308	664

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: MacArthur Boulevard  
 Road Segment: Birch Street to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,634 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,620 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.14	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-17.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-21.05	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.7	63.6	61.9	55.8	64.4	65.1
Medium Trucks:	58.5	57.8	51.4	49.9	58.3	58.6
Heavy Trucks:	59.3	58.7	49.7	50.9	59.3	59.4
Vehicle Noise:	66.5	65.6	62.5	57.8	66.3	66.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	223	480
CNEL:	51	111	239	514

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: MacArthur Boulevard  
 Road Segment: Campus Drive to Birch Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,815 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.64	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-16.60	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-20.56	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	65.9	64.2	58.1	66.7	67.3
Medium Trucks:	60.7	60.1	53.7	52.2	60.6	60.9
Heavy Trucks:	61.6	61.0	52.0	53.2	61.6	61.7
Vehicle Noise:	68.8	67.9	64.8	60.1	68.6	69.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	175	376	810
CNEL:	87	187	404	869

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Main Street  
 Road Segment: Gillette Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 38,628 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,187 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	69.914			
Road Grade: 0.0%	Medium Trucks:	69.857			
Left View: -90.0 degrees	Heavy Trucks:	69.914			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.08	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.16	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.11	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.2	59.2	67.8	68.4
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	62.7	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	69.9	69.0	65.8	61.2	69.7	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	165	355	764
CNEL:	82	177	380	819



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Main Street  
 Road Segment: MacArthur Boulevard to Mercantile

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,531 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,014 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.84	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.40	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.35	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.8	65.0	58.9	67.6	68.2
Medium Trucks:	61.6	60.9	54.5	53.0	61.5	61.7
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	69.6	68.7	65.6	60.9	69.5	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	342	736
CNEL:	79	170	366	789

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Main Street  
 Road Segment: Executive Park to MacArthur Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,869 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,217 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.51	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.73	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.69	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	65.0	63.2	57.2	65.8	66.4
Medium Trucks:	59.8	59.2	52.8	51.2	59.7	59.9
Heavy Trucks:	60.7	60.1	51.0	52.3	60.6	60.8
Vehicle Noise:	67.9	67.0	63.8	59.2	67.7	68.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	274	591
CNEL:	63	137	294	634

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Main Street  
 Road Segment: Von Karman Avenue to Cartwright

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,763 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,043 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.04	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.7	62.9	56.8	65.5	66.1
Medium Trucks:	59.5	58.8	52.4	50.9	59.4	59.6
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	67.5	66.6	63.5	58.8	67.4	67.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	121	260	560
CNEL:	60	129	279	601

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Main Street  
 Road Segment: McDermott to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,767 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,126 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.32	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.91	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.87	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.9	64.8	63.1	57.0	65.6	66.2	
Medium Trucks:	59.6	59.0	52.6	51.1	59.5	59.8	
Heavy Trucks:	60.5	59.9	50.9	52.1	60.5	60.6	
Vehicle Noise:	67.7	66.8	63.7	59.0	67.5	68.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	124	267	575
CNEL:	62	133	286	617

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Main Street  
 Road Segment: Red Hill Avenue to Executive Circle

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,362 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,092 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.26	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.98	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.94	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.8	64.8	63.0	56.9	65.6	66.2
Medium Trucks:	59.6	58.9	52.5	51.0	59.5	59.7
Heavy Trucks:	60.4	59.8	50.8	52.0	60.4	60.5
Vehicle Noise:	67.7	66.7	63.6	58.9	67.5	67.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	123	264	569
CNEL:	61	131	283	610

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Main Street  
 Road Segment: Jamboree Road to Union

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,079 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,987 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.21	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.16	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.5	62.8	56.7	65.3	65.9
Medium Trucks:	59.3	58.7	52.3	50.8	59.2	59.5
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3
Vehicle Noise:	67.4	66.5	63.4	58.7	67.2	67.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	255	549
CNEL:	59	127	274	589

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Main Street  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,805 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,221 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.08	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.32	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.28	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.1	64.1	62.3	56.2	64.9	65.5	
Medium Trucks:	58.9	58.2	51.9	50.3	58.8	59.0	
Heavy Trucks:	59.7	59.1	50.1	51.4	59.7	59.8	
Vehicle Noise:	67.0	66.1	62.9	58.2	66.8	67.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	177	381
CNEL:	41	88	190	409

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Main Street  
 Road Segment: Siglo to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,387 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,847 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.52	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.48	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.3	64.2	62.4	56.4	65.0	65.6	
Medium Trucks:	59.0	58.4	52.0	50.5	58.9	59.1	
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0	
Vehicle Noise:	67.1	66.2	63.1	58.4	66.9	67.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	113	243	523
CNEL:	56	121	261	562



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Main Street  
 Road Segment: Veneto to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,730 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,958 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.97	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.27	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.23	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.5	64.5	62.7	56.6	65.3	65.9
Medium Trucks:	59.3	58.6	52.3	50.7	59.2	59.4
Heavy Trucks:	60.1	59.5	50.5	51.8	60.1	60.2
Vehicle Noise:	67.4	66.5	63.3	58.6	67.2	67.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	117	253	544
CNEL:	58	126	271	584

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Main Street  
 Road Segment: Paseo Westpark to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,180 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,005 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.93	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.17	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.12	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.2	61.5	55.4	64.0	64.6
Medium Trucks:	58.0	57.4	51.0	49.5	57.9	58.2
Heavy Trucks:	58.9	58.3	49.3	50.5	58.9	59.0
Vehicle Noise:	66.1	65.2	62.1	57.4	65.9	66.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	72	155	334
CNEL:	36	77	167	359

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Main Street  
 Road Segment: Harvard Avenue to San Mateo

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,923 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 984 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.22	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.1	61.4	55.3	63.9	64.5
Medium Trucks:	58.0	57.3	50.9	49.4	57.8	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.0	65.1	62.0	57.3	65.8	66.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	330
CNEL:	35	76	164	354

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Marine Way  
 Road Segment: Sand Canyon Avenue to Ridge Valley (O Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 38,752 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,197 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 42.814				
Road Grade: 0.0%		Medium Trucks: 42.720				
Left View: -90.0 degrees		Heavy Trucks: 42.814				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.61	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	77.72	-13.63	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	82.99	-17.59	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.8	67.0	60.9	69.6	70.2
Medium Trucks:	63.8	63.1	56.8	55.2	63.7	63.9
Heavy Trucks:	65.1	64.5	55.5	56.7	65.1	65.2
Vehicle Noise:	71.8	70.9	67.7	63.1	71.6	72.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	139	299	644
CNEL:	69	149	320	690

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Marine Way  
 Road Segment: Alton Parkway to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,934 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,470 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-14.75	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-18.71	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.7	60.1	53.7	52.1	60.6	60.8
Heavy Trucks:	62.0	61.5	52.4	53.7	62.0	62.1
Vehicle Noise:	68.8	67.9	64.6	60.0	68.6	69.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	108	233	502
CNEL:	54	116	250	538

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Marine Way  
 Road Segment: Lynx to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,584 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,688 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.86	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-14.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-18.34	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.1	64.3	58.2	66.9	67.5
Medium Trucks:	61.1	60.4	54.1	52.5	61.0	61.2
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	69.1	68.2	65.0	60.4	68.9	69.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	247	531
CNEL:	57	123	264	569

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Marine Way  
 Road Segment: County Access to Treble

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,788 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,055 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.40	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.1	62.0	60.2	54.2	62.8	63.4
Medium Trucks:	57.0	56.4	50.0	48.5	56.9	57.1
Heavy Trucks:	58.3	57.8	48.7	50.0	58.3	58.5
Vehicle Noise:	65.1	64.2	60.9	56.3	64.9	65.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	132	285
CNEL:	30	66	142	305

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Marine Way  
 Road Segment: Ridge Valley (O Street) to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,357 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,762 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.22	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.17	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.3	64.2	62.5	56.4	65.0	65.6
Medium Trucks:	59.3	58.6	52.2	50.7	59.1	59.4
Heavy Trucks:	60.6	60.0	51.0	52.2	60.6	60.7
Vehicle Noise:	67.3	66.4	63.1	58.6	67.1	67.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	86	186	401
CNEL:	43	92	199	429



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Marine Way  
 Road Segment: Skyhawk to County Access

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,690 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 964 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.83	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.79	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.7	61.6	59.8	53.8	62.4	63.0
Medium Trucks:	56.6	56.0	49.6	48.1	56.5	56.8
Heavy Trucks:	58.0	57.4	48.3	49.6	57.9	58.1
Vehicle Noise:	64.7	63.8	60.5	56.0	64.5	64.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	125	268
CNEL:	29	62	133	287

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Marine Way  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,956 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,316 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.44	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.0	63.0	61.2	55.1	63.8	64.4
Medium Trucks:	58.0	57.3	51.0	49.4	57.9	58.1
Heavy Trucks:	59.3	58.7	49.7	50.9	59.3	59.4
Vehicle Noise:	66.0	65.1	61.9	57.3	65.8	66.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	330
CNEL:	35	76	164	353

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Marine Way  
 Road Segment: Treble to Lynx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,116 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,577 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.70	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.66	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.8	63.7	62.0	55.9	64.5	65.1
Medium Trucks:	58.8	58.1	51.7	50.2	58.7	58.9
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2
Vehicle Noise:	66.8	65.9	62.6	58.1	66.6	67.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	80	173	372
CNEL:	40	86	185	399

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: McGaw Avenue  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	11,998 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	990 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		57.786		
Left View:	-90.0 degrees	Medium Trucks:		57.717		
Right View:	90.0 degrees	Heavy Trucks:		57.787		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-0.90	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-18.14	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-22.10	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.2	60.1	58.3	52.3	60.9	61.5
Medium Trucks:	55.4	54.7	48.3	46.8	55.3	55.5
Heavy Trucks:	57.2	56.6	47.6	48.9	57.2	57.3
Vehicle Noise:	63.4	62.5	59.1	54.7	63.2	63.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	102	220
CNEL:	24	51	109	235

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: McGaw Avenue  
 Road Segment: Red Hill Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,035 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 993 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-0.89	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-18.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-22.08	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.2	60.1	58.3	52.3	60.9	61.5	
Medium Trucks:	55.4	54.7	48.3	46.8	55.3	55.5	
Heavy Trucks:	57.2	56.7	47.6	48.9	57.2	57.3	
Vehicle Noise:	63.4	62.5	59.1	54.7	63.2	63.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	102	220
CNEL:	24	51	109	235

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: McGaw Avenue  
 Road Segment: Daimler to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,107 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 751 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-2.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-19.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-23.30	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.0	58.9	57.1	51.1	59.7	60.3	
Medium Trucks:	54.2	53.5	47.1	45.6	54.1	54.3	
Heavy Trucks:	56.0	55.4	46.4	47.7	56.0	56.1	
Vehicle Noise:	62.2	61.3	57.9	53.5	62.0	62.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	85	183
CNEL:	20	42	91	196

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: McGaw Avenue  
 Road Segment: Jamboree Road to Murphy Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,320 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	356 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-22.58	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-26.53	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.7	55.7	53.9	47.8	56.5	57.1
Medium Trucks:	50.9	50.3	43.9	42.4	50.8	51.0
Heavy Trucks:	52.8	52.2	43.2	44.4	52.8	52.9
Vehicle Noise:	58.9	58.1	54.6	50.2	58.8	59.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	111
CNEL:	12	26	55	119

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Meadowood  
 Road Segment: Culver Drive to Canyonwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,920 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 901 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 25 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	0.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-17.09	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-21.05	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.6	55.6	53.8	47.8	56.4	57.0
Medium Trucks:	51.5	50.8	44.4	42.9	51.3	51.6
Heavy Trucks:	54.7	54.1	45.1	46.3	54.7	54.8
Vehicle Noise:	59.5	58.7	54.8	50.9	59.4	59.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	26	57	122
CNEL:	13	28	60	130



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Meridian  
 Road Segment: Spectrum to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,338 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 193 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-7.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-24.58	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-28.53	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	52.2	51.1	49.3	43.3	51.9	52.5	
Medium Trucks:	46.7	46.0	39.6	38.1	46.5	46.8	
Heavy Trucks:	49.1	48.6	39.5	40.8	49.1	49.3	
Vehicle Noise:	54.7	53.8	50.2	46.0	54.5	54.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	12	27	58
CNEL:	6	13	29	62

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Meridian  
 Road Segment: Alton Parkway to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1,950 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	161 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-8.13	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-25.36	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-29.32	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	51.4	50.3	48.6	42.5	51.1	51.7
Medium Trucks:	45.9	45.2	38.8	37.3	45.8	46.0
Heavy Trucks:	48.4	47.8	38.7	40.0	48.3	48.5
Vehicle Noise:	53.9	53.0	49.4	45.2	53.7	54.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	11	24	51
CNEL:	5	12	25	55

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Merit  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,204 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 264 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-5.18	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-22.41	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-26.37	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.2	53.1	51.4	45.3	53.9	54.5
Medium Trucks:	49.0	48.4	42.0	40.5	48.9	49.1
Heavy Trucks:	52.2	51.6	42.6	43.9	52.2	52.3
Vehicle Noise:	57.1	56.2	52.3	48.4	56.9	57.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	11	23	50
CNEL:	5	12	25	53

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Michelson Drive  
 Road Segment: Riparian to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,861 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,886 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.92	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.88	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.5	62.8	56.7	65.3	65.9
Medium Trucks:	59.6	58.9	52.5	51.0	59.4	59.7
Heavy Trucks:	60.9	60.3	51.2	52.5	60.9	61.0
Vehicle Noise:	67.6	66.7	63.4	58.9	67.4	67.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	90	195	419
CNEL:	45	97	208	449

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Michelson Drive  
 Road Segment: Almond Tree Lane to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,055 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 747 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.71	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-19.94	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-23.90	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.4	61.6	55.6	64.2	64.8
Medium Trucks:	58.4	57.8	51.4	49.8	58.3	58.5
Heavy Trucks:	59.7	59.1	50.1	51.4	59.7	59.8
Vehicle Noise:	66.4	65.6	62.3	57.7	66.3	66.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	46	98	211
CNEL:	23	49	105	226

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Michelson Drive  
 Road Segment: Von Karman Avenue to Obsidian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,381 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,846 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.01	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.97	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.5	64.4	62.7	56.6	65.2	65.8
Medium Trucks:	59.5	58.8	52.4	50.9	59.3	59.6
Heavy Trucks:	60.8	60.2	51.2	52.4	60.8	60.9
Vehicle Noise:	67.5	66.6	63.3	58.8	67.3	67.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	89	192	414
CNEL:	44	95	206	443

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Michelson Drive  
 Road Segment: Parkside to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,030 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,487 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.91	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.5	61.7	55.7	64.3	64.9
Medium Trucks:	58.5	57.9	51.5	49.9	58.4	58.6
Heavy Trucks:	59.8	59.3	50.2	51.5	59.8	59.9
Vehicle Noise:	66.6	65.7	62.4	57.8	66.4	66.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	166	358
CNEL:	38	83	178	383

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Michelson Drive  
 Road Segment: Gillman to Seton/Sandburg Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,623 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 711 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.92	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-20.16	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-24.11	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.2	63.2	61.4	55.3	64.0	64.6	
Medium Trucks:	58.2	57.5	51.2	49.6	58.1	58.3	
Heavy Trucks:	59.5	58.9	49.9	51.1	59.5	59.6	
Vehicle Noise:	66.2	65.3	62.1	57.5	66.1	66.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	44	95	205
CNEL:	22	47	102	219



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Michelson Drive  
 Road Segment: Carlson to Prince

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,099 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,071 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.72	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	77.72	-15.52	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	82.99	-19.47	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.7	63.6	61.9	55.8	64.4	65.0
Medium Trucks:	58.7	58.0	51.6	50.1	58.6	58.8
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1
Vehicle Noise:	66.7	65.8	62.5	58.0	66.5	67.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	95	204	440
CNEL:	47	101	218	471

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Michelson Drive  
 Road Segment: MacArthur Boulevard to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 18,637 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,538 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.43	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.81	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.77	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.7	63.6	61.9	55.8	64.4	65.0	
Medium Trucks:	58.7	58.0	51.6	50.1	58.5	58.8	
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1	
Vehicle Noise:	66.7	65.8	62.5	58.0	66.5	67.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	170	366
CNEL:	39	84	182	392

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Michelson Drive  
 Road Segment: Harvard Avenue to Parkside

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,101 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,493 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.30	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.94	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.89	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.5	61.7	55.7	64.3	64.9
Medium Trucks:	58.5	57.9	51.5	50.0	58.4	58.7
Heavy Trucks:	59.9	59.3	50.2	51.5	59.8	60.0
Vehicle Noise:	66.6	65.7	62.4	57.9	66.4	66.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	167	359
CNEL:	38	83	178	384

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Michelson Drive  
 Road Segment: Bixby to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,064 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,325 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.41	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.0	63.0	61.2	55.2	63.8	64.4
Medium Trucks:	58.0	57.3	51.0	49.4	57.9	58.1
Heavy Trucks:	59.3	58.8	49.7	51.0	59.3	59.4
Vehicle Noise:	66.1	65.2	61.9	57.3	65.9	66.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	154	332
CNEL:	36	76	165	355

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Michelson Drive  
 Road Segment: Jamboree Road to Carlson

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,519 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,023 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.62	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.62	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.57	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.1	64.4	58.3	66.9	67.5
Medium Trucks:	61.2	60.5	54.1	52.6	61.0	61.3
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	69.2	68.3	65.0	60.5	69.0	69.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	111	239	515
CNEL:	55	119	256	552

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Michelson Drive  
 Road Segment: Teller to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,548 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,025 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.63	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.61	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.57	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.1	64.4	58.3	66.9	67.5
Medium Trucks:	61.2	60.5	54.1	52.6	61.1	61.3
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	69.2	68.3	65.0	60.5	69.0	69.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	111	239	516
CNEL:	55	119	256	552

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Michelson Drive  
 Road Segment: Jordan East to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,510 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 537 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 29.547 Medium Trucks: 29.411 Heavy Trucks: 29.547																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.14	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	77.72	-21.38	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	82.99	-25.33	3.32	-1.20	-5.77	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.5	63.4	61.7	55.6	64.2	64.8
Medium Trucks:	58.5	57.8	51.5	49.9	58.4	58.6
Heavy Trucks:	59.8	59.2	50.2	51.4	59.8	59.9
Vehicle Noise:	66.5	65.6	62.3	57.8	66.3	66.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	79	171
CNEL:	18	39	85	183

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Michelson Drive  
 Road Segment: Culver Drive to Angell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 709 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 16 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 39.306 Medium Trucks: 39.205 Heavy Trucks: 39.307																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.93	1.46	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-20.17	1.48	-1.20	-5.08	0.000	0.000
Heavy Trucks:	82.99	-24.12	1.46	-1.20	-5.56	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.8	62.8	61.0	55.0	63.6	64.2	
Medium Trucks:	57.8	57.2	50.8	49.2	57.7	57.9	
Heavy Trucks:	59.1	58.5	49.5	50.8	59.1	59.2	
Vehicle Noise:	65.9	65.0	61.7	57.1	65.7	66.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	44	95	206
CNEL:	22	47	102	220



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Modjeska (A Street)  
 Road Segment: Portola Springs to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,585 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,121 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 24 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 27.659 Medium Trucks: 27.514 Heavy Trucks: 27.659																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.46	3.75	-1.20	-4.81	0.000	0.000
Medium Trucks:	79.45	-18.69	3.79	-1.20	-5.14	0.000	0.000
Heavy Trucks:	84.25	-22.65	3.75	-1.20	-5.77	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.6	68.5	66.7	60.7	69.3	69.9	
Medium Trucks:	63.3	62.7	56.3	54.8	63.2	63.5	
Heavy Trucks:	64.2	63.6	54.5	55.8	64.1	64.3	
Vehicle Noise:	71.4	70.5	67.3	62.7	71.2	71.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	168	361
CNEL:	39	83	180	387

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Modjeska (A Street)  
 Road Segment: South of Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,669 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 138 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-10.56	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-27.80	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-31.76	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.5	57.5	55.7	49.6	58.3	58.9
Medium Trucks:	52.3	51.6	45.3	43.7	52.2	52.4
Heavy Trucks:	53.1	52.5	43.5	44.8	53.1	53.2
Vehicle Noise:	60.4	59.5	56.3	51.6	60.2	60.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	18	39	83
CNEL:	9	19	41	89

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Muirlands Boulevard  
 Road Segment: Bake Parkway to City Limits

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,592 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,204 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.34	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.0	62.2	56.2	64.8	65.4
Medium Trucks:	58.8	58.2	51.8	50.2	58.7	58.9
Heavy Trucks:	59.7	59.1	50.0	51.3	59.6	59.8
Vehicle Noise:	66.9	66.0	62.8	58.2	66.7	67.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	175	377
CNEL:	40	87	188	405

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Muirlands Boulevard  
 Road Segment: Alton Parkway to Sterling

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,970 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 988 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.20	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.1	61.4	55.3	63.9	64.6
Medium Trucks:	58.0	57.3	50.9	49.4	57.8	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.0	65.1	62.0	57.3	65.9	66.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	331
CNEL:	35	76	165	355

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Muirlands Boulevard  
 Road Segment: Wrigley to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,711 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 966 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.29	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.1	63.1	61.3	55.2	63.9	64.5
Medium Trucks:	57.9	57.2	50.8	49.3	57.8	58.0
Heavy Trucks:	58.7	58.1	49.1	50.3	58.7	58.8
Vehicle Noise:	65.9	65.0	61.9	57.2	65.8	66.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	70	151	326
CNEL:	35	75	162	350

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Newport Coast Drive  
 Road Segment: SR-73 NB Off-Ramp to Turtle Ridge

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,431 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,438 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.06	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.4	63.3	61.6	55.5	64.1	64.7	
Medium Trucks:	58.4	57.7	51.3	49.8	58.3	58.5	
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8	
Vehicle Noise:	66.4	65.5	62.2	57.7	66.2	66.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	75	163	350
CNEL:	37	81	174	375

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Newport Coast Drive  
 Road Segment: Turtle Crest to Bonita Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,390 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,022 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.58	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.54	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.9	61.9	60.1	54.0	62.7	63.3
Medium Trucks:	56.9	56.2	49.9	48.3	56.8	57.0
Heavy Trucks:	58.2	57.6	48.6	49.8	58.2	58.3
Vehicle Noise:	64.9	64.0	60.8	56.2	64.7	65.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	60	129	279
CNEL:	30	64	139	299

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Nightmist  
 Road Segment: Sand Canyon Avenue to Tulip (Road C)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	12,094 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	998 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.20	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.44	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.39	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.3	58.2	56.5	50.4	59.0	59.6
Medium Trucks:	53.8	53.1	46.8	45.2	53.7	53.9
Heavy Trucks:	56.3	55.7	46.7	47.9	56.3	56.4
Vehicle Noise:	61.8	60.9	57.3	53.1	61.6	62.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	80	173
CNEL:	18	40	86	185



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Northwood  
 Road Segment: Yale Avenue to Savannah

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,646 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	383 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.02	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-22.26	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-26.22	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.9	58.8	57.1	51.0	59.6	60.3
Medium Trucks:	54.1	53.5	47.1	45.6	54.0	54.3
Heavy Trucks:	56.0	55.4	46.4	47.6	56.0	56.1
Vehicle Noise:	62.1	61.3	57.8	53.4	62.0	62.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	51	109
CNEL:	12	25	54	117

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Northwood  
 Road Segment: Goldrush to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,628 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 299 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-6.10	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-23.34	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-27.29	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.8	57.8	56.0	50.0	58.6	59.2
Medium Trucks:	53.1	52.4	46.0	44.5	52.9	53.2
Heavy Trucks:	54.9	54.3	45.3	46.5	54.9	55.0
Vehicle Noise:	61.1	60.2	56.7	52.4	60.9	61.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	20	43	93
CNEL:	10	21	46	99

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Oak Canyon Drive  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,939 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 655 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.79	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-21.03	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-24.98	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.3	64.2	62.5	56.4	65.0	65.6	
Medium Trucks:	59.1	58.4	52.0	50.5	59.0	59.2	
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0	
Vehicle Noise:	67.1	66.2	63.1	58.4	67.0	67.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	51	109	235
CNEL:	25	54	117	252

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Pacifica  
 Road Segment: Gateway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,905 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 900 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.90	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.14	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.09	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.4	61.3	59.5	53.5	62.1	62.7	
Medium Trucks:	56.3	55.7	49.3	47.8	56.2	56.5	
Heavy Trucks:	57.7	57.1	48.0	49.3	57.6	57.8	
Vehicle Noise:	64.4	63.5	60.2	55.7	64.2	64.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	55	119	256
CNEL:	27	59	127	274

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Pacifica  
 Road Segment: Alton Parkway to Gateway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,790 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 643 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.36	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.60	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.55	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.9	59.8	58.1	52.0	60.6	61.2	
Medium Trucks:	54.9	54.2	47.8	46.3	54.8	55.0	
Heavy Trucks:	56.2	55.6	46.6	47.8	56.2	56.3	
Vehicle Noise:	62.9	62.0	58.7	54.2	62.7	63.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	44	95	205
CNEL:	22	47	102	219

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan	Project Name: Irvine GP
Road Name: Pacifica	Job Number: 15937
Road Segment: Irvine Center Drive to Fortune Drive (Spectrum Center Drive)	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS															
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>															
Average Daily Traffic (Adt): 7,857 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 648 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15															
<b>Site Data</b>	<b>Vehicle Mix</b>															
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border: none;"> <tr> <td style="text-align: right;">Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td style="text-align: right;">Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td style="text-align: right;">Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </table>	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Autos:	77.5%	12.9%	9.6%	97.42%												
Medium Trucks:	84.8%	4.9%	10.3%	1.84%												
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%												
	<b>Noise Source Elevations (in feet)</b>															
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0															
	<b>Lane Equivalent Distance (in feet)</b>															
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787															

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.52	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.9	59.9	58.1	52.1	60.7	61.3	
Medium Trucks:	54.9	54.2	47.9	46.3	54.8	55.0	
Heavy Trucks:	56.2	55.6	46.6	47.9	56.2	56.3	
Vehicle Noise:	63.0	62.1	58.8	54.2	62.8	63.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	44	96	206
CNEL:	22	47	102	220

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Pacifica  
 Road Segment: Meridian to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,742 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 309 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-6.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-23.78	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-27.74	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	57.7	56.7	54.9	48.8	57.5	58.1	
Medium Trucks:	51.7	51.0	44.7	43.1	51.6	51.8	
Heavy Trucks:	53.0	52.4	43.4	44.6	53.0	53.1	
Vehicle Noise:	59.7	58.8	55.6	51.0	59.5	60.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	13	27	58	126
CNEL:	13	29	62	134

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Park Place  
 Road Segment: Christamon South to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,784 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	312 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-5.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-22.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-26.44	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.3	53.2	51.4	45.4	54.0	54.6
Medium Trucks:	48.8	48.1	41.7	40.2	48.6	48.9
Heavy Trucks:	51.2	50.6	41.6	42.9	51.2	51.3
Vehicle Noise:	56.8	55.9	52.3	48.1	56.6	57.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	80
CNEL:	9	18	39	85



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan Project Name: Irvine GP  
 Road Name: Portola Parkway Job Number: 15937  
 Road Segment: Bee Canyon Access Road to Sand Canyon Avenue

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,658 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,869 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.30	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.4	68.4	66.6	60.5	69.2	69.8	
Medium Trucks:	62.8	62.1	55.8	54.2	62.7	62.9	
Heavy Trucks:	62.9	62.3	53.2	54.5	62.8	63.0	
Vehicle Noise:	71.0	70.1	67.1	62.3	70.8	71.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	152	328	707
CNEL:	76	164	353	761

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Portola Parkway  
 Road Segment: Jeffrey Road to Bee Canyon Access Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,635 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,867 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.30	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.4	68.4	66.6	60.5	69.2	69.8
Medium Trucks:	62.8	62.1	55.8	54.2	62.7	62.9
Heavy Trucks:	62.8	62.3	53.2	54.5	62.8	63.0
Vehicle Noise:	71.0	70.1	67.1	62.2	70.8	71.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	152	328	707
CNEL:	76	164	353	760

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Portola Parkway  
 Road Segment: Arrowhead to Ridge Valley Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,644 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,868 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.30	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.4	68.4	66.6	60.5	69.2	69.8	
Medium Trucks:	62.8	62.1	55.8	54.2	62.7	62.9	
Heavy Trucks:	62.8	62.3	53.2	54.5	62.8	63.0	
Vehicle Noise:	71.0	70.1	67.1	62.2	70.8	71.3	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	152	328	707
CNEL:	76	164	353	761

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Portola Parkway  
 Road Segment: Sand Canyon Avenue to Arrowhead

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,880 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,723 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.46	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.70	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.65	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.1	68.0	66.2	60.2	68.8	69.4	
Medium Trucks:	62.5	61.8	55.4	53.9	62.3	62.6	
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6	
Vehicle Noise:	70.7	69.7	66.8	61.9	70.5	70.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	311	670
CNEL:	72	155	334	721

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Portola Parkway  
 Road Segment: Portola Springs to SR-241 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 16,931 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,397 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.61	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.57	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	67.1	65.3	59.3	67.9	68.5	
Medium Trucks:	61.6	60.9	54.5	53.0	61.4	61.7	
Heavy Trucks:	61.6	61.0	52.0	53.2	61.6	61.7	
Vehicle Noise:	69.7	68.8	65.9	61.0	69.5	70.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	270	582
CNEL:	63	135	291	627

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Portola Parkway  
 Road Segment: Gatepark to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,146 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,157 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.52	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.72	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.68	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	70.0	69.1	66.1	61.2	69.8	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	175	377	812
CNEL:	87	188	405	873

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Portola Parkway  
 Road Segment: ETC-6 (SR-261) NB Off-Ramp to Gatepark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,024 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,147 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.50	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.74	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.70	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.3	65.5	59.5	68.1	68.7	
Medium Trucks:	61.8	61.1	54.7	53.2	61.7	61.9	
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9	
Vehicle Noise:	70.0	69.0	66.1	61.2	69.8	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	376	809
CNEL:	87	188	404	870

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Portola Parkway  
 Road Segment: SR-261 SB Off-Ramp to SR-261 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,264 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,084 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.37	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.87	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.83	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.2	65.4	59.4	68.0	68.6
Medium Trucks:	61.6	61.0	54.6	53.1	61.5	61.8
Heavy Trucks:	61.7	61.1	52.0	53.3	61.7	61.8
Vehicle Noise:	69.8	68.9	65.9	61.1	69.6	70.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	171	368	793
CNEL:	85	184	396	853



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Portola Parkway  
 Road Segment: Jamboree Road to Bellevue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,960 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,059 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.31	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.92	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.88	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.1	65.4	59.3	67.9	68.5
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7
Heavy Trucks:	61.6	61.0	52.0	53.2	61.6	61.7
Vehicle Noise:	69.8	68.8	65.9	61.0	69.6	70.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	170	365	787
CNEL:	85	182	393	846

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Portola Parkway  
 Road Segment: Bellevue to ETC-6 (SR-261) SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,770 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,044 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.28	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.96	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.91	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.1	65.3	59.3	67.9	68.5
Medium Trucks:	61.6	60.9	54.5	53.0	61.4	61.7
Heavy Trucks:	61.6	61.0	52.0	53.2	61.6	61.7
Vehicle Noise:	69.7	68.8	65.9	61.0	69.5	70.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	169	363	783
CNEL:	84	181	391	842

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Portola Parkway  
 Road Segment: Yale Avenue to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,831 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,966 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.11	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.12	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.08	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	66.9	65.2	59.1	67.7	68.3
Medium Trucks:	61.4	60.7	54.4	52.8	61.3	61.5
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5
Vehicle Noise:	69.6	68.6	65.7	60.8	69.4	69.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	164	354	763
CNEL:	82	177	381	821

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Portola Parkway  
 Road Segment: Culver Drive to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,489 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,773 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.34	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.57	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.53	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.5	64.7	58.7	67.3	67.9
Medium Trucks:	60.9	60.3	53.9	52.4	60.8	61.1
Heavy Trucks:	61.0	60.4	51.3	52.6	61.0	61.1
Vehicle Noise:	69.1	68.2	65.2	60.4	68.9	69.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	153	331	712
CNEL:	77	165	356	766

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Portola Parkway  
 Road Segment: Silverado to Portola Springs

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,969 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 987 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.88	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-20.12	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-24.07	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.7	65.6	63.8	57.8	66.4	67.0	
Medium Trucks:	60.0	59.4	53.0	51.5	59.9	60.2	
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2	
Vehicle Noise:	68.2	67.3	64.4	59.5	68.0	68.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	100	215	462
CNEL:	50	107	231	497

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Pusan  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,434 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 201 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-6.37	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-23.61	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-27.57	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	53.0	51.9	50.2	44.1	52.7	53.3	
Medium Trucks:	47.8	47.2	40.8	39.3	47.7	48.0	
Heavy Trucks:	51.0	50.5	41.4	42.7	51.0	51.2	
Vehicle Noise:	55.9	55.0	51.1	47.2	55.7	56.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	19	42
CNEL:	4	10	21	44

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Quail Hill Parkway  
 Road Segment: Shady Canyon Drive to Passage

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,960 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,317 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.76	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.99	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.95	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.5	64.4	62.6	56.6	65.2	65.8	
Medium Trucks:	59.2	58.5	52.2	50.6	59.1	59.3	
Heavy Trucks:	60.1	59.5	50.4	51.7	60.0	60.2	
Vehicle Noise:	67.3	66.4	63.2	58.6	67.1	67.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	86	186	401
CNEL:	43	93	199	430

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Quail Hill Parkway  
 Road Segment: East Knollcrest to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,254 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 846 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.68	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.92	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.87	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.5	62.5	60.7	54.7	63.3	63.9	
Medium Trucks:	57.3	56.6	50.3	48.7	57.2	57.4	
Heavy Trucks:	58.1	57.5	48.5	49.8	58.1	58.2	
Vehicle Noise:	65.4	64.5	61.3	56.6	65.2	65.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	298
CNEL:	32	69	148	320



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan Project Name: Irvine GP  
 Road Name: Quassar Drive (Spectrum) Job Number: 15937  
 Road Segment: Irvine Center Drive to Spectrum Center Drive (Fortune)

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,991 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 164 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 16 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 39.306 Medium Trucks: 39.205 Heavy Trucks: 39.307																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-7.24	1.46	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-24.48	1.48	-1.20	-5.08	0.000	0.000
Heavy Trucks:	77.97	-28.44	1.46	-1.20	-5.56	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	51.8	50.7	48.9	42.9	51.5	52.1
Medium Trucks:	46.6	45.9	39.6	38.0	46.5	46.7
Heavy Trucks:	49.8	49.2	40.2	41.4	49.8	49.9
Vehicle Noise:	54.6	53.8	49.9	46.0	54.5	54.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	8	17	37
CNEL:	4	8	18	39

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Red Hill Avenue  
 Road Segment: MacArthur Boulevard to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 41,924 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,459 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.98	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.26	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.21	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.3	68.2	66.5	60.4	69.0	69.6	
Medium Trucks:	62.8	62.2	55.8	54.3	62.7	63.0	
Heavy Trucks:	63.3	62.7	53.6	54.9	63.2	63.4	
Vehicle Noise:	71.0	70.1	67.0	62.2	70.8	71.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	95	204	440	947
CNEL:	102	219	472	1,018

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Red Hill Avenue  
 Road Segment: I-405 Over Crossing to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,812 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,717 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.06	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.30	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.25	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.9	66.8	65.1	59.0	67.6	68.2	
Medium Trucks:	61.5	60.8	54.4	52.9	61.3	61.6	
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0	
Vehicle Noise:	69.6	68.7	65.6	60.8	69.4	69.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	123	264	570
CNEL:	61	132	284	612

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Red Hill Avenue  
 Road Segment: Alton Parkway to Deere Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 30,843 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,545 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.65	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.59	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.55	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	66.9	65.1	59.1	67.7	68.3
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6
Heavy Trucks:	61.9	61.3	52.3	53.6	61.9	62.0
Vehicle Noise:	69.6	68.7	65.7	60.9	69.5	69.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	358	772
CNEL:	83	179	385	830

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Red Hill Avenue  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,669 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,448 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.48	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.76	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.72	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	65.0	58.9	67.5	68.1
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	61.8	61.2	52.1	53.4	61.7	61.9
Vehicle Noise:	69.5	68.6	65.5	60.7	69.3	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	349	752
CNEL:	81	174	375	808

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Red Hill Avenue  
 Road Segment: Deere Avenue to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,582 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,440 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.47	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.77	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.73	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	64.9	58.9	67.5	68.1
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	61.8	61.2	52.1	53.4	61.7	61.9
Vehicle Noise:	69.5	68.5	65.5	60.7	69.3	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	349	751
CNEL:	81	174	374	807

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Red Hill Avenue  
 Road Segment: Skypark East to MacArthur Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,882 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,640 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.26	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.50	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.45	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.0	67.9	66.2	60.1	68.7	69.3	
Medium Trucks:	62.6	61.9	55.5	54.0	62.5	62.7	
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1	
Vehicle Noise:	70.7	69.8	66.7	61.9	70.5	71.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	140	301	648
CNEL:	70	150	323	696

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Red Hill Avenue  
 Road Segment: Main Street to Skypark East

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,274 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,425 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.87	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.11	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.06	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.3	65.6	59.5	68.1	68.7	
Medium Trucks:	62.0	61.3	54.9	53.4	61.8	62.1	
Heavy Trucks:	62.4	61.8	52.7	54.0	62.4	62.5	
Vehicle Noise:	70.1	69.2	66.1	61.3	69.9	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	274	590
CNEL:	63	136	294	633



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Research Drive  
 Road Segment: Hubble to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,761 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,043 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.09	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.04	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.4	66.3	64.5	58.5	67.1	67.7	
Medium Trucks:	61.1	60.5	54.1	52.5	61.0	61.2	
Heavy Trucks:	62.0	61.4	52.3	53.6	61.9	62.1	
Vehicle Noise:	69.2	68.3	65.1	60.5	69.0	69.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	249	537
CNEL:	58	124	267	576

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Research Drive  
 Road Segment: Scientific to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,994 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,320 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.75	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.99	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.94	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.5	64.4	62.6	56.6	65.2	65.8
Medium Trucks:	59.2	58.6	52.2	50.6	59.1	59.3
Heavy Trucks:	60.1	59.5	50.4	51.7	60.0	60.2
Vehicle Noise:	67.3	66.4	63.2	58.6	67.1	67.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	86	186	401
CNEL:	43	93	200	430

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Research Drive  
 Road Segment: Bake Parkway to Muller

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,604 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,040 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.78	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.02	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.98	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.4	61.6	55.5	64.2	64.8
Medium Trucks:	58.2	57.5	51.2	49.6	58.1	58.3
Heavy Trucks:	59.0	58.4	49.4	50.7	59.0	59.1
Vehicle Noise:	66.3	65.4	62.2	57.5	66.1	66.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	342
CNEL:	37	79	170	367

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Research Drive  
 Road Segment: Irvine Center Drive to Bunsen

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,824 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 810 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.86	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.06	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.4	62.3	60.5	54.5	63.1	63.7
Medium Trucks:	57.1	56.4	50.1	48.5	57.0	57.2
Heavy Trucks:	57.9	57.4	48.3	49.6	57.9	58.1
Vehicle Noise:	65.2	64.3	61.1	56.5	65.0	65.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	62	135	290
CNEL:	31	67	144	311

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan	Project Name: Irvine GP
Road Name: Ridge Valley (O Street)	Job Number: 15937
Road Segment: Irvine Boulevard to Trabuco Road (Great Park Boulevard)	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS															
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>															
Average Daily Traffic (Adt): 15,535 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,282 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15															
<b>Site Data</b>	<b>Vehicle Mix</b>															
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border: none;"> <tr> <td style="text-align: right;">Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td style="text-align: right;">Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td style="text-align: right;">Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </table>	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Autos:	77.5%	12.9%	9.6%	97.42%												
Medium Trucks:	84.8%	4.9%	10.3%	1.84%												
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%												
	<b>Noise Source Elevations (in feet)</b>															
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0															
	<b>Lane Equivalent Distance (in feet)</b>															
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787															

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.87	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.07	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.3	64.3	62.5	56.5	65.1	65.7	
Medium Trucks:	59.1	58.4	52.1	50.5	59.0	59.2	
Heavy Trucks:	59.9	59.4	50.3	51.6	59.9	60.0	
Vehicle Noise:	67.2	66.3	63.1	58.4	67.0	67.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	85	183	393
CNEL:	42	91	196	422

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Ridge Valley (O Street)  
 Road Segment: Portola Parkway to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,575 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,037 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.79	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.03	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.99	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.4	61.6	55.5	64.2	64.8
Medium Trucks:	58.2	57.5	51.1	49.6	58.1	58.3
Heavy Trucks:	59.0	58.4	49.4	50.6	59.0	59.1
Vehicle Noise:	66.3	65.4	62.2	57.5	66.1	66.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	342
CNEL:	37	79	170	367

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan	Project Name: Irvine GP
Road Name: Ridge Valley (O Street)	Job Number: 15937
Road Segment: Trabuco Road (Great Park Boulevard) to Marine Way	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,130 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 918 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.52	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.9	62.8	61.1	55.0	63.6	64.2
Medium Trucks:	57.7	57.0	50.6	49.1	57.5	57.8
Heavy Trucks:	58.5	57.9	48.9	50.1	58.5	58.6
Vehicle Noise:	65.7	64.8	61.7	57.0	65.5	66.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	68	146	315
CNEL:	34	73	157	338

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Ridge Valley (O Street)  
 Road Segment: Ranchland to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	935 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	77 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-13.08	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-30.31	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-34.27	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.0	55.0	53.2	47.1	55.8	56.4
Medium Trucks:	49.8	49.1	42.8	41.2	49.7	49.9
Heavy Trucks:	50.6	50.0	41.0	42.2	50.6	50.7
Vehicle Noise:	57.9	56.9	53.8	49.1	57.7	58.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	12	26	56
CNEL:	6	13	28	61



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Ridgeline Drive  
 Road Segment: Concordia East to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,575 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,285 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 35 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 40.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 40.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 32.140				
Road Grade: 0.0%		Medium Trucks: 32.016				
Left View: -90.0 degrees		Heavy Trucks: 32.141				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	0.23	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-17.01	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	81.57	-20.96	2.78	-1.20	-5.56	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	65.0	63.3	57.2	65.8	66.5
Medium Trucks:	60.3	59.7	53.3	51.8	60.2	60.5
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	68.3	67.5	64.0	59.6	68.2	68.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	140	301
CNEL:	32	69	149	322

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Ridgeline Drive  
 Road Segment: Turtle Rock Drive to San Simeon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,257 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,176 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 32.140 Medium Trucks: 32.016 Heavy Trucks: 32.141																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-0.15	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-17.39	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	81.57	-21.35	2.78	-1.20	-5.56	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.7	62.9	56.8	65.5	66.1
Medium Trucks:	60.0	59.3	52.9	51.4	59.8	60.1
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	67.9	67.1	63.6	59.2	67.8	68.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	132	284
CNEL:	30	65	141	303

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Rockfield Avenue  
 Road Segment: Whatney to McLaren

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,880 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,310 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.78	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.02	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.97	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.4	64.4	62.6	56.6	65.2	65.8
Medium Trucks:	59.2	58.5	52.2	50.6	59.1	59.3
Heavy Trucks:	60.0	59.4	50.4	51.7	60.0	60.1
Vehicle Noise:	67.3	66.4	63.2	58.5	67.1	67.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	86	185	399
CNEL:	43	92	199	428

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Rockfield Avenue  
 Road Segment: Bake Parkway to Whatney

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,694 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 552 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.72	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.7	60.6	58.9	52.8	61.4	62.0	
Medium Trucks:	55.4	54.8	48.4	46.9	55.3	55.6	
Heavy Trucks:	56.3	55.7	46.7	47.9	56.3	56.4	
Vehicle Noise:	63.5	62.6	59.5	54.8	63.3	63.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	48	104	224
CNEL:	24	52	112	241

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Rockfield Avenue  
 Road Segment: Thomas to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	5,145 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	424 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-5.67	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-22.91	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-26.87	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.5	59.5	57.7	51.7	60.3	60.9
Medium Trucks:	54.3	53.6	47.3	45.7	54.2	54.4
Heavy Trucks:	55.1	54.6	45.5	46.8	55.1	55.2
Vehicle Noise:	62.4	61.5	58.3	53.6	62.2	62.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	41	87	188
CNEL:	20	44	94	202

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Roosevelt  
 Road Segment: Jeffrey Road to Vision

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,443 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,274 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.39	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.63	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.58	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.9	62.8	61.0	55.0	63.6	64.2	
Medium Trucks:	57.9	57.2	50.8	49.3	57.7	58.0	
Heavy Trucks:	59.2	58.6	49.5	50.8	59.1	59.3	
Vehicle Noise:	65.9	65.0	61.7	57.2	65.7	66.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	70	150	323
CNEL:	35	75	161	346

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Roosevelt  
 Road Segment: Yale Avenue to Van Buren

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,812 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	727 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	30.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	30.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 29.547				
Road Grade:	0.0%	Medium Trucks: 29.411				
Left View:	-90.0 degrees	Heavy Trucks: 29.547				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.82	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	77.72	-20.06	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	82.99	-24.02	3.32	-1.20	-5.77	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.8	64.7	63.0	56.9	65.5	66.2
Medium Trucks:	59.8	59.1	52.8	51.2	59.7	59.9
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2
Vehicle Noise:	67.8	66.9	63.6	59.1	67.6	68.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	45	97	209
CNEL:	22	48	104	223

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Roosevelt  
 Road Segment: Vision to Bay Tree

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,654 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,209 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.62	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.85	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.81	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.7	62.6	60.8	54.8	63.4	64.0	
Medium Trucks:	57.6	57.0	50.6	49.0	57.5	57.7	
Heavy Trucks:	58.9	58.4	49.3	50.6	58.9	59.0	
Vehicle Noise:	65.7	64.8	61.5	56.9	65.5	65.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	145	312
CNEL:	33	72	155	334



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Roosevelt  
 Road Segment: Nimitz to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,187 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,170 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.76	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.99	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.95	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.5	62.4	60.7	54.6	63.2	63.9
Medium Trucks:	57.5	56.8	50.4	48.9	57.4	57.6
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	65.5	64.6	61.3	56.8	65.3	65.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	66	142	305
CNEL:	33	70	152	327

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Roosevelt  
 Road Segment: Tulip (Road C) to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,745 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,134 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.89	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.09	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.4	62.3	60.5	54.5	63.1	63.7	
Medium Trucks:	57.3	56.7	50.3	48.8	57.2	57.5	
Heavy Trucks:	58.7	58.1	49.0	50.3	58.6	58.8	
Vehicle Noise:	65.4	64.5	61.2	56.7	65.2	65.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	139	299
CNEL:	32	69	149	320

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Royal Oak  
 Road Segment: Alton Parkway to Eaglecreek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,830 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	398 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	30.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	30.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 29.547				
Road Grade:	0.0%	Medium Trucks: 29.411				
Left View:	-90.0 degrees	Heavy Trucks: 29.547				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-4.86	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	75.75	-22.09	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	81.57	-26.05	3.32	-1.20	-5.77	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.6	60.5	58.7	52.7	61.3	61.9
Medium Trucks:	55.8	55.1	48.8	47.2	55.7	55.9
Heavy Trucks:	57.6	57.1	48.0	49.3	57.6	57.8
Vehicle Noise:	63.8	62.9	59.5	55.1	63.6	64.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	113
CNEL:	12	26	56	120

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: Oak Canyon Drive to Burt Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 48,414 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,994 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.61	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.63	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.59	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	68.8	67.1	61.0	69.7	70.3
Medium Trucks:	63.5	62.8	56.4	54.9	63.4	63.6
Heavy Trucks:	63.9	63.3	54.3	55.5	63.9	64.0
Vehicle Noise:	71.6	70.7	67.6	62.9	71.4	71.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	104	225	484	1,043
CNEL:	112	241	520	1,120

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: Irvine Center Drive to Oak Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,483 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,752 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.33	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.90	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.86	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.6	68.6	66.8	60.8	69.4	70.0	
Medium Trucks:	63.2	62.5	56.2	54.6	63.1	63.3	
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7	
Vehicle Noise:	71.3	70.4	67.4	62.6	71.1	71.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	464	1,000
CNEL:	107	232	499	1,075

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-405 NB Off-Ramp to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,364 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,660 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 47.329				
Road Grade: 0.0%	Medium Trucks: 47.244				
Left View: -90.0 degrees	Heavy Trucks: 47.329				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.23	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.01	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.97	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.5	71.4	69.7	63.6	72.2	72.8
Medium Trucks:	66.1	65.4	59.0	57.5	65.9	66.2
Heavy Trucks:	66.5	65.9	56.8	58.1	66.4	66.6
Vehicle Noise:	74.2	73.3	70.2	65.4	74.0	74.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	111	238	513	1,106
CNEL:	119	256	551	1,188

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: Burt Road to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 51,493 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,248 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.87	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.36	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.32	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	69.5	67.8	61.7	70.3	70.9
Medium Trucks:	64.2	63.5	57.1	55.6	64.0	64.3
Heavy Trucks:	64.6	64.0	54.9	56.2	64.6	64.7
Vehicle Noise:	72.3	71.4	68.3	63.5	72.1	72.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	237	512	1,102
CNEL:	118	255	550	1,184

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: Marine to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 59,568 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,914 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.51	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-12.73	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-16.69	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.6	71.5	69.8	63.7	72.3	72.9
Medium Trucks:	66.2	65.5	59.1	57.6	66.0	66.3
Heavy Trucks:	66.6	66.0	57.0	58.2	66.6	66.7
Vehicle Noise:	74.3	73.4	70.3	65.5	74.1	74.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	188	404	871	1,876
CNEL:	202	434	935	2,015



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: Trabuco Road to Towngate

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 42,099 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,473 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.00	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.24	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.20	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.2	66.5	60.4	69.0	69.6
Medium Trucks:	62.9	62.2	55.8	54.3	62.8	63.0
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4
Vehicle Noise:	71.0	70.1	67.0	62.3	70.8	71.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	95	205	441	950
CNEL:	102	220	474	1,021

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: Barranca Parkway to Waterworks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,308 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,995 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.36	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.88	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.84	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.2	61.6	55.2	53.6	62.1	62.3
Heavy Trucks:	62.6	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	70.4	69.4	66.4	61.6	70.2	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	400	861
CNEL:	92	199	429	925

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-5 SB Off-Ramp to Marine

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 49,577 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,090 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.71	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-13.53	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-17.49	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.8	70.7	69.0	62.9	71.5	72.1
Medium Trucks:	65.4	64.7	58.3	56.8	65.3	65.5
Heavy Trucks:	65.8	65.2	56.2	57.4	65.8	65.9
Vehicle Noise:	73.5	72.6	69.5	64.8	73.3	73.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	166	358	770	1,660
CNEL:	178	384	828	1,783

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: Hospital to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,191 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,821 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.10	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.14	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.10	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.3	65.6	59.5	68.1	68.7	
Medium Trucks:	62.0	61.3	54.9	53.4	61.8	62.1	
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5	
Vehicle Noise:	70.1	69.2	66.1	61.3	69.9	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	178	384	827
CNEL:	89	191	412	889

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: Nightmist to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,045 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,799 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.39	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-13.85	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-17.81	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.4	68.7	62.6	71.2	71.8
Medium Trucks:	65.0	64.4	58.0	56.5	64.9	65.2
Heavy Trucks:	65.5	64.9	55.8	57.1	65.4	65.6
Vehicle Noise:	73.2	72.3	69.2	64.4	73.0	73.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	158	340	733	1,580
CNEL:	170	366	788	1,697

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,745 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,866 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.16	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.07	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.03	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.4	70.4	68.6	62.5	71.2	71.8
Medium Trucks:	65.0	64.3	58.0	56.4	64.9	65.1
Heavy Trucks:	65.4	64.8	55.8	57.0	65.4	65.5
Vehicle Noise:	73.1	72.2	69.2	64.4	72.9	73.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	94	202	436	939
CNEL:	101	217	469	1,009

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-5 NB Off-Ramp to Nightmist

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,445 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,832 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.43	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-13.81	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-17.77	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.5	68.7	62.6	71.3	71.9
Medium Trucks:	65.1	64.4	58.1	56.5	65.0	65.2
Heavy Trucks:	65.5	64.9	55.9	57.1	65.5	65.6
Vehicle Noise:	73.2	72.3	69.3	64.5	73.0	73.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	159	342	738	1,589
CNEL:	171	368	792	1,707

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: Towngate to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 35,972 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,968 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.32	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.92	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.88	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.6	65.8	59.7	68.4	69.0
Medium Trucks:	62.2	61.5	55.2	53.6	62.1	62.3
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	70.3	69.4	66.4	61.6	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	184	397	855
CNEL:	92	198	427	919



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: Waterworks to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,409 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,591 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.73	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.51	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.47	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.0	67.0	65.2	59.1	67.8	68.4	
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7	
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1	
Vehicle Noise:	69.7	68.8	65.8	61.0	69.5	70.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	168	363	782
CNEL:	84	181	390	840

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: Irvine Boulevard to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,121 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,495 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.86	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.2	64.5	58.4	67.0	67.6
Medium Trucks:	60.9	60.2	53.8	52.3	60.7	61.0
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4
Vehicle Noise:	69.0	68.1	65.0	60.2	68.8	69.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	112	241	519
CNEL:	56	120	259	558

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: Roosevelt to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,585 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,266 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.73	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-14.51	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-18.46	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.8	68.0	61.9	70.6	71.2
Medium Trucks:	64.4	63.7	57.4	55.8	64.3	64.5
Heavy Trucks:	64.8	64.2	55.2	56.4	64.8	64.9
Vehicle Noise:	72.5	71.6	68.6	63.8	72.3	72.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	308	663	1,428
CNEL:	153	331	712	1,535

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Sand Canyon Avenue  
 Road Segment: Alton Parkway to Hospital

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,835 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,626 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.78	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.45	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.41	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.7	59.6	68.2	68.8
Medium Trucks:	62.1	61.4	55.0	53.5	61.9	62.2
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	70.2	69.3	66.2	61.5	70.0	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	172	371	800
CNEL:	86	185	399	859

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Sand Canyon/Shady Canyon  
 Road Segment: Quail Hill Parkway to I-405 SB Ramps

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,794 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,881 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.33	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.90	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.86	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.6	68.5	66.8	60.7	69.3	69.9	
Medium Trucks:	63.2	62.5	56.1	54.6	63.0	63.3	
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7	
Vehicle Noise:	71.3	70.4	67.3	62.5	71.1	71.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	153	329	709
CNEL:	76	164	354	762

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Scientific Way  
 Road Segment: Irvine Center Drive to Wald

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,616 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 133 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-9.61	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-26.85	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-30.81	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.4	51.4	49.6	43.6	52.2	52.8
Medium Trucks:	46.7	46.0	39.6	38.1	46.5	46.8
Heavy Trucks:	48.5	47.9	38.9	40.1	48.5	48.6
Vehicle Noise:	54.7	53.8	50.4	46.0	54.5	54.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	12	27	58
CNEL:	6	13	29	62

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Shady Canyon Drive  
 Road Segment: Culver Drive/Bonita Canyon Drive to Cloverfield

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,410 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	694 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.00	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-21.23	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-25.19	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.8	64.0	58.0	66.6	67.2
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5
Heavy Trucks:	60.8	60.2	51.2	52.4	60.8	60.9
Vehicle Noise:	68.5	67.6	64.6	59.8	68.3	68.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	135	291
CNEL:	31	67	145	312

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Shady Canyon Drive  
 Road Segment: Bommer Canyon Road to Sunnyhill

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,350 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 606 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.58	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-21.82	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.78	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.3	64.3	62.5	56.4	65.1	65.7	
Medium Trucks:	58.9	58.2	51.9	50.3	58.8	59.0	
Heavy Trucks:	59.3	58.7	49.7	50.9	59.3	59.4	
Vehicle Noise:	67.0	66.1	63.1	58.3	66.8	67.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	66	143	307
CNEL:	33	71	153	330



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Skyhawk  
 Road Segment: Great Park Boulevard to Marine Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,035 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 993 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 25 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	0.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-16.67	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-20.62	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.1	56.0	54.2	48.2	56.8	57.4
Medium Trucks:	51.9	51.2	44.9	43.3	51.8	52.0
Heavy Trucks:	55.1	54.5	45.5	46.7	55.1	55.2
Vehicle Noise:	59.9	59.1	55.2	51.3	59.8	60.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	13	28	60	130
CNEL:	14	30	64	138

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Southwood  
 Road Segment: Yale Avenue to Colt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,003 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 248 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-6.92	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-24.16	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-28.11	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	58.0	57.0	55.2	49.1	57.8	58.4	
Medium Trucks:	52.2	51.6	45.2	43.7	52.1	52.4	
Heavy Trucks:	54.1	53.5	44.5	45.7	54.1	54.2	
Vehicle Noise:	60.2	59.4	55.9	51.5	60.1	60.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	18	38	82
CNEL:	9	19	40	87

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Southwood  
 Road Segment: Challenger to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,867 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 237 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-7.12	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-24.36	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-28.31	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.8	56.8	55.0	48.9	57.6	58.2
Medium Trucks:	52.0	51.4	45.0	43.5	51.9	52.2
Heavy Trucks:	53.9	53.3	44.3	45.5	53.9	54.0
Vehicle Noise:	60.0	59.2	55.7	51.3	59.9	60.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	79
CNEL:	8	18	39	85

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Spectrum Center Drive (Fortune)  
 Road Segment: Pacifica to Quassar Drive (Spectrum )

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,702 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 965 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.58	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.54	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.2	58.1	56.3	50.3	58.9	59.5
Medium Trucks:	53.7	53.0	46.6	45.1	53.5	53.8
Heavy Trucks:	56.1	55.6	46.5	47.8	56.1	56.2
Vehicle Noise:	61.7	60.8	57.2	53.0	61.5	61.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	79	169
CNEL:	18	39	84	181

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Spectrum Center Drive (Fortune)  
 Road Segment: Quassar Drive (Spectrum ) to Gatewayb

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,210 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,090 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	0.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.01	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.7	58.6	56.9	50.8	59.4	60.0
Medium Trucks:	54.2	53.5	47.2	45.6	54.1	54.3
Heavy Trucks:	56.7	56.1	47.0	48.3	56.6	56.8
Vehicle Noise:	62.2	61.3	57.7	53.5	62.0	62.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	40	85	184
CNEL:	20	42	91	196

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Sunnyhill  
 Road Segment: Shady Canyon Drive to Turtle Rock Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,827 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 481 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-2.58	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-19.82	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-23.77	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	53.9	52.8	51.1	45.0	53.6	54.3	
Medium Trucks:	48.7	48.1	41.7	40.2	48.6	48.9	
Heavy Trucks:	52.0	51.4	42.3	43.6	51.9	52.1	
Vehicle Noise:	56.8	56.0	52.0	48.1	56.6	57.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	80
CNEL:	9	18	40	85

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Technology Drive  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,461 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,265 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.64	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.59	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.8	65.0	58.9	67.6	68.2
Medium Trucks:	61.6	60.9	54.5	53.0	61.5	61.7
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	69.7	68.7	65.6	60.9	69.5	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	124	267	575
CNEL:	62	133	286	617

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan	Project Name: Irvine GP
Road Name: Technology Drive	Job Number: 15937
Road Segment: Old Laguna Canyon Road to I-5/SR-133 Undercrossing	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,421 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,190 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border: none;"> <thead> <tr> <th style="text-align: left;">VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.20	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.39	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.0	64.0	62.2	56.1	64.8	65.4
Medium Trucks:	58.8	58.1	51.7	50.2	58.7	58.9
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7
Vehicle Noise:	66.9	65.9	62.8	58.1	66.7	67.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	81	174	374
CNEL:	40	87	186	402



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Technology Drive  
 Road Segment: I-5/SR-133 to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,458 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 945 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.20	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.39	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.0	63.0	61.2	55.1	63.8	64.4
Medium Trucks:	57.8	57.1	50.7	49.2	57.7	57.9
Heavy Trucks:	58.6	58.0	49.0	50.2	58.6	58.7
Vehicle Noise:	65.9	64.9	61.8	57.1	65.7	66.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	149	321
CNEL:	34	74	160	344

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Technology Drive  
 Road Segment: Ada to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,747 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	227 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-8.40	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-25.64	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-29.59	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.8	56.8	55.0	48.9	57.6	58.2
Medium Trucks:	51.6	50.9	44.5	43.0	51.5	51.7
Heavy Trucks:	52.4	51.8	42.8	44.0	52.4	52.5
Vehicle Noise:	59.7	58.7	55.6	50.9	59.5	59.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	27	58	124
CNEL:	13	29	62	133

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Toledo Way  
 Road Segment: Bake Parkway to City Limits

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,101 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 668 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.16	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-21.40	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-25.35	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.8	62.7	61.0	54.9	63.5	64.1	
Medium Trucks:	57.4	56.7	50.3	48.8	57.2	57.5	
Heavy Trucks:	57.8	57.2	48.2	49.4	57.8	57.9	
Vehicle Noise:	65.5	64.6	61.5	56.7	65.3	65.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	141	304
CNEL:	33	70	151	326

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Toledo Way  
 Road Segment: Goodyear to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,577 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	543 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.06	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.30	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.26	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.9	61.8	60.1	54.0	62.6	63.2
Medium Trucks:	56.5	55.8	49.4	47.9	56.3	56.6
Heavy Trucks:	56.9	56.3	47.3	48.5	56.9	57.0
Vehicle Noise:	64.6	63.7	60.6	55.8	64.4	64.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	57	123	264
CNEL:	28	61	132	284

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Toledo Way  
 Road Segment: Alton Parkway to Parker

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,118 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	505 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.38	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.62	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.57	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.6	61.5	59.7	53.7	62.3	62.9
Medium Trucks:	56.1	55.5	49.1	47.6	56.0	56.3
Heavy Trucks:	56.6	56.0	46.9	48.2	56.5	56.7
Vehicle Noise:	64.3	63.4	60.3	55.5	64.1	64.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	117	252
CNEL:	27	58	126	271

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Trabuco Road  
 Road Segment: Keystone to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,020 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,157 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.51	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	63.8	62.1	56.0	64.6	65.2
Medium Trucks:	58.7	58.0	51.6	50.1	58.5	58.8
Heavy Trucks:	59.5	58.9	49.9	51.1	59.5	59.6
Vehicle Noise:	66.7	65.8	62.7	58.0	66.5	67.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	171	367
CNEL:	39	85	183	394

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Trabuco Road  
 Road Segment: Jeffrey Road to Keystone

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,755 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,135 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.40	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.64	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.60	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.8	63.7	62.0	55.9	64.6	65.2
Medium Trucks:	58.6	57.9	51.5	50.0	58.5	58.7
Heavy Trucks:	59.4	58.8	49.8	51.0	59.4	59.5
Vehicle Noise:	66.6	65.7	62.6	57.9	66.5	66.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	168	363
CNEL:	39	84	181	389

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Trabuco Road  
 Road Segment: Culver Drive to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,898 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,064 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.68	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.92	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.88	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.5	63.5	61.7	55.6	64.3	64.9
Medium Trucks:	58.3	57.6	51.3	49.7	58.2	58.4
Heavy Trucks:	59.1	58.5	49.5	50.8	59.1	59.2
Vehicle Noise:	66.4	65.5	62.3	57.6	66.2	66.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	75	161	347
CNEL:	37	80	173	373



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Trabuco Road  
 Road Segment: Monroe to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,600 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,040 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.78	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.02	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.98	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.4	61.6	55.5	64.2	64.8
Medium Trucks:	58.2	57.5	51.2	49.6	58.1	58.3
Heavy Trucks:	59.0	58.4	49.4	50.7	59.0	59.1
Vehicle Noise:	66.3	65.4	62.2	57.5	66.1	66.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	342
CNEL:	37	79	170	367

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Trabuco Road  
 Road Segment: I-5 NB Off-Ramp to Monroe

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,040 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.78	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.02	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.98	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.4	61.6	55.5	64.2	64.8
Medium Trucks:	58.2	57.5	51.2	49.6	58.1	58.3
Heavy Trucks:	59.0	58.4	49.4	50.7	59.0	59.1
Vehicle Noise:	66.3	65.4	62.2	57.5	66.1	66.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	342
CNEL:	37	79	170	367

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Trabuco Road  
 Road Segment: Yale Avenue to Remington

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,025 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 910 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.36	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.60	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.56	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.9	62.8	61.0	55.0	63.6	64.2
Medium Trucks:	57.6	56.9	50.6	49.0	57.5	57.7
Heavy Trucks:	58.4	57.9	48.8	50.1	58.4	58.6
Vehicle Noise:	65.7	64.8	61.6	57.0	65.5	66.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	145	313
CNEL:	34	72	156	336

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Trabuco Road  
 Road Segment: Remington to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,025 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 910 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.36	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.60	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.56	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.9	62.8	61.0	55.0	63.6	64.2
Medium Trucks:	57.6	56.9	50.6	49.0	57.5	57.7
Heavy Trucks:	58.4	57.9	48.8	50.1	58.4	58.6
Vehicle Noise:	65.7	64.8	61.6	57.0	65.5	66.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	145	313
CNEL:	34	72	156	336

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Turtle Ridge Drive  
 Road Segment: Federation Way to Bonita Canyon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,210 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,750 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.48	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.76	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.72	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.6	63.9	57.8	66.4	67.0
Medium Trucks:	60.5	59.8	53.4	51.9	60.3	60.6
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4
Vehicle Noise:	68.5	67.6	64.5	59.8	68.3	68.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	104	225	484
CNEL:	52	112	241	519

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Turtle Rock Drive  
 Road Segment: Ridgeline to Willowleaf

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,148 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 672 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.68	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-20.91	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-24.87	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.4	64.4	62.6	56.5	65.2	65.8	
Medium Trucks:	59.2	58.5	52.2	50.6	59.1	59.3	
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1	
Vehicle Noise:	67.3	66.3	63.2	58.5	67.1	67.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	51	111	239
CNEL:	26	55	119	256

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Turtle Rock Drive  
 Road Segment: Silkwood to Sunnyhill

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,856 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 648 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.83	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-21.07	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-25.03	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.3	64.2	62.4	56.4	65.0	65.6
Medium Trucks:	59.0	58.4	52.0	50.5	58.9	59.1
Heavy Trucks:	59.9	59.3	50.2	51.5	59.8	60.0
Vehicle Noise:	67.1	66.2	63.0	58.4	66.9	67.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	233
CNEL:	25	54	116	250

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Turtle Rock Drive  
 Road Segment: Canyon Park to Ridgeline

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,963 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 574 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 45 mph																					
Near/Far Lane Distance: 12 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 37.5 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 37.5 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 37.138																				
Left View: -90.0 degrees	Medium Trucks: 37.030																				
Right View: 90.0 degrees	Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.36	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-21.60	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-25.55	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.7	63.7	61.9	55.9	64.5	65.1
Medium Trucks:	58.5	57.8	51.5	49.9	58.4	58.6
Heavy Trucks:	59.3	58.7	49.7	51.0	59.3	59.4
Vehicle Noise:	66.6	65.7	62.5	57.8	66.4	66.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	46	100	215
CNEL:	23	50	107	231



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Turtle Rock Drive  
 Road Segment: Sunnyhill to Southernwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,609 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 298 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 45 mph																					
Near/Far Lane Distance: 12 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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Autos:	77.5%	12.9%	9.6%	97.42%																	
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Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 37.5 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 37.5 feet																					
Barrier Distance to Observer: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Observer Height (Above Pad): 5.0 feet	Autos: 37.138																				
Pad Elevation: 0.0 feet	Medium Trucks: 37.030																				
Road Elevation: 0.0 feet	Heavy Trucks: 37.139																				
Road Grade: 0.0%																					
Left View: -90.0 degrees																					
Right View: 90.0 degrees																					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-7.21	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-24.45	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-28.41	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	60.8	59.1	53.0	61.6	62.2
Medium Trucks:	55.7	55.0	48.6	47.1	55.5	55.8
Heavy Trucks:	56.5	55.9	46.9	48.1	56.5	56.6
Vehicle Noise:	63.7	62.8	59.7	55.0	63.5	64.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	30	64	139
CNEL:	15	32	69	149

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Turtle Rock Drive  
 Road Segment: Campus Drive to Hillgate

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,089 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	585 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.47	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	60.9	59.1	53.0	61.7	62.3
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8
Heavy Trucks:	56.5	55.9	46.9	48.2	56.5	56.6
Vehicle Noise:	63.8	62.9	59.7	55.0	63.6	64.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	233
CNEL:	25	54	116	250

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Turtle Rock Drive  
 Road Segment: Paseo Segovia to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,044 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	334 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	40.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	40.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 32.140				
Road Grade:	0.0%	Medium Trucks: 32.016				
Left View:	-90.0 degrees	Heavy Trucks: 32.141				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-6.72	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-23.96	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	84.25	-27.91	2.78	-1.20	-5.56	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.3	62.3	60.5	54.4	63.1	63.7
Medium Trucks:	57.1	56.4	50.1	48.5	57.0	57.2
Heavy Trucks:	57.9	57.3	48.3	49.5	57.9	58.0
Vehicle Noise:	65.2	64.2	61.1	56.4	65.0	65.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	40	86	185
CNEL:	20	43	92	198

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: University Drive  
 Road Segment: Golden Glow to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,438 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,254 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.72	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.48	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.6	67.8	61.8	70.4	71.0
Medium Trucks:	64.2	63.6	57.2	55.7	64.1	64.4
Heavy Trucks:	64.7	64.1	55.0	56.3	64.6	64.8
Vehicle Noise:	72.4	71.5	68.4	63.6	72.2	72.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	188	405	872
CNEL:	94	202	435	937

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: University Drive  
 Road Segment: Ridgeline to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 49,362 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,072 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 75.0 feet Centerline Dist. to Observer: 75.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 70.413 Medium Trucks: 70.356 Heavy Trucks: 70.413																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.69	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.55	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-17.50	-2.33	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.4	69.3	67.5	61.5	70.1	70.7	
Medium Trucks:	63.9	63.3	56.9	55.3	63.8	64.0	
Heavy Trucks:	64.3	63.8	54.7	56.0	64.3	64.4	
Vehicle Noise:	72.1	71.1	68.1	63.3	71.9	72.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	215	463	997
CNEL:	107	231	497	1,072

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: University Drive  
 Road Segment: Culver Drive to Golden Glow

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 38,353 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,164 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.59	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.64	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.60	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	69.5	67.7	61.7	70.3	70.9
Medium Trucks:	64.1	63.4	57.1	55.5	64.0	64.2
Heavy Trucks:	64.5	63.9	54.9	56.2	64.5	64.6
Vehicle Noise:	72.2	71.3	68.3	63.5	72.0	72.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	184	397	856
CNEL:	92	198	427	920

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: University Drive  
 Road Segment: Yale Avenue to Ridgeline

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,343 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,916 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.00	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.96	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	69.1	67.4	61.3	69.9	70.5
Medium Trucks:	63.8	63.1	56.7	55.2	63.6	63.9
Heavy Trucks:	64.2	63.6	54.6	55.8	64.2	64.3
Vehicle Noise:	71.9	71.0	67.9	63.1	71.7	72.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	175	376	811
CNEL:	87	188	404	871

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: University Drive  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 54,745 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,516 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.14	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.10	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.05	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	69.4	67.6	61.6	70.2	70.8
Medium Trucks:	64.0	63.3	57.0	55.4	63.9	64.1
Heavy Trucks:	64.4	63.8	54.8	56.1	64.4	64.5
Vehicle Noise:	72.1	71.2	68.2	63.4	71.9	72.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	244	525	1,132
CNEL:	122	262	564	1,216



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: University Drive  
 Road Segment: Mesa to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 42,065 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,470 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.00	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.24	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.20	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.3	71.2	69.4	63.4	72.0	72.6
Medium Trucks:	65.8	65.2	58.8	57.2	65.7	65.9
Heavy Trucks:	66.2	65.6	56.6	57.9	66.2	66.3
Vehicle Noise:	73.9	73.0	70.0	65.2	73.8	74.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	107	230	495	1,067
CNEL:	115	247	532	1,147

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan	Project Name: Irvine GP
Road Name: University Drive	Job Number: 15937
Road Segment: MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS															
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>															
Average Daily Traffic (Adt): 42,129 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,476 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15															
<b>Site Data</b>	<b>Vehicle Mix</b>															
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border: none;"> <tr> <td style="text-align: right;">Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td style="text-align: right;">Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td style="text-align: right;">Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </table>	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Autos:	77.5%	12.9%	9.6%	97.42%												
Medium Trucks:	84.8%	4.9%	10.3%	1.84%												
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%												
	<b>Noise Source Elevations (in feet)</b>															
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0															
	<b>Lane Equivalent Distance (in feet)</b>															
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329															

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.00	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.24	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.19	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.3	71.2	69.4	63.4	72.0	72.6	
Medium Trucks:	65.8	65.2	58.8	57.3	65.7	65.9	
Heavy Trucks:	66.2	65.7	56.6	57.9	66.2	66.3	
Vehicle Noise:	74.0	73.0	70.0	65.2	73.8	74.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	107	230	496	1,068
CNEL:	115	247	533	1,148

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: University Drive  
 Road Segment: California Avenue to Mesa

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 40,950 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,378 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.88	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.36	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.32	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.1	71.1	69.3	63.3	71.9	72.5	
Medium Trucks:	65.7	65.0	58.7	57.1	65.6	65.8	
Heavy Trucks:	66.1	65.5	56.5	57.7	66.1	66.2	
Vehicle Noise:	73.8	72.9	69.9	65.1	73.6	74.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	105	226	487	1,048
CNEL:	113	243	523	1,126

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: University Drive  
 Road Segment: Campus Drive to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,789 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,788 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.04	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.19	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.15	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0
Heavy Trucks:	62.3	61.7	52.7	54.0	62.3	62.4
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	381	821
CNEL:	88	190	409	882

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan	Project Name: Irvine GP
Road Name: University Drive	Job Number: 15937
Road Segment: SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 18,527 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,528 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.57	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-17.80	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-21.76	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.3	66.5	60.5	69.1	69.7
Medium Trucks:	62.9	62.2	55.9	54.3	62.8	63.0
Heavy Trucks:	63.3	62.7	53.7	55.0	63.3	63.4
Vehicle Noise:	71.0	70.1	67.1	62.3	70.8	71.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	123	264	569
CNEL:	61	132	284	611

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan Project Name: Irvine GP  
 Road Name: University Drive Job Number: 15937  
 Road Segment: SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,273 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,580 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.49	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	67.0	65.2	59.1	67.8	68.4
Medium Trucks:	61.6	60.9	54.5	53.0	61.5	61.7
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	69.7	68.8	65.7	61.0	69.5	70.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	168	362	779
CNEL:	84	180	389	837

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: University Drive  
 Road Segment: San Joaquin to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,239 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,247 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.11	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.13	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.09	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.4	64.6	58.5	67.2	67.8
Medium Trucks:	61.0	60.3	53.9	52.4	60.9	61.1
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5
Vehicle Noise:	69.1	68.2	65.1	60.4	68.9	69.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	153	330	711
CNEL:	76	165	354	764

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: University Drive  
 Road Segment: Harvard Avenue to San Joaquin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,126 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,238 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.09	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.15	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.10	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.4	66.3	64.6	58.5	67.1	67.7	
Medium Trucks:	61.0	60.3	53.9	52.4	60.8	61.1	
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5	
Vehicle Noise:	69.1	68.2	65.1	60.3	68.9	69.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	153	329	709
CNEL:	76	164	353	761



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Valley Oak Drive  
 Road Segment: Hawkcreek to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,681 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,129 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.88	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.12	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.08	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	65.0	63.2	57.2	65.8	66.4
Medium Trucks:	59.6	59.0	52.6	51.1	59.5	59.8
Heavy Trucks:	60.1	59.5	50.4	51.7	60.0	60.2
Vehicle Noise:	67.8	66.9	63.8	59.0	67.6	68.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	93	200	431
CNEL:	46	100	215	463

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Valley Oak Drive  
 Road Segment: Irvine Center Drive to Oak Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,844 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 647 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.30	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-21.54	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.49	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.6	64.5	62.8	56.7	65.4	66.0	
Medium Trucks:	59.2	58.5	52.2	50.6	59.1	59.3	
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7	
Vehicle Noise:	67.3	66.4	63.3	58.6	67.1	67.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	149	321
CNEL:	34	74	160	345

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Valley Oak Drive  
 Road Segment: Barranca Parkway to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,042 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 663 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-21.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-25.38	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.8	62.7	60.9	54.9	63.5	64.1	
Medium Trucks:	57.3	56.7	50.3	48.8	57.2	57.4	
Heavy Trucks:	57.7	57.2	48.1	49.4	57.7	57.9	
Vehicle Noise:	65.5	64.5	61.5	56.7	65.3	65.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	140	302
CNEL:	32	70	151	325

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Valley Oak Drive  
 Road Segment: Alton Parkway to Hawkcreek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,753 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	557 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.95	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.19	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.14	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.0	61.9	60.2	54.1	62.7	63.4
Medium Trucks:	56.6	55.9	49.5	48.0	56.5	56.7
Heavy Trucks:	57.0	56.4	47.4	48.6	57.0	57.1
Vehicle Noise:	64.7	63.8	60.7	56.0	64.5	65.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	125	269
CNEL:	29	62	134	289

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Von Karman Avenue  
 Road Segment: Marriott to Morse Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,180 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,655 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.90	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.7	59.6	68.2	68.8
Medium Trucks:	62.3	61.6	55.2	53.7	62.1	62.4
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	70.3	69.4	66.3	61.6	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	138	297	639
CNEL:	69	148	318	686

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Von Karman Avenue  
 Road Segment: Michelson Drive to Quartz

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,568 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,522 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.07	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.17	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.13	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.2	65.5	59.4	68.0	68.6
Medium Trucks:	62.0	61.4	55.0	53.5	61.9	62.2
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0
Vehicle Noise:	70.1	69.2	66.1	61.4	69.9	70.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	287	618
CNEL:	66	143	308	663

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Von Karman Avenue  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,817 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,377 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.38	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.0	67.0	65.2	59.1	67.8	68.4	
Medium Trucks:	61.8	61.1	54.7	53.2	61.7	61.9	
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7	
Vehicle Noise:	69.9	69.0	65.8	61.1	69.7	70.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	128	276	594
CNEL:	64	137	296	637

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Von Karman Avenue  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 35,462 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,926 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.71	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.53	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	84.25	-18.48	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.6	64.8	58.8	67.4	68.0
Medium Trucks:	61.4	60.7	54.4	52.8	61.3	61.5
Heavy Trucks:	62.2	61.6	52.6	53.9	62.2	62.3
Vehicle Noise:	69.5	68.6	65.4	60.7	69.3	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	145	312	672
CNEL:	72	155	334	720



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Von Karman Avenue  
 Road Segment: Main Street to Anchor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,652 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,281 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.63	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.61	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.56	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.8	65.0	59.0	67.6	68.2
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7
Heavy Trucks:	62.4	61.9	52.8	54.1	62.4	62.6
Vehicle Noise:	69.7	68.8	65.6	60.9	69.5	69.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	124	268	578
CNEL:	62	134	288	620

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Von Karman Avenue  
 Road Segment: Anchor to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,101 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,236 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.69	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.65	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	64.9	58.9	67.5	68.1
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5
Vehicle Noise:	69.6	68.7	65.5	60.9	69.4	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	123	265	570
CNEL:	61	132	284	612

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Von Karman Avenue  
 Road Segment: Morse to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,235 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,247 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.67	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.63	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	64.9	58.9	67.5	68.1
Medium Trucks:	61.5	60.9	54.5	53.0	61.4	61.7
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	69.6	68.7	65.6	60.9	69.4	69.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	123	265	572
CNEL:	61	132	285	614

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Von Karman Avenue  
 Road Segment: Martin to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,409 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,931 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.91	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.33	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.29	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.1	66.1	64.3	58.2	66.9	67.5	
Medium Trucks:	60.9	60.2	53.8	52.3	60.8	61.0	
Heavy Trucks:	61.7	61.1	52.1	53.3	61.7	61.8	
Vehicle Noise:	69.0	68.0	64.9	60.2	68.8	69.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	111	240	517
CNEL:	55	119	257	555

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Von Karman Avenue  
 Road Segment: Campus Drive to Martin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,065 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,903 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.84	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.40	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.35	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.0	64.2	58.2	66.8	67.4
Medium Trucks:	60.8	60.1	53.8	52.2	60.7	60.9
Heavy Trucks:	61.7	61.1	52.0	53.3	61.6	61.8
Vehicle Noise:	68.9	68.0	64.8	60.2	68.7	69.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	110	238	512
CNEL:	55	118	255	549

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Von Karman Avenue  
 Road Segment: Dupont Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,141 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,909 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.86	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.34	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.0	64.2	58.2	66.8	67.4
Medium Trucks:	60.8	60.2	53.8	52.3	60.7	60.9
Heavy Trucks:	61.7	61.1	52.0	53.3	61.7	61.8
Vehicle Noise:	68.9	68.0	64.9	60.2	68.7	69.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	111	238	513
CNEL:	55	119	255	550

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Walnut Avenue  
 Road Segment: Jeffrey Road to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,658 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,612 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.02	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.98	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.4	65.6	59.5	68.2	68.8	
Medium Trucks:	62.2	61.5	55.2	53.6	62.1	62.3	
Heavy Trucks:	63.0	62.4	53.4	54.7	63.0	63.1	
Vehicle Noise:	70.3	69.4	66.2	61.5	70.1	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	293	632
CNEL:	68	146	315	678

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Walnut Avenue  
 Road Segment: Myford Road to Jamboree Road SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,679 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,789 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.66	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.62	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	64.0	57.9	66.5	67.1
Medium Trucks:	60.5	59.9	53.5	52.0	60.4	60.7
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5
Vehicle Noise:	68.6	67.7	64.6	59.9	68.4	68.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	106	228	491
CNEL:	53	114	245	527



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Walnut Avenue  
 Road Segment: The Mall Street to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,607 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,618 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.06	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	60.1	59.4	53.1	51.5	60.0	60.2
Heavy Trucks:	60.9	60.4	51.3	52.6	60.9	61.1
Vehicle Noise:	68.2	67.3	64.1	59.5	68.0	68.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	99	213	459
CNEL:	49	106	229	493

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Walnut Avenue  
 Road Segment: Harvard Avenue to The Mall Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,566 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,614 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.13	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.07	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.3	65.3	63.5	57.5	66.1	66.7	
Medium Trucks:	60.1	59.4	53.1	51.5	60.0	60.2	
Heavy Trucks:	60.9	60.4	51.3	52.6	60.9	61.0	
Vehicle Noise:	68.2	67.3	64.1	59.4	68.0	68.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	99	213	459
CNEL:	49	106	228	492

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Walnut Avenue  
 Road Segment: Franciscan Street to Ravenwood Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 18,104 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,494 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.40	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.2	57.1	65.7	66.3
Medium Trucks:	59.8	59.1	52.7	51.2	59.6	59.9
Heavy Trucks:	60.6	60.0	51.0	52.2	60.6	60.7
Vehicle Noise:	67.8	66.9	63.8	59.1	67.6	68.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	94	202	436
CNEL:	47	101	217	467

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Walnut Avenue  
 Road Segment: Ravenwood Street to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,267 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,507 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.41	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.36	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.0	65.0	63.2	57.2	65.8	66.4	
Medium Trucks:	59.8	59.1	52.8	51.2	59.7	59.9	
Heavy Trucks:	60.6	60.1	51.0	52.3	60.6	60.8	
Vehicle Noise:	67.9	67.0	63.8	59.1	67.7	68.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	94	203	438
CNEL:	47	101	218	470

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Walnut Avenue  
 Road Segment: Culver Drive to Franciscan Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,122 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,495 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.20	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.44	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.40	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.2	57.1	65.7	66.4
Medium Trucks:	59.8	59.1	52.7	51.2	59.7	59.9
Heavy Trucks:	60.6	60.0	51.0	52.2	60.6	60.7
Vehicle Noise:	67.8	66.9	63.8	59.1	67.7	68.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	94	202	436
CNEL:	47	101	217	468

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Walnut Avenue  
 Road Segment: Peters Canyon Road to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,611 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,948 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.94	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.29	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.25	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.5	64.4	62.7	56.6	65.2	65.9
Medium Trucks:	59.3	58.6	52.2	50.7	59.1	59.4
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2
Vehicle Noise:	67.3	66.4	63.3	58.6	67.2	67.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	117	252	542
CNEL:	58	125	270	582

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan Project Name: Irvine GP  
 Road Name: Walnut Avenue Job Number: 15937  
 Road Segment: Jamboree Road NB Off-Ramp to Peters Canyon Road

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,091 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,905 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.85	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.39	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.35	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.4	64.3	62.6	56.5	65.1	65.8
Medium Trucks:	59.2	58.5	52.1	50.6	59.0	59.3
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1
Vehicle Noise:	67.2	66.3	63.2	58.5	67.1	67.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	115	248	534
CNEL:	57	123	266	573

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Walnut Avenue  
 Road Segment: Yale Avenue to Kazan Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,893 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,146 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.36	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.60	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.55	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	63.8	62.0	56.0	64.6	65.2
Medium Trucks:	58.6	57.9	51.6	50.0	58.5	58.7
Heavy Trucks:	59.5	58.9	49.8	51.1	59.4	59.6
Vehicle Noise:	66.7	65.8	62.6	58.0	66.5	67.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	169	365
CNEL:	39	84	182	392



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Walnut Avenue  
 Road Segment: Wisteria to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,036 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,158 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.31	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.55	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.51	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	63.8	62.1	56.0	64.6	65.2
Medium Trucks:	58.7	58.0	51.6	50.1	58.5	58.8
Heavy Trucks:	59.5	58.9	49.9	51.1	59.5	59.6
Vehicle Noise:	66.7	65.8	62.7	58.0	66.5	67.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	171	368
CNEL:	39	85	183	394

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan Project Name: Irvine GP  
 Road Name: Warner Avenue Job Number: 15937  
 Road Segment: Jamboree Road SB Off-ramp to Construction North

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,474 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,349 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006 <span style="float:right">Grade Adjustment: 0.0</span>				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.76	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.44	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	66.9	65.1	59.1	67.7	68.3
Medium Trucks:	61.7	61.1	54.7	53.2	61.6	61.8
Heavy Trucks:	62.6	62.0	52.9	54.2	62.6	62.7
Vehicle Noise:	69.8	68.9	65.8	61.1	69.6	70.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	273	589
CNEL:	63	136	293	632

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Warner Avenue  
 Road Segment: Construction North to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,399 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,600 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.09	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.15	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.10	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.3	65.2	63.5	57.4	66.0	66.6	
Medium Trucks:	60.1	59.4	53.0	51.5	59.9	60.2	
Heavy Trucks:	60.9	60.3	51.3	52.5	60.9	61.0	
Vehicle Noise:	68.1	67.2	64.1	59.4	67.9	68.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	98	212	456
CNEL:	49	105	227	489

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Warner Avenue  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,312 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,098 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.78	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.74	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.7	63.6	61.8	55.8	64.4	65.0
Medium Trucks:	58.4	57.8	51.4	49.9	58.3	58.5
Heavy Trucks:	59.3	58.7	49.6	50.9	59.3	59.4
Vehicle Noise:	66.5	65.6	62.4	57.8	66.3	66.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	165	355
CNEL:	38	82	177	381

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Warner Avenue  
 Road Segment: Santa Ynez to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,265 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 847 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.67	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.91	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.87	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.5	62.5	60.7	54.7	63.3	63.9
Medium Trucks:	57.3	56.6	50.3	48.7	57.2	57.4
Heavy Trucks:	58.1	57.6	48.5	49.8	58.1	58.2
Vehicle Noise:	65.4	64.5	61.3	56.6	65.2	65.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	139	298
CNEL:	32	69	149	320

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Warner Avenue  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,123 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	753 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.42	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.38	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.0	62.0	60.2	54.1	62.8	63.4
Medium Trucks:	56.8	56.1	49.8	48.2	56.7	56.9
Heavy Trucks:	57.6	57.0	48.0	49.3	57.6	57.7
Vehicle Noise:	64.9	64.0	60.8	56.1	64.7	65.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	59	128	276
CNEL:	30	64	137	296

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: West Yale Loop  
 Road Segment: Alton Parkway to Blue Lake North

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,388 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 775 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.55	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.79	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.74	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.7	60.7	58.9	52.8	61.5	62.1	
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8	
Heavy Trucks:	57.0	56.4	47.4	48.6	57.0	57.1	
Vehicle Noise:	63.7	62.8	59.6	55.0	63.5	64.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	232
CNEL:	25	53	115	248

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: West Yale Loop  
 Road Segment: Eagle Run to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,045 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 746 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.71	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.91	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.6	60.5	58.7	52.7	61.3	61.9	
Medium Trucks:	55.5	54.9	48.5	46.9	55.4	55.6	
Heavy Trucks:	56.8	56.3	47.2	48.5	56.8	57.0	
Vehicle Noise:	63.6	62.7	59.4	54.8	63.4	63.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	49	105	226
CNEL:	24	52	112	242



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: West Yale Loop  
 Road Segment: Thunder Run to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,605 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 710 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.93	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.17	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.12	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.3	60.3	58.5	52.5	61.1	61.7
Medium Trucks:	55.3	54.6	48.3	46.7	55.2	55.4
Heavy Trucks:	56.6	56.0	47.0	48.3	56.6	56.7
Vehicle Noise:	63.3	62.5	59.2	54.6	63.2	63.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	102	219
CNEL:	23	50	109	234

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: West Yale Loop  
 Road Segment: Main Street to Timber Run

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,350 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	606 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.61	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.85	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.81	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.7	59.6	57.8	51.8	60.4	61.0
Medium Trucks:	54.6	54.0	47.6	46.0	54.5	54.7
Heavy Trucks:	55.9	55.4	46.3	47.6	55.9	56.1
Vehicle Noise:	62.7	61.8	58.5	53.9	62.5	62.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	42	91	197
CNEL:	21	45	98	211

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: West Yale Loop  
 Road Segment: Yale Avenue to Shorebird

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,121 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 505 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.41	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.60	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.9	58.8	57.0	51.0	59.6	60.2
Medium Trucks:	53.8	53.2	46.8	45.3	53.7	53.9
Heavy Trucks:	55.1	54.6	45.5	46.8	55.1	55.3
Vehicle Noise:	61.9	61.0	57.7	53.1	61.7	62.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	38	81	174
CNEL:	19	40	87	187

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: West Yale Loop  
 Road Segment: Warner Avenue to Stonecreek South

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,494 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 536 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.34	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.1	59.1	57.3	51.2	59.9	60.5	
Medium Trucks:	54.1	53.4	47.1	45.5	54.0	54.2	
Heavy Trucks:	55.4	54.8	45.8	47.0	55.4	55.5	
Vehicle Noise:	62.1	61.2	58.0	53.4	61.9	62.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	84	181
CNEL:	19	42	90	194

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: West Yale Loop  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,497 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 536 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.34	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.1	59.1	57.3	51.2	59.9	60.5	
Medium Trucks:	54.1	53.4	47.1	45.5	54.0	54.2	
Heavy Trucks:	55.4	54.8	45.8	47.0	55.4	55.5	
Vehicle Noise:	62.1	61.2	58.0	53.4	61.9	62.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	84	181
CNEL:	19	42	90	194

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: West Yale Loop  
 Road Segment: Stonecreek North to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 5,909 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 488 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.75	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.7	58.6	56.9	50.8	59.4	60.0
Medium Trucks:	53.7	53.0	46.6	45.1	53.6	53.8
Heavy Trucks:	55.0	54.4	45.4	46.6	55.0	55.1
Vehicle Noise:	61.7	60.8	57.5	53.0	61.5	62.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	79	170
CNEL:	18	39	85	182

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: West Yale Loop  
 Road Segment: Birdsong to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,221 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 513 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.58	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.53	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.9	58.9	57.1	51.0	59.7	60.3
Medium Trucks:	53.9	53.2	46.9	45.3	53.8	54.0
Heavy Trucks:	55.2	54.6	45.6	46.8	55.2	55.3
Vehicle Noise:	61.9	61.0	57.8	53.2	61.7	62.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	38	82	176
CNEL:	19	41	88	189

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Westwood  
 Road Segment: Yorktown to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,136 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 506 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-3.82	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-21.05	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-25.01	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.1	60.1	58.3	52.2	60.9	61.5
Medium Trucks:	55.3	54.7	48.3	46.8	55.2	55.5
Heavy Trucks:	57.2	56.6	47.6	48.8	57.2	57.3
Vehicle Noise:	63.3	62.5	59.0	54.6	63.2	63.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	13	28	61	131
CNEL:	14	30	65	140



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Westwood  
 Road Segment: Bryan Avenue to Leaf

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,830 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	316 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.86	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-23.10	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-27.06	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.1	58.0	56.2	50.2	58.8	59.4
Medium Trucks:	53.3	52.6	46.3	44.7	53.2	53.4
Heavy Trucks:	55.1	54.6	45.5	46.8	55.1	55.3
Vehicle Noise:	61.3	60.4	57.0	52.6	61.1	61.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	10	21	45	96
CNEL:	10	22	48	103

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Yale Avenue  
 Road Segment: Deerfield Avenue to Winvale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,521 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 868 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 37.138				
Road Grade: 0.0%		Medium Trucks: 37.030				
Left View: -90.0 degrees		Heavy Trucks: 37.139				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.57	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-19.80	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-23.76	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.5	63.7	57.6	66.3	66.9
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4
Heavy Trucks:	61.1	60.5	51.5	52.8	61.1	61.2
Vehicle Noise:	68.4	67.5	64.3	59.6	68.2	68.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	131	283
CNEL:	30	65	141	304

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Yale Avenue  
 Road Segment: Hicks Canyon Drive to Meadowood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,885 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 650 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.82	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-21.06	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-25.01	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.3	64.2	62.4	56.4	65.0	65.6	
Medium Trucks:	59.0	58.4	52.0	50.5	58.9	59.2	
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0	
Vehicle Noise:	67.1	66.2	63.1	58.4	66.9	67.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	234
CNEL:	25	54	116	251

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Yale Avenue  
 Road Segment: Walnut Avenue to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,427 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,190 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 40.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 40.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 32.140				
Road Grade: 0.0%		Medium Trucks: 32.016				
Left View: -90.0 degrees		Heavy Trucks: 32.141				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.19	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-18.43	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	84.25	-22.39	2.78	-1.20	-5.56	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	63.4	62.9	53.8	55.1	63.4	63.5
Vehicle Noise:	70.7	69.8	66.6	61.9	70.5	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	93	200	431
CNEL:	46	100	215	462

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Yale Avenue  
 Road Segment: Roosevelt to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,270 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,177 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.44	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.0	63.9	62.1	56.1	64.7	65.3
Medium Trucks:	58.7	58.1	51.7	50.2	58.6	58.8
Heavy Trucks:	59.6	59.0	49.9	51.2	59.6	59.7
Vehicle Noise:	66.8	65.9	62.8	58.1	66.6	67.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	80	173	372
CNEL:	40	86	185	399

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Yale Avenue  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,084 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,162 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.30	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.54	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.49	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.9	63.9	62.1	56.0	64.7	65.3	
Medium Trucks:	58.7	58.0	51.6	50.1	58.6	58.8	
Heavy Trucks:	59.5	58.9	49.9	51.1	59.5	59.6	
Vehicle Noise:	66.8	65.8	62.7	58.0	66.6	67.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	171	368
CNEL:	40	85	183	395

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Yale Avenue  
 Road Segment: West Yale Loop to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,606 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 875 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.72	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.7	62.6	60.9	54.8	63.4	64.0
Medium Trucks:	57.4	56.8	50.4	48.9	57.3	57.6
Heavy Trucks:	58.3	57.7	48.7	49.9	58.3	58.4
Vehicle Noise:	65.5	64.6	61.5	56.8	65.3	65.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	66	142	305
CNEL:	33	70	152	327

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Yale Avenue  
 Road Segment: Winvale Avenue to Karen Ann Lane

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,512 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 867 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.81	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.76	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.6	62.6	60.8	54.8	63.4	64.0	
Medium Trucks:	57.4	56.7	50.4	48.8	57.3	57.5	
Heavy Trucks:	58.2	57.7	48.6	49.9	58.2	58.4	
Vehicle Noise:	65.5	64.6	61.4	56.7	65.3	65.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	141	303
CNEL:	33	70	151	325



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Yale Avenue  
 Road Segment: Karen Ann Lane to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	10,512 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	867 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet	Grade Adjustment: 0.0				
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		57.786		
Left View:	-90.0 degrees	Medium Trucks:		57.717		
Right View:	90.0 degrees	Heavy Trucks:		57.787		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.81	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.76	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.6	62.6	60.8	54.8	63.4	64.0
Medium Trucks:	57.4	56.7	50.4	48.8	57.3	57.5
Heavy Trucks:	58.2	57.7	48.6	49.9	58.2	58.4
Vehicle Noise:	65.5	64.6	61.4	56.7	65.3	65.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	141	303
CNEL:	33	70	151	325

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Yale Avenue  
 Road Segment: Trabuco Road to Southwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,224 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 844 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.69	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.93	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.88	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.5	62.5	60.7	54.6	63.3	63.9	
Medium Trucks:	57.3	56.6	50.2	48.7	57.2	57.4	
Heavy Trucks:	58.1	57.5	48.5	49.7	58.1	58.2	
Vehicle Noise:	65.4	64.5	61.3	56.6	65.2	65.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	298
CNEL:	32	69	148	319

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Yale Avenue  
 Road Segment: Southwood to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,061 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 830 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.76	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.00	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.95	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.5	62.4	60.6	54.6	63.2	63.8	
Medium Trucks:	57.2	56.5	50.2	48.6	57.1	57.3	
Heavy Trucks:	58.1	57.5	48.4	49.7	58.0	58.2	
Vehicle Noise:	65.3	64.4	61.2	56.6	65.1	65.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	137	294
CNEL:	32	68	147	316

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Yale Avenue  
 Road Segment: Northwood to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,496 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 783 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.25	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.21	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.2	62.1	60.4	54.3	62.9	63.5	
Medium Trucks:	57.0	56.3	49.9	48.4	56.8	57.1	
Heavy Trucks:	57.8	57.2	48.2	49.4	57.8	57.9	
Vehicle Noise:	65.0	64.1	61.0	56.3	64.8	65.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	132	283
CNEL:	30	65	141	304

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Yale Avenue  
 Road Segment: Bryan Avenue to Monticello

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,368 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 773 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.07	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.31	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.26	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.1	62.1	60.3	54.3	62.9	63.5
Medium Trucks:	56.9	56.2	49.9	48.3	56.8	57.0
Heavy Trucks:	57.7	57.2	48.1	49.4	57.7	57.9
Vehicle Noise:	65.0	64.1	60.9	56.2	64.8	65.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	60	130	281
CNEL:	30	65	140	301

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Yale Avenue  
 Road Segment: Irvine Boulevard to Park Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,567 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 624 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.19	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.2	61.2	59.4	53.3	62.0	62.6	
Medium Trucks:	56.0	55.3	48.9	47.4	55.9	56.1	
Heavy Trucks:	56.8	56.2	47.2	48.4	56.8	56.9	
Vehicle Noise:	64.1	63.1	60.0	55.3	63.9	64.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	113	244
CNEL:	26	56	121	261

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Current General Plan  
 Road Name: Yale Avenue  
 Road Segment: University Drive to Royce

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,588 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 296 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-7.24	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	79.45	-24.48	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	84.25	-28.43	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.9	59.9	58.1	52.0	60.7	61.3	
Medium Trucks:	54.7	54.0	47.7	46.1	54.6	54.8	
Heavy Trucks:	55.5	54.9	45.9	47.2	55.5	55.6	
Vehicle Noise:	62.8	61.9	58.7	54.0	62.6	63.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	16	34	74	160
CNEL:	17	37	80	172

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Current General Plan  
 Road Name: Yale Court  
 Road Segment: Arborwood to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,351 vehicles	Autos:				15
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):				15
Peak Hour Volume:	524 vehicles	Heavy Trucks (3+ Axles):				15
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-2.21	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-19.44	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-23.40	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.2	56.1	54.3	48.3	56.9	57.5
Medium Trucks:	52.0	51.3	45.0	43.4	51.9	52.1
Heavy Trucks:	55.2	54.6	45.6	46.8	55.2	55.3
Vehicle Noise:	60.0	59.2	55.3	51.4	59.9	60.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	79
CNEL:	8	18	39	84



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Ada  
 Road Segment: Barranca Parway to Marine Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,114 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,907 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 37.138				
Road Grade: 0.0%	Medium Trucks: 37.030				
Left View: -90.0 degrees	Heavy Trucks: 37.139				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.36	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-15.87	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-19.83	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.7	59.6	68.2	68.9
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9
Vehicle Noise:	70.5	69.6	66.3	61.8	70.3	70.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	85	183	395
CNEL:	42	91	196	423

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Ada  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,726 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,617 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.74	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-14.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-18.46	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.0	65.9	64.2	58.1	66.7	67.3	
Medium Trucks:	61.0	60.3	53.9	52.4	60.9	61.1	
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4	
Vehicle Noise:	69.0	68.1	64.8	60.3	68.8	69.3	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	112	242	522
CNEL:	56	120	259	559

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Enterprise to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 81,472 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 6,721 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	5.87	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-11.37	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-15.33	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.2	71.1	69.3	63.3	71.9	72.5
Medium Trucks:	65.7	65.1	58.7	57.2	65.6	65.8
Heavy Trucks:	66.2	65.6	56.5	57.8	66.1	66.3
Vehicle Noise:	73.9	72.9	69.9	65.1	73.7	74.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	148	318	685	1,475
CNEL:	159	342	736	1,585

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: I-5 NB Off-Ramp to Technology Drive West

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 86,184 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 7,110 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	6.11	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-11.13	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-15.08	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.8	71.8	70.0	63.9	72.6	73.2	
Medium Trucks:	66.4	65.7	59.4	57.8	66.3	66.5	
Heavy Trucks:	66.8	66.2	57.2	58.4	66.8	66.9	
Vehicle Noise:	74.5	73.6	70.6	65.8	74.3	74.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	155	335	721	1,554
CNEL:	167	360	775	1,669

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: East Yale Loop to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,626 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,692 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.89	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.30	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.8	67.0	61.0	69.6	70.2
Medium Trucks:	63.4	62.7	56.4	54.8	63.3	63.5
Heavy Trucks:	63.8	63.2	54.2	55.5	63.8	63.9
Vehicle Noise:	71.5	70.6	67.6	62.8	71.3	71.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	357	769
CNEL:	83	178	383	826

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Gateway Boulevard to Enterprise

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 49,611 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,093 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.48	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.0	69.0	67.2	61.1	69.8	70.4	
Medium Trucks:	63.6	62.9	56.5	55.0	63.5	63.7	
Heavy Trucks:	64.0	63.4	54.4	55.6	64.0	64.1	
Vehicle Noise:	71.7	70.8	67.8	63.0	71.5	72.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	228	492	1,060
CNEL:	114	245	529	1,139

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Jeffrey Road to Royal Oak

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,386 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,177 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.97	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.27	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.22	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.9	67.9	66.1	60.0	68.7	69.3	
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6	
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0	
Vehicle Noise:	70.6	69.7	66.7	61.9	70.4	70.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	310	667
CNEL:	72	154	333	717

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Daimler Street to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,087 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,070 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.75	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.49	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.44	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.9	59.8	68.4	69.1	
Medium Trucks:	62.3	61.6	55.2	53.7	62.2	62.4	
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8	
Vehicle Noise:	70.4	69.5	66.4	61.7	70.2	70.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	139	299	645
CNEL:	69	149	322	693



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,096 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,070 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.75	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.49	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.44	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.9	59.8	68.4	69.1
Medium Trucks:	62.3	61.6	55.2	53.7	62.2	62.4
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.4	69.5	66.4	61.7	70.2	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	139	299	645
CNEL:	69	149	322	693

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: West Yale Loop to Lake Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,022 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,064 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.74	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.46	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.9	59.8	68.4	69.0
Medium Trucks:	62.3	61.6	55.2	53.7	62.1	62.4
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.4	69.5	66.4	61.6	70.2	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	139	299	644
CNEL:	69	149	321	692

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Technology Drive West to Ada

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 52,329 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,317 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.94	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.29	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.25	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.6	67.8	61.8	70.4	71.0
Medium Trucks:	64.2	63.6	57.2	55.6	64.1	64.3
Heavy Trucks:	64.6	64.1	55.0	56.3	64.6	64.7
Vehicle Noise:	72.4	71.4	68.4	63.6	72.2	72.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	111	240	517	1,114
CNEL:	120	258	556	1,197

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Creek Road to East Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,792 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,045 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.70	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.54	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.50	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.8	59.8	68.4	69.0	
Medium Trucks:	62.2	61.6	55.2	53.6	62.1	62.3	
Heavy Trucks:	62.6	62.1	53.0	54.3	62.6	62.7	
Vehicle Noise:	70.4	69.4	66.4	61.6	70.2	70.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	138	297	640
CNEL:	69	148	319	688

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Red Hill Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,224 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,998 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.64	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.60	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.7	59.7	68.3	68.9
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2
Heavy Trucks:	62.5	62.0	52.9	54.2	62.5	62.6
Vehicle Noise:	70.3	69.3	66.3	61.5	70.1	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	292	630
CNEL:	68	146	314	677

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Lake Road to Creek Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,527 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,941 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.47	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.72	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.4	65.6	59.5	68.2	68.8	
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1	
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5	
Vehicle Noise:	70.1	69.2	66.2	61.4	69.9	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	287	618
CNEL:	66	143	308	664

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Telemetry to Banting

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,656 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,952 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.50	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.74	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.70	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.4	65.6	59.6	68.2	68.8	
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1	
Heavy Trucks:	62.4	61.8	52.8	54.1	62.4	62.5	
Vehicle Noise:	70.1	69.2	66.2	61.4	70.0	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	134	288	620
CNEL:	67	144	309	666

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Irvine Boulevard to Commercentre

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 37,812 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,120 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.53	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.71	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.66	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.8	67.8	66.0	60.0	68.6	69.2	
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5	
Heavy Trucks:	62.8	62.2	53.2	54.4	62.8	62.9	
Vehicle Noise:	70.5	69.6	66.6	61.8	70.3	70.8	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	191	411	884
CNEL:	95	205	441	950



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Jenner to Telemetry

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,298 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,922 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.43	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.81	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.77	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	62.0	61.3	54.9	53.4	61.8	62.1
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5
Vehicle Noise:	70.1	69.2	66.1	61.3	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	285	614
CNEL:	66	142	306	660

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Irvine Center Drive to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 41,786 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,447 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.97	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.27	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.23	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.3	68.2	66.4	60.4	69.0	69.6	
Medium Trucks:	62.8	62.2	55.8	54.3	62.7	63.0	
Heavy Trucks:	63.3	62.7	53.6	54.9	63.2	63.4	
Vehicle Noise:	71.0	70.0	67.0	62.2	70.8	71.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	95	204	439	945
CNEL:	102	219	471	1,016

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Sand Canyon Avenue to Hospital

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,925 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,046 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.43	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.81	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.77	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.7	70.6	68.9	62.8	71.4	72.0
Medium Trucks:	65.3	64.6	58.2	56.7	65.1	65.4
Heavy Trucks:	65.7	65.1	56.0	57.3	65.6	65.8
Vehicle Noise:	73.4	72.5	69.4	64.6	73.2	73.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	211	454	978
CNEL:	105	226	488	1,051

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Laguna Canyon Road to Jenner

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,824 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,883 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.85	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.2	65.5	59.4	68.0	68.6
Medium Trucks:	61.9	61.2	54.8	53.3	61.7	62.0
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.0	69.1	66.0	61.2	69.8	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	130	281	606
CNEL:	65	140	302	651

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative Project Name: Irvine GP  
 Road Name: Alton Parkway Job Number: 15937  
 Road Segment: Technology Drive East to Barranca Pkwy/Muirlands Blvd

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 41,377 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,414 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.92	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.31	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.27	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.2	66.4	60.3	69.0	69.6
Medium Trucks:	62.8	62.1	55.8	54.2	62.7	62.9
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3
Vehicle Noise:	70.9	70.0	67.0	62.2	70.7	71.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	94	202	436	939
CNEL:	101	217	468	1,009

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Royal Oak to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,871 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,804 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">VehicleType</th> <th style="text-align: center;">Day</th> <th style="text-align: center;">Evening</th> <th style="text-align: center;">Night</th> <th style="text-align: center;">Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td style="text-align: center;">77.5%</td> <td style="text-align: center;">12.9%</td> <td style="text-align: center;">9.6%</td> <td style="text-align: center;">97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td style="text-align: center;">84.8%</td> <td style="text-align: center;">4.9%</td> <td style="text-align: center;">10.3%</td> <td style="text-align: center;">1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td style="text-align: center;">86.5%</td> <td style="text-align: center;">2.7%</td> <td style="text-align: center;">10.8%</td> <td style="text-align: center;">0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.08	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.04	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.1	67.0	65.3	59.2	67.9	68.5	
Medium Trucks:	61.7	61.0	54.6	53.1	61.6	61.8	
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2	
Vehicle Noise:	69.8	68.9	65.8	61.1	69.6	70.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	273	589
CNEL:	63	136	294	632

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Banting to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,569 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,779 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
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### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.09	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.14	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.10	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.2	59.2	67.8	68.4
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7
Heavy Trucks:	62.0	61.4	52.4	53.7	62.0	62.1
Vehicle Noise:	69.7	68.8	65.8	61.0	69.5	70.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	126	271	583
CNEL:	63	135	291	627

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative Project Name: Irvine GP  
 Road Name: Alton Parkway Job Number: 15937  
 Road Segment: Barranca Pkwy/Muirlands Blvd to Jeronimo Road

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,021 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,219 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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Autos:	77.5%	12.9%	9.6%	97.42%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.57	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.53	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	67.9	66.1	60.1	68.7	69.3
Medium Trucks:	62.5	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	63.0	62.4	53.3	54.6	62.9	63.1
Vehicle Noise:	70.7	69.8	66.7	61.9	70.5	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	195	419	903
CNEL:	97	209	450	970



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Ada to Technology Drive East

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,707 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,028 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.40	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.83	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.79	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.9	59.8	68.4	69.1	
Medium Trucks:	62.3	61.6	55.2	53.7	62.2	62.4	
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8	
Vehicle Noise:	70.4	69.5	66.4	61.7	70.2	70.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	187	402	867
CNEL:	93	201	432	932

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,273 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,672 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.41	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.37	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	65.0	58.9	67.5	68.1
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	61.8	61.2	52.1	53.4	61.7	61.9
Vehicle Noise:	69.5	68.6	65.5	60.7	69.3	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	121	260	560
CNEL:	60	130	279	601

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Jeronimo Road to Hughes

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,649 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,529 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.62	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.62	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.57	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.9	65.1	59.0	67.7	68.3
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	69.6	68.7	65.7	60.9	69.4	69.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	357	769
CNEL:	83	178	383	826

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Hughes to Morgan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,715 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,451 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.49	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.75	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.71	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	66.7	65.0	58.9	67.5	68.1	
Medium Trucks:	61.4	60.7	54.3	52.8	61.2	61.5	
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9	
Vehicle Noise:	69.5	68.6	65.5	60.7	69.3	69.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	350	753
CNEL:	81	174	376	809

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Morgan to Toledo Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,331 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,090 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.79	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.45	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.40	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.1	66.0	64.3	58.2	66.8	67.4	
Medium Trucks:	60.7	60.0	53.6	52.1	60.5	60.8	
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2	
Vehicle Noise:	68.8	67.9	64.8	60.0	68.6	69.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	146	314	677
CNEL:	73	157	338	727

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: San Marino to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,956 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,141 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.90	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.34	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.30	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.1	64.4	58.3	66.9	67.5
Medium Trucks:	60.8	60.1	53.7	52.2	60.6	60.9
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	68.9	68.0	64.9	60.2	68.7	69.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	148	319	688
CNEL:	74	159	343	739

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Jamboree Road to Murphy Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,156 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,075 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.76	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.48	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.43	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.0	64.2	58.2	66.8	67.4
Medium Trucks:	60.6	60.0	53.6	52.1	60.5	60.7
Heavy Trucks:	61.0	60.5	51.4	52.7	61.0	61.2
Vehicle Noise:	68.8	67.8	64.8	60.0	68.6	69.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	145	313	674
CNEL:	72	156	336	724

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Hospital to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,499 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,104 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 47.329				
Road Grade: 0.0%	Medium Trucks: 47.244				
Left View: -90.0 degrees	Heavy Trucks: 47.329				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.82	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.42	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.37	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.1	69.0	67.2	61.2	69.8	70.4	
Medium Trucks:	63.6	63.0	56.6	55.1	63.5	63.8	
Heavy Trucks:	64.1	63.5	54.4	55.7	64.0	64.2	
Vehicle Noise:	71.8	70.9	67.8	63.0	71.6	72.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	165	355	764
CNEL:	82	177	381	821



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,321 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,006 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 47.329				
Road Grade: 0.0%	Medium Trucks: 47.244				
Left View: -90.0 degrees	Heavy Trucks: 47.329				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.62	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.62	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.58	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.9	68.8	67.0	61.0	69.6	70.2	
Medium Trucks:	63.4	62.8	56.4	54.9	63.3	63.6	
Heavy Trucks:	63.9	63.3	54.2	55.5	63.8	64.0	
Vehicle Noise:	71.6	70.7	67.6	62.8	71.4	71.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	344	741
CNEL:	80	171	369	796

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Murphy Avenue to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,016 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,981 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.56	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.68	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.63	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.9	65.8	64.0	58.0	66.6	67.2
Medium Trucks:	60.4	59.8	53.4	51.9	60.3	60.5
Heavy Trucks:	60.8	60.3	51.2	52.5	60.8	61.0
Vehicle Noise:	68.6	67.6	64.6	59.8	68.4	68.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	141	303	653
CNEL:	70	151	326	702

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Foster to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,305 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,923 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.43	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.81	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.76	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4
Heavy Trucks:	60.7	60.1	51.1	52.3	60.7	60.8
Vehicle Noise:	68.4	67.5	64.5	59.7	68.2	68.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	138	297	641
CNEL:	69	148	319	688

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Fairbanks to Foster

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,341 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,843 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.25	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.99	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.95	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.6	65.5	63.7	57.7	66.3	66.9	
Medium Trucks:	60.1	59.4	53.1	51.5	60.0	60.2	
Heavy Trucks:	60.5	59.9	50.9	52.2	60.5	60.6	
Vehicle Noise:	68.2	67.3	64.3	59.5	68.1	68.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	134	289	623
CNEL:	67	144	311	669

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Toledo Way to Bertea

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,840 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,802 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.05	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.5	65.4	63.6	57.6	66.2	66.8	
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1	
Heavy Trucks:	60.4	59.8	50.8	52.1	60.4	60.5	
Vehicle Noise:	68.1	67.2	64.2	59.4	68.0	68.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	285	613
CNEL:	66	142	306	659

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Pacifica to Meridian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,324 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,924 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 47.329				
Road Grade: 0.0%	Medium Trucks: 47.244				
Left View: -90.0 degrees	Heavy Trucks: 47.329				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.43	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.80	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.76	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.9	60.8	69.4	70.0
Medium Trucks:	63.3	62.6	56.2	54.7	63.1	63.4
Heavy Trucks:	63.7	63.1	54.1	55.3	63.7	63.8
Vehicle Noise:	71.4	70.5	67.4	62.6	71.2	71.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	72	155	334	720
CNEL:	77	167	359	774

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Bertea to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,315 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,758 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.04	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.20	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.15	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0
Heavy Trucks:	60.3	59.7	50.7	52.0	60.3	60.4
Vehicle Noise:	68.0	67.1	64.1	59.3	67.8	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	280	604
CNEL:	65	140	301	648

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Meridian to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,018 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,734 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.02	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.26	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.21	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.2	63.5	57.4	66.0	66.6
Medium Trucks:	59.9	59.2	52.8	51.3	59.7	60.0
Heavy Trucks:	60.3	59.7	50.6	51.9	60.3	60.4
Vehicle Noise:	68.0	67.1	64.0	59.2	67.8	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	278	598
CNEL:	64	138	298	642



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Paseo Westpark to San Marino

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,047 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,736 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.01	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.25	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.21	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.2	63.5	57.4	66.0	66.6
Medium Trucks:	59.9	59.2	52.8	51.3	59.7	60.0
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	68.0	67.1	64.0	59.2	67.8	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	278	598
CNEL:	64	139	298	643

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Alton Parkway  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,516 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,528 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.57	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.81	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.76	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.7	64.7	62.9	56.9	65.5	66.1	
Medium Trucks:	59.3	58.6	52.3	50.7	59.2	59.4	
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8	
Vehicle Noise:	67.4	66.5	63.5	58.7	67.2	67.7	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	255	549
CNEL:	59	127	274	590

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Astor  
 Road Segment: Lynx to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,799 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,633 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 37.138				
Road Grade: 0.0%		Medium Trucks: 37.030				
Left View: -90.0 degrees		Heavy Trucks: 37.139				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	1.94	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-15.30	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-19.25	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.3	61.5	55.4	64.1	64.7
Medium Trucks:	58.8	58.2	51.8	50.3	58.7	58.9
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4
Vehicle Noise:	66.8	66.0	62.3	58.1	66.7	67.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	48	104	225
CNEL:	24	52	111	239

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Astor  
 Road Segment: Cadence to Lynx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,995 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,237 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	0.73	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-16.50	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-20.46	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.1	62.1	60.3	54.2	62.9	63.5
Medium Trucks:	57.6	57.0	50.6	49.0	57.5	57.7
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2
Vehicle Noise:	65.6	64.8	61.1	56.9	65.5	65.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	40	87	187
CNEL:	20	43	92	199

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Bake Parkway  
 Road Segment: I-5 NB Off-Ramp to Rockfield Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 98,304 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 8,110 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	6.68	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-10.56	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-14.51	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.8	73.7	71.9	65.9	74.5	75.1
Medium Trucks:	68.3	67.7	61.3	59.8	68.2	68.5
Heavy Trucks:	68.8	68.2	59.1	60.4	68.7	68.9
Vehicle Noise:	76.5	75.6	72.5	67.7	76.3	76.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	262	564	1,216	2,619
CNEL:	281	606	1,306	2,814

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bake Parkway  
 Road Segment: Muirlands Boulevard to Jeronimo Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 62,986 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,196 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.75	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-12.49	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-16.45	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.1	70.0	68.2	62.2	70.8	71.4	
Medium Trucks:	64.6	63.9	57.6	56.0	64.5	64.7	
Heavy Trucks:	65.0	64.4	55.4	56.7	65.0	65.1	
Vehicle Noise:	72.7	71.8	68.8	64.0	72.6	73.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	124	268	577	1,243
CNEL:	134	288	620	1,335

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Bake Parkway  
 Road Segment: Rockfield Boulevard to Muirlands Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 67,539 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,572 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	5.05	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-12.19	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-16.14	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.1	72.1	70.3	64.3	72.9	73.5
Medium Trucks:	66.7	66.0	59.7	58.1	66.6	66.8
Heavy Trucks:	67.1	66.5	57.5	58.8	67.1	67.2
Vehicle Noise:	74.8	73.9	70.9	66.1	74.6	75.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	204	439	947	2,039
CNEL:	219	472	1,017	2,191

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bake Parkway  
 Road Segment: Jeronimo Road to Toledo Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 51,196 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,224 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.85	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.39	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.35	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.2	69.1	67.3	61.3	69.9	70.5	
Medium Trucks:	63.7	63.0	56.7	55.1	63.6	63.8	
Heavy Trucks:	64.1	63.5	54.5	55.8	64.1	64.2	
Vehicle Noise:	71.8	70.9	67.9	63.1	71.7	72.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	108	233	502	1,082
CNEL:	116	251	540	1,163



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Bake Parkway  
 Road Segment: Toledo Way to Cromwell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,627 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,847 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.44	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.80	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.75	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.7	66.9	60.9	69.5	70.1
Medium Trucks:	63.3	62.6	56.3	54.7	63.2	63.4
Heavy Trucks:	63.7	63.1	54.1	55.4	63.7	63.8
Vehicle Noise:	71.4	70.5	67.5	62.7	71.2	71.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	102	219	472	1,017
CNEL:	109	235	507	1,093

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Bake Parkway  
 Road Segment: Cromwell to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,084 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,719 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.30	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.94	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.90	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.8	60.7	69.3	69.9
Medium Trucks:	63.2	62.5	56.1	54.6	63.0	63.3
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7
Vehicle Noise:	71.3	70.4	67.3	62.6	71.1	71.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	99	214	462	994
CNEL:	107	230	496	1,068

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bake Parkway  
 Road Segment: Research Drive to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,944 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,388 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.37	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.87	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.82	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.7	66.6	64.8	58.8	67.4	68.0	
Medium Trucks:	61.2	60.6	54.2	52.7	61.1	61.4	
Heavy Trucks:	61.7	61.1	52.0	53.3	61.6	61.8	
Vehicle Noise:	69.4	68.5	65.4	60.6	69.2	69.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	344	740
CNEL:	80	171	369	795

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Bake Parkway  
 Road Segment: Irvine Center Drive to Research Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,673 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	798 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	84.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 74.458				
Road Grade:	0.0%	Medium Trucks: 74.404				
Left View:	-90.0 degrees	Heavy Trucks: 74.458				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.39	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-20.63	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-24.58	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.9	61.9	60.1	54.0	62.7	63.3
Medium Trucks:	56.5	55.8	49.4	47.9	56.4	56.6
Heavy Trucks:	56.9	56.3	47.3	48.5	56.9	57.0
Vehicle Noise:	64.6	63.7	60.7	55.9	64.4	64.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	165	356
CNEL:	38	82	178	383

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bake Parkway  
 Road Segment: Lake Forest Drive to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,866 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 566 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.88	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-22.12	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-26.07	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.4	60.4	58.6	52.5	61.2	61.8	
Medium Trucks:	55.0	54.3	48.0	46.4	54.9	55.1	
Heavy Trucks:	55.4	54.8	45.8	47.0	55.4	55.5	
Vehicle Noise:	63.1	62.2	59.2	54.4	62.9	63.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	132	284
CNEL:	30	66	141	305

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Banting  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,569 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 459 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-4.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-21.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-25.43	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	57.8	56.8	55.0	48.9	57.6	58.2	
Medium Trucks:	52.0	51.4	45.0	43.5	51.9	52.1	
Heavy Trucks:	53.9	53.3	44.3	45.5	53.9	54.0	
Vehicle Noise:	60.0	59.2	55.7	51.3	59.9	60.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	13	28	61	132
CNEL:	14	30	65	141

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Pacifica to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,132 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,981 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.92	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-15.32	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.27	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.4	68.6	62.6	71.2	71.8
Medium Trucks:	64.8	64.2	57.8	56.3	64.7	65.0
Heavy Trucks:	64.9	64.3	55.3	56.5	64.9	65.0
Vehicle Noise:	73.0	72.1	69.2	64.3	72.8	73.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	208	448	965
CNEL:	104	224	482	1,039

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Banting to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,152 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,653 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.41	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-15.82	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.78	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.9	69.9	68.1	62.1	70.7	71.3
Medium Trucks:	64.3	63.7	57.3	55.8	64.2	64.5
Heavy Trucks:	64.4	63.8	54.7	56.0	64.4	64.5
Vehicle Noise:	72.5	71.6	68.6	63.8	72.3	72.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	192	415	893
CNEL:	96	207	446	961



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: I-5 HOV Ramp to Technology Drive West

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,565 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,769 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-15.64	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.59	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.1	70.1	68.3	62.3	70.9	71.5	
Medium Trucks:	64.5	63.9	57.5	55.9	64.4	64.6	
Heavy Trucks:	64.6	64.0	54.9	56.2	64.5	64.7	
Vehicle Noise:	72.7	71.8	68.8	64.0	72.5	73.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	427	919
CNEL:	99	213	459	989

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Technology Drive West to Ada

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,332 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,585 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.30	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-15.94	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.89	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.8	69.8	68.0	62.0	70.6	71.2	
Medium Trucks:	64.2	63.6	57.2	55.7	64.1	64.3	
Heavy Trucks:	64.3	63.7	54.6	55.9	64.2	64.4	
Vehicle Noise:	72.4	71.5	68.5	63.7	72.2	72.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	189	407	878
CNEL:	94	203	438	944

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Irvine Center Drive to I-5 HOV Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,796 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,541 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.01	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.97	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.8	69.7	67.9	61.9	70.5	71.1	
Medium Trucks:	64.2	63.5	57.1	55.6	64.0	64.3	
Heavy Trucks:	64.2	63.6	54.6	55.8	64.2	64.3	
Vehicle Noise:	72.3	71.4	68.5	63.6	72.1	72.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	187	403	868
CNEL:	93	201	433	934

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,434 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,346 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.88	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.36	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.31	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	69.4	67.6	61.5	70.2	70.8
Medium Trucks:	63.8	63.1	56.8	55.2	63.7	63.9
Heavy Trucks:	63.8	63.3	54.2	55.5	63.8	63.9
Vehicle Noise:	72.0	71.1	68.1	63.2	71.8	72.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	382	823
CNEL:	89	191	411	885

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: East Yale Loop to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,062 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,315 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.82	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.42	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.37	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	69.3	67.5	61.5	70.1	70.7
Medium Trucks:	63.8	63.1	56.7	55.2	63.6	63.9
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9
Vehicle Noise:	71.9	71.0	68.1	63.2	71.7	72.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	176	379	816
CNEL:	88	189	407	877

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: West Yale Loop to Lake Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,146 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,240 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.68	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.52	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	69.2	67.4	61.3	70.0	70.6
Medium Trucks:	63.6	62.9	56.6	55.0	63.5	63.7
Heavy Trucks:	63.6	63.0	54.0	55.3	63.6	63.7
Vehicle Noise:	71.8	70.9	67.9	63.0	71.6	72.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	172	370	798
CNEL:	86	185	398	858

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Ada to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,638 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,280 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.76	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.44	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.2	67.5	61.4	70.0	70.6
Medium Trucks:	63.7	63.0	56.7	55.1	63.6	63.8
Heavy Trucks:	63.7	63.1	54.1	55.3	63.7	63.8
Vehicle Noise:	71.9	70.9	68.0	63.1	71.7	72.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	375	807
CNEL:	87	187	403	869

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Lake Road to Creek Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,488 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,103 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.41	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.83	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.79	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	68.9	67.1	61.1	69.7	70.3
Medium Trucks:	63.3	62.7	56.3	54.8	63.2	63.4
Heavy Trucks:	63.4	62.8	53.7	55.0	63.3	63.5
Vehicle Noise:	71.5	70.6	67.6	62.8	71.3	71.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	165	355	765
CNEL:	82	177	382	823



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Red Hill Avenue to Armstrong Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 48,793 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,025 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.23	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-14.01	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.97	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.9	71.8	70.1	64.0	72.6	73.2	
Medium Trucks:	66.3	65.6	59.3	57.7	66.2	66.4	
Heavy Trucks:	66.3	65.7	56.7	57.9	66.3	66.4	
Vehicle Noise:	74.5	73.5	70.6	65.7	74.3	74.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	193	415	894	1,927
CNEL:	207	447	962	2,073

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Discovery/Herchel to Banting

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,618 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,031 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.94	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	67.0	60.9	69.5	70.1
Medium Trucks:	63.2	62.5	56.1	54.6	63.1	63.3
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3
Vehicle Noise:	71.4	70.4	67.5	62.6	71.2	71.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	347	747
CNEL:	80	173	373	804

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Lyon to East Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,159 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,993 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.02	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.9	60.8	69.4	70.1
Medium Trucks:	63.1	62.4	56.1	54.5	63.0	63.2
Heavy Trucks:	63.1	62.5	53.5	54.8	63.1	63.2
Vehicle Noise:	71.3	70.4	67.4	62.5	71.1	71.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	343	738
CNEL:	79	171	369	794

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Creek Road to Lyon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,764 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,961 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.14	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.09	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.6	66.8	60.8	69.4	70.0
Medium Trucks:	63.0	62.4	56.0	54.4	62.9	63.1
Heavy Trucks:	63.1	62.5	53.4	54.7	63.0	63.2
Vehicle Noise:	71.2	70.3	67.3	62.5	71.0	71.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	339	730
CNEL:	79	169	365	785

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 42,548 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,510 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.63	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.61	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.56	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.9	69.9	68.1	62.0	70.7	71.3
Medium Trucks:	64.3	63.6	57.3	55.7	64.2	64.4
Heavy Trucks:	64.3	63.8	54.7	56.0	64.3	64.5
Vehicle Noise:	72.5	71.6	68.6	63.7	72.3	72.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	245	529	1,139
CNEL:	123	264	569	1,225

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Sand Canyon Avenue to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,751 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,794 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.48	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.3	68.2	66.4	60.4	69.0	69.6	
Medium Trucks:	62.6	62.0	55.6	54.1	62.5	62.8	
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8	
Vehicle Noise:	70.8	69.9	66.9	62.1	70.6	71.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	148	319	688
CNEL:	74	160	344	740

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Armstrong Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,468 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,256 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.30	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.93	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.89	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	69.5	67.8	61.7	70.3	70.9
Medium Trucks:	64.0	63.3	57.0	55.4	63.9	64.1
Heavy Trucks:	64.0	63.4	54.4	55.6	64.0	64.1
Vehicle Noise:	72.2	71.2	68.3	63.4	72.0	72.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	108	233	503	1,083
CNEL:	117	251	541	1,165

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,139 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,661 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.62	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.86	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.81	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.9	66.1	60.0	68.7	69.3
Medium Trucks:	62.3	61.6	55.3	53.7	62.2	62.4
Heavy Trucks:	62.3	61.8	52.7	54.0	62.3	62.4
Vehicle Noise:	70.5	69.6	66.6	61.7	70.3	70.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	141	303	654
CNEL:	70	152	326	703



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Jamboree Road to Construction Circle

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,282 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,663 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.43	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.81	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.76	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.3	68.3	66.5	60.4	69.1	69.7	
Medium Trucks:	62.7	62.0	55.7	54.1	62.6	62.8	
Heavy Trucks:	62.7	62.2	53.1	54.4	62.7	62.8	
Vehicle Noise:	70.9	70.0	67.0	62.1	70.7	71.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	201	434	934
CNEL:	100	216	466	1,005

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Santa Rosa to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,019 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,559 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.26	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.98	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.94	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.1	66.3	60.3	68.9	69.5
Medium Trucks:	62.5	61.9	55.5	54.0	62.4	62.6
Heavy Trucks:	62.6	62.0	52.9	54.2	62.5	62.7
Vehicle Noise:	70.7	69.8	66.8	62.0	70.5	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	196	422	909
CNEL:	98	211	454	978

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: FedEx to Discovery/Herchel

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,005 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,568 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.87	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.06	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.1	61.4	55.0	53.5	61.9	62.2
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	70.2	69.3	66.4	61.5	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	292	629
CNEL:	68	146	314	677

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Jeffrey Road to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 18,482 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,525 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.99	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.18	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.5	65.7	59.7	68.3	68.9	
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.1	
Heavy Trucks:	62.0	61.4	52.3	53.6	61.9	62.1	
Vehicle Noise:	70.1	69.2	66.2	61.4	69.9	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	287	617
CNEL:	66	143	308	664

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Laguna Canyon Road to FedEx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 18,440 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,521 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.19	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.5	65.7	59.7	68.3	68.9	
Medium Trucks:	61.9	61.3	54.9	53.3	61.8	62.0	
Heavy Trucks:	62.0	61.4	52.3	53.6	61.9	62.1	
Vehicle Noise:	70.1	69.2	66.2	61.4	69.9	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	286	617
CNEL:	66	143	308	663

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Pullman Street to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 38,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,135 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.14	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-15.10	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-19.05	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.8	70.7	69.0	62.9	71.5	72.2
Medium Trucks:	65.2	64.5	58.2	56.6	65.1	65.3
Heavy Trucks:	65.2	64.6	55.6	56.9	65.2	65.3
Vehicle Noise:	73.4	72.5	69.5	64.6	73.2	73.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	163	351	757	1,631
CNEL:	175	378	814	1,755

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Construction Circle to Fire Station

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,462 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,348 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.88	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.35	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.31	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.2	61.5	55.1	53.6	62.0	62.3
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	70.3	69.4	66.5	61.6	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	399	859
CNEL:	92	199	429	924

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Fire Station to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,462 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,348 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.88	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.35	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.31	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.2	61.5	55.1	53.6	62.0	62.3
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	70.3	69.4	66.5	61.6	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	399	859
CNEL:	92	199	429	924



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Paseo Westpark to Santa Rosa

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,055 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,315 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.82	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.42	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.37	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.9	59.8	68.4	69.0
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2
Heavy Trucks:	62.1	61.5	52.5	53.8	62.1	62.2
Vehicle Noise:	70.3	69.4	66.4	61.5	70.1	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	183	395	851
CNEL:	92	197	425	915

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,884 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,135 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.47	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.77	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.72	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	61.7	61.1	54.7	53.2	61.6	61.9
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	69.9	69.0	66.1	61.2	69.7	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	374	806
CNEL:	87	187	403	867

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bay Tree  
 Road Segment: Trabuco Road to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,675 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 221 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-7.42	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-24.66	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-28.62	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.6	53.6	51.8	45.7	54.4	55.0
Medium Trucks:	48.9	48.2	41.8	40.3	48.7	49.0
Heavy Trucks:	50.7	50.1	41.1	42.3	50.7	50.8
Vehicle Noise:	56.9	56.0	52.5	48.2	56.7	57.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	38	81
CNEL:	9	19	40	86

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Beacon  
 Road Segment: Ridge Valley to Benchmark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,586 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	296 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-5.48	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-22.72	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-26.67	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.9	55.8	54.1	48.0	56.6	57.2
Medium Trucks:	51.4	50.7	44.4	42.8	51.3	51.5
Heavy Trucks:	53.9	53.3	44.3	45.5	53.9	54.0
Vehicle Noise:	59.4	58.5	54.9	50.7	59.2	59.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	15	33	72
CNEL:	8	17	36	77

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Benchmark (LN Street)  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,728 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 143 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-8.65	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-25.89	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-29.84	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	53.7	52.7	50.9	44.9	53.5	54.1	
Medium Trucks:	48.2	47.6	41.2	39.7	48.1	48.4	
Heavy Trucks:	50.7	50.1	41.1	42.3	50.7	50.8	
Vehicle Noise:	56.2	55.4	51.7	47.6	56.1	56.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	10	21	44
CNEL:	5	10	22	47

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bison Avenue  
 Road Segment: SR-73 NB Off-Ramp to California Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,685 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,119 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.31	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.93	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.88	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.5	64.7	58.6	67.3	67.9
Medium Trucks:	61.3	60.6	54.2	52.7	61.2	61.4
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	69.4	68.5	65.3	60.6	69.2	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	255	550
CNEL:	59	127	274	590

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bonita Canyon Drive  
 Road Segment: MacArthur Boulevard to SR-73

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,850 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,545 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 75.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	70.413			
Road Grade: 0.0%	Medium Trucks:	70.356			
Left View: -90.0 degrees	Heavy Trucks:	70.413			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.65	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.59	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-19.55	-2.33	-1.20	-5.25	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.3	65.5	59.4	68.1	68.7
Medium Trucks:	61.9	61.2	54.8	53.3	61.8	62.0
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	338	729
CNEL:	78	169	364	783

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bonita Canyon Drive  
 Road Segment: Turtle Ridge to Shady Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,798 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,716 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 75.0 feet Centerline Dist. to Observer: 75.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 70.413 Medium Trucks: 70.356 Heavy Trucks: 70.413																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.06	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.30	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-21.26	-2.33	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.6	65.5	63.8	57.7	66.3	67.0	
Medium Trucks:	60.2	59.5	53.1	51.6	60.1	60.3	
Heavy Trucks:	60.6	60.0	51.0	52.2	60.6	60.7	
Vehicle Noise:	68.3	67.4	64.3	59.6	68.1	68.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	121	260	561
CNEL:	60	130	280	602



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Bonita Canyon Drive  
 Road Segment: Newport Coast Drive to Turtle Ridge

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,217 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,585 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.41	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.65	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-21.60	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.2	63.4	57.4	66.0	66.6
Medium Trucks:	59.8	59.2	52.8	51.2	59.7	59.9
Heavy Trucks:	60.2	59.7	50.6	51.9	60.2	60.4
Vehicle Noise:	68.0	67.0	64.0	59.2	67.8	68.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	115	247	532
CNEL:	57	123	265	571

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bonita Canyon Drive  
 Road Segment: SR-73 NB Off-Ramp to Newport Coast Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,311 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,511 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 70.413				
Road Grade: 0.0%	Medium Trucks: 70.356				
Left View: -90.0 degrees	Heavy Trucks: 70.413				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.62	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.86	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-21.81	-2.33	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.1	65.0	63.2	57.2	65.8	66.4	
Medium Trucks:	59.6	58.9	52.6	51.0	59.5	59.7	
Heavy Trucks:	60.0	59.4	50.4	51.7	60.0	60.1	
Vehicle Noise:	67.7	66.8	63.8	59.0	67.6	68.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	111	239	515
CNEL:	55	119	257	553

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bosque  
 Road Segment: Cadence to Great Park Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,852 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,060 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 37.138				
Road Grade: 0.0%	Medium Trucks: 37.030				
Left View: -90.0 degrees	Heavy Trucks: 37.139				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	0.06	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-17.17	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-21.13	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.4	61.4	59.6	53.6	62.2	62.8	
Medium Trucks:	57.0	56.3	49.9	48.4	56.8	57.1	
Heavy Trucks:	59.4	58.8	49.8	51.1	59.4	59.5	
Vehicle Noise:	65.0	64.1	60.5	56.3	64.8	65.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	36	78	168
CNEL:	18	39	83	179

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bosque  
 Road Segment: Irvine Boulevard to Benchmark (LN Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,905 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 735 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-1.53	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-18.77	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-22.72	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.9	59.8	58.0	52.0	60.6	61.2	
Medium Trucks:	55.4	54.7	48.3	46.8	55.2	55.5	
Heavy Trucks:	57.8	57.2	48.2	49.5	57.8	57.9	
Vehicle Noise:	63.4	62.5	58.9	54.7	63.2	63.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	13	28	61	132
CNEL:	14	30	65	141

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Bosque  
 Road Segment: Benchmark to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,135 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	671 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-1.92	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-19.16	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-23.12	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.5	59.4	57.6	51.6	60.2	60.8
Medium Trucks:	55.0	54.3	47.9	46.4	54.9	55.1
Heavy Trucks:	57.4	56.9	47.8	49.1	57.4	57.5
Vehicle Noise:	63.0	62.1	58.5	54.3	62.8	63.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	27	58	124
CNEL:	13	29	61	132

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Bosque  
 Road Segment: Great Park Boulevard to Beacon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1,844 vehicles	Autos:				15
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):				15
Peak Hour Volume:	152 vehicles	Heavy Trucks (3+ Axles):				15
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-8.37	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-25.61	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-29.56	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.0	53.0	51.2	45.1	53.8	54.4
Medium Trucks:	48.5	47.9	41.5	39.9	48.4	48.6
Heavy Trucks:	51.0	50.4	41.4	42.6	51.0	51.1
Vehicle Noise:	56.5	55.7	52.0	47.8	56.4	56.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	10	21	46
CNEL:	5	11	23	49

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bosque  
 Road Segment: Beacon to S 5th Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,609 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 133 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-8.96	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-26.20	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-30.15	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	53.4	52.4	50.6	44.5	53.2	53.8	
Medium Trucks:	47.9	47.3	40.9	39.4	47.8	48.0	
Heavy Trucks:	50.4	49.8	40.8	42.0	50.4	50.5	
Vehicle Noise:	55.9	55.1	51.4	47.2	55.8	56.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	20	42
CNEL:	4	10	21	45

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bryan Avenue  
 Road Segment: Jamboree Road to Market Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,410 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,849 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.72	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.48	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.9	65.9	64.1	58.0	66.7	67.3	
Medium Trucks:	60.7	60.0	53.7	52.1	60.6	60.8	
Heavy Trucks:	61.5	60.9	51.9	53.2	61.5	61.6	
Vehicle Noise:	68.8	67.9	64.7	60.0	68.6	69.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	108	233	502
CNEL:	54	116	250	539



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bryan Avenue  
 Road Segment: Market Place to El Camino Real

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,846 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,802 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.61	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.63	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.59	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.8	65.8	64.0	57.9	66.6	67.2	
Medium Trucks:	60.6	59.9	53.5	52.0	60.5	60.7	
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5	
Vehicle Noise:	68.7	67.7	64.6	59.9	68.5	68.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	106	229	494
CNEL:	53	114	246	530

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Bryan Avenue  
 Road Segment: Rubicon to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,397 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,765 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.52	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.68	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.8	66.5	67.1
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	61.3	60.7	51.7	53.0	61.3	61.4
Vehicle Noise:	68.6	67.7	64.5	59.8	68.4	68.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	105	226	487
CNEL:	52	113	242	522

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bryan Avenue  
 Road Segment: El Camino Real to Rubicon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,246 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,753 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.75	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.71	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.7	65.6	63.9	57.8	66.4	67.0	
Medium Trucks:	60.5	59.8	53.4	51.9	60.3	60.6	
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4	
Vehicle Noise:	68.5	67.6	64.5	59.8	68.3	68.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	104	225	485
CNEL:	52	112	241	520

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bryan Avenue  
 Road Segment: Eastwood to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,512 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,197 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.41	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.36	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.0	64.0	62.2	56.2	64.8	65.4	
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9	
Heavy Trucks:	59.6	59.1	50.0	51.3	59.6	59.8	
Vehicle Noise:	66.9	66.0	62.8	58.1	66.7	67.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	174	376
CNEL:	40	87	187	403

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bryan Avenue  
 Road Segment: Westwood to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,258 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,094 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.76	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.7	63.6	61.8	55.8	64.4	65.0	
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5	
Heavy Trucks:	59.3	58.7	49.6	50.9	59.2	59.4	
Vehicle Noise:	66.5	65.6	62.4	57.8	66.3	66.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	164	354
CNEL:	38	82	176	380

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Bryan Avenue  
 Road Segment: Culver Drive to Westwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,038 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,076 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.63	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.83	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.5	61.8	55.7	64.3	64.9
Medium Trucks:	58.3	57.7	51.3	49.8	58.2	58.5
Heavy Trucks:	59.2	58.6	49.6	50.8	59.2	59.3
Vehicle Noise:	66.4	65.5	62.4	57.7	66.2	66.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	75	162	350
CNEL:	38	81	174	375

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Bryan Avenue  
 Road Segment: Yale Avenue to Eastwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,028 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,075 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.64	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.88	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.83	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.5	61.7	55.7	64.3	64.9
Medium Trucks:	58.3	57.7	51.3	49.8	58.2	58.4
Heavy Trucks:	59.2	58.6	49.6	50.8	59.2	59.3
Vehicle Noise:	66.4	65.5	62.4	57.7	66.2	66.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	75	162	350
CNEL:	38	81	174	375

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Cadence  
 Road Segment: Pusan to Chinon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,071 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 583 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.78	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-21.02	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-24.97	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.4	62.3	60.5	54.5	63.1	63.7
Medium Trucks:	57.3	56.7	50.3	48.8	57.2	57.5
Heavy Trucks:	58.7	58.1	49.0	50.3	58.6	58.8
Vehicle Noise:	65.4	64.5	61.2	56.7	65.2	65.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	83	179
CNEL:	19	41	89	192



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Cadence  
 Road Segment: Bosque to Pusan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,542 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	540 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.12	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-21.36	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-25.31	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.0	62.0	60.2	54.1	62.8	63.4
Medium Trucks:	57.0	56.3	50.0	48.4	56.9	57.1
Heavy Trucks:	58.3	57.7	48.7	49.9	58.3	58.4
Vehicle Noise:	65.0	64.1	60.9	56.3	64.9	65.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	79	170
CNEL:	18	39	85	182

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Cadence  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 4,909 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 405 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 37.138				
Road Grade: 0.0%	Medium Trucks: 37.030				
Left View: -90.0 degrees	Heavy Trucks: 37.139				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.37	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-22.60	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-26.56	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.8	60.7	59.0	52.9	61.5	62.1	
Medium Trucks:	55.8	55.1	48.7	47.2	55.6	55.9	
Heavy Trucks:	57.1	56.5	47.4	48.7	57.1	57.2	
Vehicle Noise:	63.8	62.9	59.6	55.1	63.6	64.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	30	65	140
CNEL:	15	32	70	150

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Cadence  
 Road Segment: Chinon to Merit

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,298 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 272 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-7.09	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-24.33	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-28.29	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.1	59.0	57.2	51.2	59.8	60.4	
Medium Trucks:	54.0	53.4	47.0	45.5	53.9	54.2	
Heavy Trucks:	55.3	54.8	45.7	47.0	55.3	55.5	
Vehicle Noise:	62.1	61.2	57.9	53.3	61.9	62.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	23	50	108
CNEL:	12	25	54	115

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Cadence  
 Road Segment: Merit to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1,698 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	140 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-9.97	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-27.21	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-31.17	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.2	56.1	54.3	48.3	56.9	57.5
Medium Trucks:	51.2	50.5	44.1	42.6	51.0	51.3
Heavy Trucks:	52.5	51.9	42.8	44.1	52.4	52.6
Vehicle Noise:	59.2	58.3	55.0	50.5	59.0	59.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	15	32	69
CNEL:	7	16	34	74

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: California Avenue  
 Road Segment: University Drive to Academy Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,758 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,300 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.30	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.54	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.49	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.0	62.9	61.1	55.1	63.7	64.3
Medium Trucks:	57.9	57.3	50.9	49.4	57.8	58.1
Heavy Trucks:	59.3	58.7	49.6	50.9	59.2	59.4
Vehicle Noise:	66.0	65.1	61.8	57.3	65.8	66.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	152	327
CNEL:	35	76	163	350

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: California Avenue  
 Road Segment: Campus Drive to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,868 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 814 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 40 mph																					
Near/Far Lane Distance: 48 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 62.5 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 62.5 feet																					
Barrier Distance to Observer: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Observer Height (Above Pad): 5.0 feet	Autos: 57.786																				
Pad Elevation: 0.0 feet	Medium Trucks: 57.717																				
Road Elevation: 0.0 feet	Heavy Trucks: 57.787																				
Road Grade: 0.0%																					
Left View: -90.0 degrees																					
Right View: 90.0 degrees																					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.33	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.57	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.53	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	60.9	59.1	53.0	61.7	62.3
Medium Trucks:	55.9	55.2	48.9	47.3	55.8	56.0
Heavy Trucks:	57.2	56.6	47.6	48.8	57.2	57.3
Vehicle Noise:	63.9	63.0	59.8	55.2	63.8	64.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	111	240
CNEL:	26	55	119	257

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: California Avenue  
 Road Segment: Theory to Bison Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,160 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	756 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.89	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.85	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.6	60.5	58.8	52.7	61.3	62.0	
Medium Trucks:	55.6	54.9	48.5	47.0	55.5	55.7	
Heavy Trucks:	56.9	56.3	47.3	48.5	56.9	57.0	
Vehicle Noise:	63.6	62.7	59.4	54.9	63.4	63.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	49	106	228
CNEL:	24	53	113	244

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Campus Drive  
 Road Segment: Carlson Avenue to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,942 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,388 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.37	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-15.87	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-19.82	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.3	70.2	68.5	62.4	71.0	71.6	
Medium Trucks:	64.9	64.2	57.8	56.3	64.7	65.0	
Heavy Trucks:	65.3	64.7	55.6	56.9	65.2	65.4	
Vehicle Noise:	73.0	72.1	69.0	64.2	72.8	73.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	356	766
CNEL:	82	177	382	823



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Campus Drive  
 Road Segment: University Drive to Bridge Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,687 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,697 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.90	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.29	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	68.8	67.0	61.0	69.6	70.2
Medium Trucks:	63.4	62.8	56.4	54.8	63.3	63.5
Heavy Trucks:	63.8	63.3	54.2	55.5	63.8	63.9
Vehicle Noise:	71.6	70.6	67.6	62.8	71.4	71.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	357	769
CNEL:	83	178	384	827

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Campus Drive  
 Road Segment: Jamboree Road to Carlson Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,504 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,517 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.64	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.59	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.7	60.7	69.3	69.9
Medium Trucks:	63.1	62.5	56.1	54.5	63.0	63.2
Heavy Trucks:	63.5	63.0	53.9	55.2	63.5	63.6
Vehicle Noise:	71.3	70.3	67.3	62.5	71.1	71.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	158	341	735
CNEL:	79	170	366	789

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Campus Drive  
 Road Segment: Stanford Court to Berkeley Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,642 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,280 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.02	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.1	66.3	60.2	68.9	69.5
Medium Trucks:	62.7	62.0	55.7	54.1	62.6	62.8
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	70.8	69.9	66.9	62.1	70.6	71.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	148	319	688
CNEL:	74	159	343	739

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Campus Drive  
 Road Segment: California Avenue to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,572 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,192 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.19	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.0	67.9	66.1	60.1	68.7	69.3	
Medium Trucks:	62.5	61.9	55.5	53.9	62.4	62.6	
Heavy Trucks:	62.9	62.4	53.3	54.6	62.9	63.0	
Vehicle Noise:	70.7	69.7	66.7	61.9	70.5	70.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	311	670
CNEL:	72	155	334	720

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Campus Drive  
 Road Segment: Berkeley Avenue to Cornell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,468 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,771 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.07	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.16	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.12	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.0	67.0	65.2	59.1	67.8	68.4	
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7	
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1	
Vehicle Noise:	69.7	68.8	65.8	61.0	69.5	70.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	270	581
CNEL:	62	135	290	625

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Campus Drive  
 Road Segment: Martin to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,343 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,431 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.85	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.09	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.05	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.1	66.0	64.3	58.2	66.8	67.4	
Medium Trucks:	60.7	60.0	53.6	52.1	60.6	60.8	
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2	
Vehicle Noise:	68.8	67.9	64.8	60.1	68.6	69.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	109	234	504
CNEL:	54	117	251	542

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative Project Name: Irvine GP  
 Road Name: Campus Drive Job Number: 15937  
 Road Segment: Culver Drive to Paseo Montoya (Turtle Rock Drive)

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 16,048 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 1,324 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 50 mph																					
Near/Far Lane Distance: 48 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 62.5 feet	Heavy Trucks: 8.006 <span style="float:right">Grade Adjustment: 0.0</span>																				
Centerline Dist. to Observer: 62.5 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 57.786																				
Left View: -90.0 degrees	Medium Trucks: 57.717																				
Right View: 90.0 degrees	Heavy Trucks: 57.787																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.38	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.3	59.7	53.3	51.8	60.2	60.4
Heavy Trucks:	60.7	60.2	51.1	52.4	60.7	60.9
Vehicle Noise:	68.5	67.5	64.5	59.7	68.3	68.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	222	479
CNEL:	51	111	239	515

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Campus Drive  
 Road Segment: Von Karman Avenue to Teller Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,824 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,223 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.73	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.4	63.6	57.5	66.2	66.8
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1
Heavy Trucks:	60.4	59.8	50.8	52.0	60.4	60.5
Vehicle Noise:	68.1	67.2	64.2	59.4	67.9	68.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	98	211	454
CNEL:	49	105	227	488



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Campus Drive  
 Road Segment: MacArthur Boulevard to Martin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,285 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,179 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.70	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.93	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.89	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.2	63.4	57.4	66.0	66.6
Medium Trucks:	59.8	59.2	52.8	51.2	59.7	59.9
Heavy Trucks:	60.2	59.7	50.6	51.9	60.2	60.4
Vehicle Noise:	68.0	67.0	64.0	59.2	67.8	68.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	95	206	443
CNEL:	48	103	221	476

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Campus Drive  
 Road Segment: Teller Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,126 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,000 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.41	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.60	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.6	64.5	62.7	56.7	65.3	65.9	
Medium Trucks:	59.1	58.4	52.1	50.5	59.0	59.2	
Heavy Trucks:	59.5	58.9	49.9	51.2	59.5	59.6	
Vehicle Noise:	67.2	66.3	63.3	58.5	67.0	67.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	86	184	397
CNEL:	43	92	198	427

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Carlson Avenue  
 Road Segment: Michelson Drive to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,241 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,092 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.22	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.9	63.1	57.0	65.7	66.3
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0
Vehicle Noise:	67.6	66.7	63.7	58.9	67.4	67.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	91	196	421
CNEL:	45	98	210	453

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Chinon  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,470 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	369 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-3.73	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-20.97	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-24.92	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.6	54.6	52.8	46.8	55.4	56.0
Medium Trucks:	50.5	49.8	43.4	41.9	50.4	50.6
Heavy Trucks:	53.7	53.1	44.1	45.3	53.7	53.8
Vehicle Noise:	58.5	57.7	53.8	49.9	58.4	58.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	14	29	63
CNEL:	7	14	31	67

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Creek Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,907 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	405 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-3.33	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-20.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-24.52	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.2	52.1	50.3	44.3	52.9	53.5
Medium Trucks:	48.0	47.3	41.0	39.4	47.9	48.1
Heavy Trucks:	51.2	50.6	41.6	42.8	51.2	51.3
Vehicle Noise:	56.0	55.2	51.3	47.4	55.9	56.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	15	33	72
CNEL:	8	16	35	76

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 61,300 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,057 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.22	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.02	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-16.98	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.1	71.0	69.3	63.2	71.8	72.4
Medium Trucks:	65.5	64.8	58.5	56.9	65.4	65.6
Heavy Trucks:	65.5	64.9	55.9	57.1	65.5	65.6
Vehicle Noise:	73.7	72.8	69.8	64.9	73.5	74.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	309	665	1,432
CNEL:	154	332	715	1,541

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 59,960 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,947 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.12	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.07	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.0	70.9	69.2	63.1	71.7	72.3
Medium Trucks:	65.4	64.7	58.4	56.8	65.3	65.5
Heavy Trucks:	65.4	64.8	55.8	57.1	65.4	65.5
Vehicle Noise:	73.6	72.7	69.7	64.8	73.4	73.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	141	304	655	1,411
CNEL:	152	327	705	1,518

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 60,969 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,030 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.19	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.05	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.00	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.1	71.0	69.2	63.2	71.8	72.4
Medium Trucks:	65.5	64.8	58.4	56.9	65.3	65.6
Heavy Trucks:	65.5	64.9	55.9	57.1	65.5	65.6
Vehicle Noise:	73.7	72.7	69.8	64.9	73.5	73.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	307	662	1,427
CNEL:	154	331	713	1,535



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Scottsdale Drive to I-5 SB Off- Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 59,474 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,907 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.09	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.15	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.11	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.0	70.9	69.1	63.1	71.7	72.3	
Medium Trucks:	65.4	64.7	58.3	56.8	65.2	65.5	
Heavy Trucks:	65.4	64.8	55.8	57.0	65.4	65.5	
Vehicle Noise:	73.5	72.6	69.7	64.8	73.3	73.8	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	140	302	652	1,404
CNEL:	151	325	701	1,510

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: I-405 NB Off-Ramp to San Leandro

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 56,487 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,660 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.86	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.38	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.33	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.7	70.7	68.9	62.9	71.5	72.1
Medium Trucks:	65.1	64.5	58.1	56.6	65.0	65.2
Heavy Trucks:	65.2	64.6	55.5	56.8	65.1	65.3
Vehicle Noise:	73.3	72.4	69.4	64.6	73.1	73.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	136	292	630	1,356
CNEL:	146	314	677	1,459

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: San Leandro to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 53,021 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,374 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.59	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.65	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.61	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.4	68.6	62.6	71.2	71.8
Medium Trucks:	64.9	64.2	57.8	56.3	64.7	65.0
Heavy Trucks:	64.9	64.3	55.3	56.5	64.9	65.0
Vehicle Noise:	73.0	72.1	69.2	64.3	72.8	73.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	130	280	604	1,300
CNEL:	140	301	649	1,399

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Harvard Avenue to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 53,377 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,404 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.62	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.62	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.58	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.4	68.7	62.6	71.2	71.8
Medium Trucks:	64.9	64.2	57.9	56.3	64.8	65.0
Heavy Trucks:	64.9	64.3	55.3	56.5	64.9	65.0
Vehicle Noise:	73.1	72.2	69.2	64.3	72.9	73.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	131	281	606	1,306
CNEL:	141	303	652	1,405

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Trabuco Road to Farwell Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 59,213 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,885 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.07	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.17	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.13	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.4	71.3	69.5	63.5	72.1	72.7	
Medium Trucks:	65.7	65.1	58.7	57.2	65.6	65.9	
Heavy Trucks:	65.8	65.2	56.2	57.4	65.8	65.9	
Vehicle Noise:	73.9	73.0	70.1	65.2	73.7	74.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	142	306	659	1,420
CNEL:	153	329	709	1,527

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 51,504 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,249 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.46	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.78	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.73	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.3	70.3	68.5	62.5	71.1	71.7
Medium Trucks:	64.7	64.1	57.7	56.2	64.6	64.8
Heavy Trucks:	64.8	64.2	55.1	56.4	64.7	64.9
Vehicle Noise:	72.9	72.0	69.0	64.2	72.7	73.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	128	275	592	1,275
CNEL:	137	296	637	1,372

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Main Street to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 49,818 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,110 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.32	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.92	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.88	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.2	70.1	68.4	62.3	70.9	71.5
Medium Trucks:	64.6	63.9	57.6	56.0	64.5	64.7
Heavy Trucks:	64.6	64.0	55.0	56.2	64.6	64.7
Vehicle Noise:	72.8	71.9	68.9	64.0	72.6	73.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	125	269	579	1,247
CNEL:	134	289	623	1,342

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Warner Avenue to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 48,908 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,035 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.24	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.00	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.96	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	70.1	68.3	62.2	70.9	71.5
Medium Trucks:	64.5	63.8	57.5	55.9	64.4	64.6
Heavy Trucks:	64.5	64.0	54.9	56.2	64.5	64.6
Vehicle Noise:	72.7	71.8	68.8	63.9	72.5	73.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	265	572	1,232
CNEL:	133	286	615	1,325



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Walnut Avenue to Scottsdale Dive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 47,641 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,930 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.12	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.07	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.0	69.9	68.2	62.1	70.7	71.3	
Medium Trucks:	64.4	63.7	57.4	55.8	64.3	64.5	
Heavy Trucks:	64.4	63.8	54.8	56.1	64.4	64.5	
Vehicle Noise:	72.6	71.7	68.7	63.8	72.4	72.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	261	562	1,211
CNEL:	130	281	605	1,302

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,548 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,923 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.11	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.12	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.08	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.0	69.9	68.2	62.1	70.7	71.3
Medium Trucks:	64.4	63.7	57.4	55.8	64.3	64.5
Heavy Trucks:	64.4	63.8	54.8	56.0	64.4	64.5
Vehicle Noise:	72.6	71.6	68.7	63.8	72.4	72.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	260	561	1,209
CNEL:	130	280	604	1,301

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Shady Canyon Drive to Palo Verde

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,474 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,184 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.67	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.62	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.0	67.3	61.2	69.8	70.4
Medium Trucks:	63.5	62.8	56.5	54.9	63.4	63.6
Heavy Trucks:	63.5	62.9	53.9	55.2	63.5	63.6
Vehicle Noise:	71.7	70.8	67.8	62.9	71.5	72.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	169	364	785
CNEL:	84	182	392	844

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Deerfield Avenue to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,116 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,640 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.79	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.45	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.41	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.6	67.8	61.8	70.4	71.0
Medium Trucks:	64.1	63.4	57.0	55.5	63.9	64.2
Heavy Trucks:	64.1	63.5	54.5	55.7	64.1	64.2
Vehicle Noise:	72.2	71.3	68.4	63.5	72.0	72.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	248	534	1,150
CNEL:	124	267	574	1,237

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Sandburg Way to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,646 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.80	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.44	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.40	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.7	69.6	67.8	61.8	70.4	71.0	
Medium Trucks:	64.1	63.4	57.0	55.5	64.0	64.2	
Heavy Trucks:	64.1	63.5	54.5	55.7	64.1	64.2	
Vehicle Noise:	72.3	71.3	68.4	63.5	72.1	72.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	248	535	1,152
CNEL:	124	267	575	1,239

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 43,037 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,551 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.68	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.56	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.51	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	69.5	67.7	61.7	70.3	70.9
Medium Trucks:	64.0	63.3	56.9	55.4	63.8	64.1
Heavy Trucks:	64.0	63.4	54.4	55.6	64.0	64.1
Vehicle Noise:	72.1	71.2	68.3	63.4	71.9	72.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	244	525	1,131
CNEL:	122	262	565	1,217

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Palo Verde to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,255 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,001 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.00	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.7	66.9	60.8	69.5	70.1
Medium Trucks:	63.1	62.4	56.1	54.5	63.0	63.2
Heavy Trucks:	63.1	62.6	53.5	54.8	63.1	63.3
Vehicle Noise:	71.3	70.4	67.4	62.5	71.1	71.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	344	740
CNEL:	80	172	370	796

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: University Drive to Sandburg Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,878 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,372 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.46	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.78	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.74	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.3	67.5	61.5	70.1	70.7
Medium Trucks:	63.7	63.1	56.7	55.2	63.6	63.8
Heavy Trucks:	63.8	63.2	54.1	55.4	63.7	63.9
Vehicle Noise:	71.9	71.0	68.0	63.2	71.7	72.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	109	236	507	1,093
CNEL:	118	253	546	1,176



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Farwell Avenue to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 46,710 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,854 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.04	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.20	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.16	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.3	70.3	68.5	62.4	71.1	71.7	
Medium Trucks:	64.7	64.0	57.7	56.1	64.6	64.8	
Heavy Trucks:	64.8	64.2	55.1	56.4	64.7	64.9	
Vehicle Noise:	72.9	72.0	69.0	64.2	72.7	73.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	261	563	1,212
CNEL:	130	281	605	1,304

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Campus Drive to High School

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,825 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,286 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.34	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.89	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.85	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	69.2	67.4	61.3	70.0	70.6
Medium Trucks:	63.6	62.9	56.6	55.0	63.5	63.7
Heavy Trucks:	63.6	63.1	54.0	55.3	63.6	63.8
Vehicle Noise:	71.8	70.9	67.9	63.0	71.6	72.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	107	231	499	1,074
CNEL:	116	249	536	1,156

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: High School to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,094 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,225 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.26	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.98	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.93	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.1	67.3	61.3	69.9	70.5
Medium Trucks:	63.5	62.9	56.5	55.0	63.4	63.7
Heavy Trucks:	63.6	63.0	53.9	55.2	63.6	63.7
Vehicle Noise:	71.7	70.8	67.8	63.0	71.5	72.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	229	493	1,061
CNEL:	114	246	530	1,142

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Bryan Avenue to Florence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 37,153 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,065 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.04	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.20	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.15	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	68.9	67.1	61.0	69.7	70.3
Medium Trucks:	63.3	62.6	56.3	54.7	63.2	63.4
Heavy Trucks:	63.3	62.8	53.7	55.0	63.3	63.5
Vehicle Noise:	71.5	70.6	67.6	62.7	71.3	71.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	103	221	476	1,026
CNEL:	110	238	512	1,104

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Portola Parkway to Settlers

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,169 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,829 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.20	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.44	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.39	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.3	66.5	60.5	69.1	69.7
Medium Trucks:	62.7	62.1	55.7	54.1	62.6	62.8
Heavy Trucks:	62.8	62.2	53.1	54.4	62.7	62.9
Vehicle Noise:	70.9	70.0	67.0	62.2	70.7	71.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	150	324	697
CNEL:	75	162	348	750

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Florence to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 36,281 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,993 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.94	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.30	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.26	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.8	68.8	67.0	60.9	69.6	70.2	
Medium Trucks:	63.2	62.5	56.2	54.6	63.1	63.3	
Heavy Trucks:	63.2	62.7	53.6	54.9	63.2	63.4	
Vehicle Noise:	71.4	70.5	67.5	62.6	71.2	71.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	218	469	1,010
CNEL:	109	234	504	1,086

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Irvine Boulevard to Viewpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,782 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,292 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">VehicleType</th> <th style="text-align: center;">Day</th> <th style="text-align: center;">Evening</th> <th style="text-align: center;">Night</th> <th style="text-align: center;">Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td style="text-align: center;">77.5%</td> <td style="text-align: center;">12.9%</td> <td style="text-align: center;">9.6%</td> <td style="text-align: center;">97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td style="text-align: center;">84.8%</td> <td style="text-align: center;">4.9%</td> <td style="text-align: center;">10.3%</td> <td style="text-align: center;">1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td style="text-align: center;">86.5%</td> <td style="text-align: center;">2.7%</td> <td style="text-align: center;">10.8%</td> <td style="text-align: center;">0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.78	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.46	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.41	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.8	59.8	68.4	69.0	
Medium Trucks:	62.1	61.4	55.0	53.5	61.9	62.2	
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2	
Vehicle Noise:	70.2	69.3	66.4	61.5	70.0	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	182	392	845
CNEL:	91	196	422	909

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Viewpark to Meadowood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,857 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,216 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.63	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.61	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.56	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.5	65.7	59.6	68.3	68.9
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0
Heavy Trucks:	61.9	61.4	52.3	53.6	61.9	62.0
Vehicle Noise:	70.1	69.2	66.2	61.3	69.9	70.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	178	383	826
CNEL:	89	191	413	889



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Settlers to Furrow

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,930 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 984 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.89	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-20.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-24.09	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.6	63.8	57.8	66.4	67.0
Medium Trucks:	60.0	59.4	53.0	51.5	59.9	60.2
Heavy Trucks:	60.1	59.5	50.4	51.7	60.0	60.2
Vehicle Noise:	68.2	67.3	64.3	59.5	68.0	68.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	99	214	461
CNEL:	50	107	230	496

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Culver Drive  
 Road Segment: Meadowood to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,384 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,599 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.78	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-18.02	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.98	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.0	64.3	58.2	66.8	67.4
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	60.5	59.9	50.9	52.1	60.5	60.6
Vehicle Noise:	68.7	67.8	64.8	59.9	68.5	69.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	143	309	665
CNEL:	72	154	332	715

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Discovery Drive  
 Road Segment: Irvine Center Drive to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,332 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,100 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.03	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.22	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.2	62.2	60.4	54.4	63.0	63.6	
Medium Trucks:	57.2	56.5	50.2	48.6	57.1	57.3	
Heavy Trucks:	58.5	57.9	48.9	50.2	58.5	58.6	
Vehicle Noise:	65.2	64.4	61.1	56.5	65.1	65.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	136	293
CNEL:	31	68	146	314

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Discovery Drive  
 Road Segment: Waterworks Way to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,636 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	712 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.91	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.15	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.11	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.4	60.3	58.5	52.5	61.1	61.7
Medium Trucks:	55.3	54.7	48.3	46.7	55.2	55.4
Heavy Trucks:	56.6	56.1	47.0	48.3	56.6	56.8
Vehicle Noise:	63.4	62.5	59.2	54.6	63.2	63.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	102	219
CNEL:	23	51	109	235

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: East Yale Loop  
 Road Segment: Alton Parkway to Witherspoon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,590 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,121 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.94	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.18	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.14	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.3	62.3	60.5	54.4	63.1	63.7
Medium Trucks:	57.3	56.6	50.3	48.7	57.2	57.4
Heavy Trucks:	58.6	58.0	49.0	50.2	58.6	58.7
Vehicle Noise:	65.3	64.4	61.2	56.6	65.1	65.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	297
CNEL:	32	68	147	318

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: East Yale Loop  
 Road Segment: Osborn Street to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,938 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,067 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.16	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.35	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.1	62.0	60.3	54.2	62.8	63.5
Medium Trucks:	57.1	56.4	50.0	48.5	57.0	57.2
Heavy Trucks:	58.4	57.8	48.8	50.0	58.4	58.5
Vehicle Noise:	65.1	64.2	60.9	56.4	64.9	65.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	62	133	287
CNEL:	31	66	143	307

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: East Yale Loop  
 Road Segment: Yale Avenue to Springbrook South

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,895 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 981 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.52	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.76	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.72	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.7	61.7	59.9	53.9	62.5	63.1	
Medium Trucks:	56.7	56.0	49.7	48.1	56.6	56.8	
Heavy Trucks:	58.0	57.4	48.4	49.7	58.0	58.1	
Vehicle Noise:	64.8	63.9	60.6	56.0	64.6	65.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	126	271
CNEL:	29	63	135	291

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: East Yale Loop  
 Road Segment: Springbrook North to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,574 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	707 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.94	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.18	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.14	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.3	60.3	58.5	52.4	61.1	61.7
Medium Trucks:	55.3	54.6	48.3	46.7	55.2	55.4
Heavy Trucks:	56.6	56.0	47.0	48.2	56.6	56.7
Vehicle Noise:	63.3	62.4	59.2	54.6	63.1	63.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	101	218
CNEL:	23	50	108	234



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: East Yale Loop  
 Road Segment: Woodspring to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 7,199 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 594 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.70	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.94	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.90	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.6	59.5	57.7	51.7	60.3	60.9
Medium Trucks:	54.5	53.9	47.5	46.0	54.4	54.7
Heavy Trucks:	55.9	55.3	46.2	47.5	55.8	56.0
Vehicle Noise:	62.6	61.7	58.4	53.8	62.4	62.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	42	90	194
CNEL:	21	45	97	208

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: East Yale Loop  
 Road Segment: Barranca Parkway to Eastshore

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,524 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	538 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.13	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.37	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.32	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.1	59.1	57.3	51.3	59.9	60.5
Medium Trucks:	54.1	53.4	47.1	45.5	54.0	54.2
Heavy Trucks:	55.4	54.8	45.8	47.1	55.4	55.5
Vehicle Noise:	62.1	61.2	58.0	53.4	62.0	62.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	84	182
CNEL:	19	42	90	195

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Eastwood  
 Road Segment: Bryan Avenue to Monticello

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,241 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 267 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-6.59	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-23.83	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-27.78	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.3	57.3	55.5	49.5	58.1	58.7
Medium Trucks:	52.6	51.9	45.5	44.0	52.5	52.7
Heavy Trucks:	54.4	53.8	44.8	46.0	54.4	54.5
Vehicle Noise:	60.6	59.7	56.3	51.9	60.4	60.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	18	40	86
CNEL:	9	20	43	92

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Eastwood  
 Road Segment: Columbus to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,011 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	166 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		37.138		
Left View:	-90.0 degrees	Medium Trucks:		37.030		
Right View:	90.0 degrees	Heavy Trucks:		37.139		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-8.66	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-25.90	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-29.85	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.3	55.2	53.4	47.4	56.0	56.6
Medium Trucks:	50.5	49.8	43.5	41.9	50.4	50.6
Heavy Trucks:	52.3	51.8	42.7	44.0	52.3	52.5
Vehicle Noise:	58.5	57.6	54.2	49.8	58.3	58.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	13	29	62
CNEL:	7	14	31	67

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: El Camino Real  
 Road Segment: Jamboree Road to Alliance (SR-261 Bridge)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,398 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,600 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.64	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.59	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.9	63.8	62.0	56.0	64.6	65.2	
Medium Trucks:	58.8	58.2	51.8	50.3	58.7	59.0	
Heavy Trucks:	60.2	59.6	50.5	51.8	60.1	60.3	
Vehicle Noise:	66.9	66.0	62.7	58.2	66.7	67.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	175	376
CNEL:	40	87	187	403

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: El Camino Real North  
 Road Segment: El Camino Real to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,553 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	541 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.30	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.2	59.1	57.3	51.3	59.9	60.5
Medium Trucks:	54.1	53.5	47.1	45.5	54.0	54.2
Heavy Trucks:	55.4	54.9	45.8	47.1	55.4	55.6
Vehicle Noise:	62.2	61.3	58.0	53.4	62.0	62.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	85	182
CNEL:	20	42	91	195

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Fairbanks  
 Road Segment: Alton Parkway to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,614 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,536 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 37.138				
Road Grade: 0.0%		Medium Trucks: 37.030				
Left View: -90.0 degrees		Heavy Trucks: 37.139				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.42	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-16.81	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-20.77	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.5	64.7	58.7	67.3	67.9
Medium Trucks:	61.6	60.9	54.5	53.0	61.4	61.7
Heavy Trucks:	62.9	62.3	53.2	54.5	62.8	63.0
Vehicle Noise:	69.6	68.7	65.4	60.9	69.4	69.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	342
CNEL:	37	79	170	366

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Fairbanks  
 Road Segment: Irvine Boulevard to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,466 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 781 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.51	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-19.75	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-23.71	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.6	63.6	61.8	55.7	64.4	65.0	
Medium Trucks:	58.6	57.9	51.6	50.0	58.5	58.7	
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0	
Vehicle Noise:	66.6	65.7	62.5	57.9	66.5	66.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	101	218
CNEL:	23	50	108	233



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Fairchild Road  
 Road Segment: MacArthur Boulevard to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,081 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 584 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.48	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	60.9	59.1	53.0	61.7	62.3
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8
Heavy Trucks:	56.5	55.9	46.9	48.2	56.5	56.6
Vehicle Noise:	63.8	62.9	59.7	55.0	63.6	64.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	233
CNEL:	25	54	116	250

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Gateway Boulevard  
 Road Segment: Alton Parkway to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,010 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,403 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	1.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-15.96	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-19.91	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.8	59.7	58.0	51.9	60.5	61.1
Medium Trucks:	55.3	54.6	48.3	46.7	55.2	55.4
Heavy Trucks:	57.8	57.2	48.1	49.4	57.7	57.9
Vehicle Noise:	63.3	62.4	58.8	54.6	63.1	63.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	101	217
CNEL:	23	50	108	232

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative Project Name: Irvine GP  
 Road Name: Gateway Boulevard Job Number: 15937  
 Road Segment: Spectrum Center Drive (Fortune Drive) to Alton Parkway

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,678 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,046 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos: 77.5% 12.9% 9.6% 97.42% Medium Trucks: 84.8% 4.9% 10.3% 1.84% Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
	<b>Noise Source Elevations (in feet)</b>				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>				
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	0.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.19	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	59.5	58.4	56.7	50.6	59.2	59.9	
Medium Trucks:	54.0	53.3	47.0	45.4	53.9	54.1	
Heavy Trucks:	56.5	55.9	46.9	48.1	56.5	56.6	
Vehicle Noise:	62.0	61.2	57.5	53.3	61.8	62.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	83	179
CNEL:	19	41	88	190

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Gateway Boulevard  
 Road Segment: Irvine Center Drive to Meridian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,270 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 517 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-3.05	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-20.29	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-24.25	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	56.5	55.4	53.6	47.6	56.2	56.8	
Medium Trucks:	51.0	50.3	43.9	42.4	50.8	51.1	
Heavy Trucks:	53.4	52.8	43.8	45.1	53.4	53.5	
Vehicle Noise:	59.0	58.1	54.5	50.3	58.8	59.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	112
CNEL:	12	26	55	119

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Great Park Boulevard  
 Road Segment: Sand Canyon to Ridge Valley

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,507 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,754 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.34	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-13.90	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.86	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.6	71.5	69.8	63.7	72.3	72.9	
Medium Trucks:	66.2	65.5	59.1	57.6	66.0	66.3	
Heavy Trucks:	66.6	66.0	57.0	58.2	66.6	66.7	
Vehicle Noise:	74.3	73.4	70.3	65.5	74.1	74.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	112	242	522	1,125
CNEL:	121	260	561	1,208

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Great Park Boulevard  
 Road Segment: Ridge Valley (O Street) to Bosque (LY Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,162 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,911 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.40	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.83	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.79	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	61.9	61.3	54.9	53.3	61.8	62.0
Heavy Trucks:	62.3	61.8	52.7	54.0	62.3	62.5
Vehicle Noise:	70.1	69.1	66.1	61.3	69.9	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	284	612
CNEL:	66	142	305	657

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Great Park Boulevard (EB)  
 Road Segment: Bosque to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,824 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 728 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.79	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-21.03	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-24.98	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.0	64.2	58.2	66.8	67.4
Medium Trucks:	60.6	60.0	53.6	52.0	60.5	60.7
Heavy Trucks:	61.0	60.4	51.4	52.7	61.0	61.1
Vehicle Noise:	68.7	67.8	64.8	60.0	68.5	69.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	139	300
CNEL:	32	69	150	322

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Great Park Boulevard (WB)  
 Road Segment: Bosque to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,648 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 631 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.41	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-21.65	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-25.60	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.4	65.4	63.6	57.5	66.2	66.8	
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1	
Heavy Trucks:	60.4	59.8	50.8	52.0	60.4	60.5	
Vehicle Noise:	68.1	67.2	64.2	59.4	67.9	68.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	59	127	273
CNEL:	29	63	136	293



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: University Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,851 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,885 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.80	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-16.44	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-20.39	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.9	68.8	67.1	61.0	69.6	70.2	
Medium Trucks:	63.7	63.0	56.6	55.1	63.5	63.8	
Heavy Trucks:	64.5	63.9	54.9	56.1	64.5	64.6	
Vehicle Noise:	71.7	70.8	67.7	63.0	71.5	72.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	102	221	475
CNEL:	51	110	237	510

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Michelson Drive to Coronado

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,028 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,560 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.13	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.06	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2
Heavy Trucks:	62.9	62.4	53.3	54.6	62.9	63.1
Vehicle Noise:	70.2	69.3	66.1	61.4	70.0	70.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	134	290	624
CNEL:	67	144	311	669

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: San Marino to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,121 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,402 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.86	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.34	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.2	59.2	67.8	68.4
Medium Trucks:	61.8	61.2	54.8	53.2	61.7	61.9
Heavy Trucks:	62.7	62.1	53.0	54.3	62.7	62.8
Vehicle Noise:	69.9	69.0	65.8	61.2	69.7	70.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	278	598
CNEL:	64	138	298	642

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Coronado to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,811 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,377 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.39	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	67.0	65.2	59.1	67.8	68.4
Medium Trucks:	61.8	61.1	54.7	53.2	61.7	61.9
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	69.9	69.0	65.8	61.1	69.7	70.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	128	276	594
CNEL:	64	137	296	637

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: San Carlo to San Marino

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,438 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,346 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.75	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.49	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.44	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	66.9	65.1	59.1	67.7	68.3
Medium Trucks:	61.7	61.1	54.7	53.1	61.6	61.8
Heavy Trucks:	62.6	62.0	52.9	54.2	62.5	62.7
Vehicle Noise:	69.8	68.9	65.7	61.1	69.6	70.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	273	589
CNEL:	63	136	293	631

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Main Street to San Carlo

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,916 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,303 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.67	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.57	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.52	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.9	66.8	65.1	59.0	67.6	68.2	
Medium Trucks:	61.6	61.0	54.6	53.1	61.5	61.8	
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6	
Vehicle Noise:	69.7	68.8	65.7	61.0	69.5	70.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	270	581
CNEL:	62	134	290	624

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Alton Parkway to San Leon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,733 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.44	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.76	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.6	63.8	57.8	66.4	67.0
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5
Heavy Trucks:	61.2	60.7	51.6	52.9	61.2	61.4
Vehicle Noise:	68.5	67.6	64.4	59.8	68.3	68.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	104	223	481
CNEL:	52	111	239	516

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: San Juan to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,733 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.44	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.76	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.7	65.6	63.8	57.8	66.4	67.0	
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5	
Heavy Trucks:	61.2	60.7	51.6	52.9	61.2	61.4	
Vehicle Noise:	68.5	67.6	64.4	59.8	68.3	68.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	104	223	481
CNEL:	52	111	239	516



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: San Leon to San Juan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,160 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,663 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.94	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.4	63.6	57.6	66.2	66.8
Medium Trucks:	60.2	59.6	53.2	51.7	60.1	60.3
Heavy Trucks:	61.1	60.5	51.4	52.7	61.1	61.2
Vehicle Noise:	68.3	67.4	64.3	59.6	68.1	68.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	101	217	468
CNEL:	50	108	233	502

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,757 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,300 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.01	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.4	64.3	62.6	56.5	65.1	65.7
Medium Trucks:	59.2	58.5	52.1	50.6	59.0	59.3
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1
Vehicle Noise:	67.2	66.3	63.2	58.5	67.0	67.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	86	184	397
CNEL:	43	92	198	426

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Deerfield Avenue to Poplar Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,478 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,277 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.89	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.08	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.3	64.3	62.5	56.4	65.1	65.7
Medium Trucks:	59.1	58.4	52.0	50.5	59.0	59.2
Heavy Trucks:	59.9	59.3	50.3	51.6	59.9	60.0
Vehicle Noise:	67.2	66.3	63.1	58.4	67.0	67.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	85	182	392
CNEL:	42	91	195	421

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,135 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,414 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.45	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.69	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.64	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.8	64.7	62.9	56.9	65.5	66.1	
Medium Trucks:	59.5	58.9	52.5	50.9	59.4	59.6	
Heavy Trucks:	60.4	59.8	50.7	52.0	60.3	60.5	
Vehicle Noise:	67.6	66.7	63.5	58.9	67.4	67.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	90	195	420
CNEL:	45	97	209	450

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Bridge Road to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,144 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,414 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.45	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.68	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.64	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.8	64.7	62.9	56.9	65.5	66.1	
Medium Trucks:	59.5	58.9	52.5	50.9	59.4	59.6	
Heavy Trucks:	60.4	59.8	50.7	52.0	60.3	60.5	
Vehicle Noise:	67.6	66.7	63.5	58.9	67.4	67.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	91	195	420
CNEL:	45	97	209	451

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Paseo Westpark to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,007 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,403 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.48	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.67	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.7	62.9	56.8	65.5	66.1
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6
Heavy Trucks:	60.3	59.7	50.7	52.0	60.3	60.4
Vehicle Noise:	67.6	66.7	63.5	58.8	67.4	67.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	90	194	418
CNEL:	45	97	208	448

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Poplar Street to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,653 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,126 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 42.814				
Road Grade: 0.0%		Medium Trucks: 42.720				
Left View: -90.0 degrees		Heavy Trucks: 42.814				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.43	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	79.45	-18.67	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	84.25	-22.63	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.8	66.5	67.1
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	61.3	60.7	51.7	53.0	61.3	61.4
Vehicle Noise:	68.6	67.7	64.5	59.8	68.4	68.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	181	390
CNEL:	42	90	194	418

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: California Avenue to Berkeley Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,232 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,257 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.96	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.20	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.15	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.3	64.2	62.4	56.4	65.0	65.6	
Medium Trucks:	59.0	58.3	52.0	50.4	58.9	59.1	
Heavy Trucks:	59.9	59.3	50.2	51.5	59.8	60.0	
Vehicle Noise:	67.1	66.2	63.0	58.4	66.9	67.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	180	388
CNEL:	42	90	193	416



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Culver Drive to California Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,994 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,237 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.03	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.27	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.22	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.2	64.1	62.4	56.3	64.9	65.5	
Medium Trucks:	58.9	58.3	51.9	50.4	58.8	59.1	
Heavy Trucks:	59.8	59.2	50.2	51.4	59.8	59.9	
Vehicle Noise:	67.0	66.1	63.0	58.3	66.8	67.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	83	178	384
CNEL:	41	89	191	412

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Berkeley to Bridge Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,544 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,200 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.16	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.40	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.35	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.0	62.2	56.2	64.8	65.4
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9
Heavy Trucks:	59.7	59.1	50.0	51.3	59.6	59.8
Vehicle Noise:	66.9	66.0	62.8	58.2	66.7	67.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	175	376
CNEL:	40	87	187	404

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Warner Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,236 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,092 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.81	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.76	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.6	63.6	61.8	55.8	64.4	65.0	
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5	
Heavy Trucks:	59.2	58.7	49.6	50.9	59.2	59.4	
Vehicle Noise:	66.5	65.6	62.4	57.7	66.3	66.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	164	354
CNEL:	38	82	176	379

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Hicks Canyon Drive  
 Road Segment: Delamesa to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,210 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 182 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-8.25	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	75.75	-25.49	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	81.57	-29.45	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	55.8	54.7	52.9	46.9	55.5	56.1	
Medium Trucks:	50.0	49.3	42.9	41.4	49.9	50.1	
Heavy Trucks:	51.8	51.2	42.2	43.5	51.8	51.9	
Vehicle Noise:	58.0	57.1	53.7	49.3	57.8	58.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	36	77
CNEL:	8	18	38	82

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Hornet (5th St)  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,346 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	276 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-4.99	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-22.23	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-26.18	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.4	53.3	51.6	45.5	54.1	54.7
Medium Trucks:	49.2	48.5	42.2	40.6	49.1	49.3
Heavy Trucks:	52.4	51.8	42.8	44.1	52.4	52.5
Vehicle Noise:	57.3	56.4	52.5	48.6	57.1	57.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	11	24	52
CNEL:	6	12	26	55

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Hubble  
 Road Segment: Irvine Center Drive to Bunsen

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,322 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 192 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-6.58	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-23.81	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-27.77	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.8	51.7	50.0	43.9	52.5	53.1
Medium Trucks:	47.6	47.0	40.6	39.1	47.5	47.7
Heavy Trucks:	50.8	50.3	41.2	42.5	50.8	50.9
Vehicle Noise:	55.7	54.8	50.9	47.0	55.5	55.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	19	41
CNEL:	4	9	20	43

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: SR-133 NB Off- Ramp to Ridge Valley (O Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 41,249 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,403 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.50	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.74	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.70	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	69.3	67.5	61.5	70.1	70.7
Medium Trucks:	63.8	63.1	56.7	55.2	63.7	63.9
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9
Vehicle Noise:	72.0	71.0	68.1	63.2	71.8	72.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	237	510	1,100
CNEL:	118	255	549	1,183

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: SR-133 SB Off-Ramp to SR-133 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,804 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,366 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.45	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.79	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.75	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.3	67.5	61.4	70.1	70.7
Medium Trucks:	63.7	63.0	56.7	55.1	63.6	63.8
Heavy Trucks:	63.8	63.2	54.1	55.4	63.7	63.9
Vehicle Noise:	71.9	71.0	68.0	63.2	71.7	72.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	109	235	507	1,092
CNEL:	117	253	545	1,175



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Sand Canyon to SR-133 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,645 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,683 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.84	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.40	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.35	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	70.1	68.3	62.2	70.9	71.5
Medium Trucks:	64.5	63.9	57.5	55.9	64.4	64.6
Heavy Trucks:	64.6	64.0	54.9	56.2	64.5	64.7
Vehicle Noise:	72.7	71.8	68.8	64.0	72.5	73.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	118	253	546	1,176
CNEL:	127	273	587	1,265

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Merit to Alton

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,805 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,954 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.88	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.36	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.31	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.8	68.7	66.9	60.9	69.5	70.1	
Medium Trucks:	63.2	62.5	56.1	54.6	63.0	63.3	
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3	
Vehicle Noise:	71.3	70.4	67.5	62.6	71.1	71.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	465	1,001
CNEL:	108	232	500	1,077

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Journey to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,381 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,919 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.83	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.41	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.36	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.7	68.7	66.9	60.8	69.5	70.1	
Medium Trucks:	63.1	62.4	56.1	54.5	63.0	63.2	
Heavy Trucks:	63.1	62.5	53.5	54.8	63.1	63.2	
Vehicle Noise:	71.3	70.4	67.4	62.5	71.1	71.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	99	214	461	993
CNEL:	107	230	496	1,068

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Ridge Valley (O Street) to Bosque (LY Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,010 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,641 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.39	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.84	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.80	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.2	66.4	60.4	69.0	69.6
Medium Trucks:	62.7	62.0	55.6	54.1	62.5	62.8
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.9	69.9	67.0	62.1	70.7	71.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	200	431	929
CNEL:	100	215	464	999

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Pusan Way to Chinon (B Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,080 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,564 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.27	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.97	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.93	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.1	66.3	60.3	68.9	69.5
Medium Trucks:	62.5	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	62.6	62.0	52.9	54.2	62.6	62.7
Vehicle Noise:	70.7	69.8	66.8	62.0	70.5	71.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	196	423	911
CNEL:	98	211	455	980

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Palo Lado to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,776 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,704 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.50	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.74	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.70	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.4	68.3	66.6	60.5	69.1	69.7
Medium Trucks:	62.8	62.1	55.7	54.2	62.7	62.9
Heavy Trucks:	62.8	62.2	53.2	54.4	62.8	62.9
Vehicle Noise:	71.0	70.0	67.1	62.2	70.8	71.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	94	203	438	944
CNEL:	102	219	471	1,015

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Culver Drive to Palo Lado

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,471 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,679 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.46	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.78	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.74	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.3	66.5	60.5	69.1	69.7
Medium Trucks:	62.7	62.1	55.7	54.2	62.6	62.8
Heavy Trucks:	62.8	62.2	53.1	54.4	62.7	62.9
Vehicle Noise:	70.9	70.0	67.0	62.2	70.7	71.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	94	202	435	938
CNEL:	101	217	468	1,009

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: SR-261 SB Off-Ramp to SR-261 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,500 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,599 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.33	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.91	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.87	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.1	66.4	60.3	68.9	69.6
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	62.6	62.0	53.0	54.3	62.6	62.7
Vehicle Noise:	70.8	69.9	66.9	62.0	70.6	71.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	427	919
CNEL:	99	213	459	989



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Old Myford Road to Market Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,742 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,619 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.36	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.88	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.84	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.2	66.4	60.4	69.0	69.6
Medium Trucks:	62.6	62.0	55.6	54.1	62.5	62.7
Heavy Trucks:	62.7	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	70.8	69.9	66.9	62.1	70.6	71.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	199	429	924
CNEL:	99	214	461	994

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Bosque (LY Street) to Modjeska

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,088 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,647 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.41	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.83	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.79	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.3	68.2	66.5	60.4	69.0	69.6	
Medium Trucks:	62.7	62.0	55.6	54.1	62.6	62.8	
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8	
Vehicle Noise:	70.9	69.9	67.0	62.1	70.7	71.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	200	432	930
CNEL:	100	216	465	1,001

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Jamboree Road to Old Myford Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,090 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,565 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.27	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.97	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.93	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.1	66.3	60.3	68.9	69.5
Medium Trucks:	62.5	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	70.7	69.8	66.8	62.0	70.5	71.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	196	423	911
CNEL:	98	211	455	980

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Market Place to SR-261 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 30,908 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,550 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.24	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.00	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.95	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.1	68.1	66.3	60.2	68.9	69.5	
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6	
Heavy Trucks:	62.5	62.0	52.9	54.2	62.5	62.7	
Vehicle Noise:	70.7	69.8	66.8	61.9	70.5	71.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	195	421	907
CNEL:	98	210	453	976

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Jeffrey Road to Groveland

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,376 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,506 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.17	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.07	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.03	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.2	60.2	68.8	69.4
Medium Trucks:	62.4	61.8	55.4	53.9	62.3	62.6
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	70.6	69.7	66.7	61.9	70.4	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	193	416	897
CNEL:	96	208	448	965

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Bake Parkway to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,916 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,303 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.80	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.44	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.39	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.9	59.8	68.4	69.0
Medium Trucks:	62.1	61.4	55.0	53.5	62.0	62.2
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	70.3	69.3	66.4	61.5	70.1	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	183	394	848
CNEL:	91	196	423	912

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative Project Name: Irvine GP  
 Road Name: Irvine Boulevard Job Number: 15937  
 Road Segment: Independence Way (The Groves)/The Groves to Jeffrey Road

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,006 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,393 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos:	77.5%	12.9%	9.6%	97.42%
	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
	<b>Noise Source Elevations (in feet)</b>				
	Autos:	2.000			
	Medium Trucks:	4.000			
	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos:	74.458			
	Medium Trucks:	74.404			
	Heavy Trucks:	74.458			

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.97	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.27	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.23	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	62.2	61.6	55.2	53.7	62.1	62.4
Heavy Trucks:	62.3	61.7	52.6	53.9	62.3	62.4
Vehicle Noise:	70.4	69.5	66.5	61.7	70.2	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	187	404	870
CNEL:	94	202	434	936

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Chinon (B Street) to Merit

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,405 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,261 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.72	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.52	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.47	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	68.9
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.0	61.4	52.4	53.7	62.0	62.1
Vehicle Noise:	70.2	69.3	66.3	61.4	70.0	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	180	389	837
CNEL:	90	194	418	901



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: SR-261 NB Off-Ramp to Central Park

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,240 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,330 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.85	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.39	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.34	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.7	65.9	59.8	68.5	69.1
Medium Trucks:	62.1	61.5	55.1	53.5	62.0	62.2
Heavy Trucks:	62.2	61.6	52.5	53.8	62.1	62.3
Vehicle Noise:	70.3	69.4	66.4	61.6	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	184	397	854
CNEL:	92	198	427	919

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative Project Name: Irvine GP  
 Road Name: Irvine Boulevard Job Number: 15937  
 Road Segment: Pueblo Norte to Independence Way (The Groves)/ Parkwood

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,469 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,266 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.73	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.51	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.46	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.6	65.8	59.7	68.4	69.0
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.0	61.4	52.4	53.7	62.0	62.1
Vehicle Noise:	70.2	69.3	66.3	61.4	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	389	839
CNEL:	90	194	419	902

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Yale Avenue to Pueblo Norte

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,285 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,251 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.70	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.54	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.49	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.6	67.5	65.8	59.7	68.3	68.9	
Medium Trucks:	62.0	61.3	54.9	53.4	61.9	62.1	
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1	
Vehicle Noise:	70.2	69.2	66.3	61.4	70.0	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	180	388	835
CNEL:	90	194	417	898

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Modjeska to Pusan Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,040 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,148 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.50	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.74	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.70	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	61.8	61.1	54.7	53.2	61.7	61.9
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	70.0	69.0	66.1	61.2	69.8	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	376	809
CNEL:	87	188	404	871

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Central Park Avenue to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,480 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,020 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.23	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.01	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.96	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.1	67.1	65.3	59.2	67.9	68.5	
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6	
Heavy Trucks:	61.5	60.9	51.9	53.2	61.5	61.6	
Vehicle Noise:	69.7	68.8	65.8	60.9	69.5	70.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	167	361	777
CNEL:	84	180	388	836

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Parker to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,659 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,869 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.11	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.34	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.30	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	66.7	64.9	58.9	67.5	68.1	
Medium Trucks:	61.2	60.5	54.1	52.6	61.0	61.3	
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3	
Vehicle Noise:	69.4	68.4	65.5	60.6	69.2	69.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	342	738
CNEL:	79	171	368	794

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Alton Parkway to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,955 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,481 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-18.35	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-22.31	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.2	59.5	53.1	51.6	60.0	60.3
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3
Vehicle Noise:	68.3	67.4	64.5	59.6	68.1	68.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	293	632
CNEL:	68	146	315	680

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative Project Name: Irvine GP  
 Road Name: Irvine Center Drive Job Number: 15937  
 Road Segment: Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 52,889 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,363 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float:right">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.99	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.25	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.20	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.6	67.9	61.8	70.4	71.0
Medium Trucks:	64.3	63.6	57.2	55.7	64.2	64.4
Heavy Trucks:	64.7	64.1	55.1	56.3	64.7	64.8
Vehicle Noise:	72.4	71.5	68.4	63.7	72.2	72.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	112	242	521	1,122
CNEL:	121	260	560	1,205



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Orange Tree to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 49,786 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,107 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.73	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.51	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.47	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.0	69.0	67.2	61.1	69.8	70.4	
Medium Trucks:	63.6	62.9	56.6	55.0	63.5	63.7	
Heavy Trucks:	64.0	63.4	54.4	55.6	64.0	64.1	
Vehicle Noise:	71.7	70.8	67.8	63.0	71.5	72.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	229	493	1,062
CNEL:	114	246	530	1,141

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: I-405 SB Off-Ramp to Research

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 47,340 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,906 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.51	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.73	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.69	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.2	69.2	67.4	61.3	70.0	70.6	
Medium Trucks:	63.8	63.1	56.8	55.2	63.7	63.9	
Heavy Trucks:	64.2	63.6	54.6	55.8	64.2	64.3	
Vehicle Noise:	71.9	71.0	68.0	63.2	71.7	72.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	104	224	484	1,042
CNEL:	112	241	520	1,120

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Irvine Valley College to Orange Tree

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 48,817 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,027 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.64	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.60	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.55	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	68.9	67.1	61.1	69.7	70.3
Medium Trucks:	63.5	62.8	56.5	54.9	63.4	63.6
Heavy Trucks:	63.9	63.3	54.3	55.6	63.9	64.0
Vehicle Noise:	71.6	70.7	67.7	62.9	71.4	71.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	105	226	487	1,049
CNEL:	113	243	523	1,127

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Fontaine Avenue to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 46,104 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,804 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.39	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.84	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.80	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.7	68.6	66.9	60.8	69.4	70.0	
Medium Trucks:	63.3	62.6	56.2	54.7	63.1	63.4	
Heavy Trucks:	63.7	63.1	54.1	55.3	63.7	63.8	
Vehicle Noise:	71.4	70.5	67.4	62.6	71.2	71.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	217	469	1,009
CNEL:	108	234	503	1,084

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Culver Drive to Deerwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,624 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,764 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.35	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.89	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.85	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.8	60.8	69.4	70.0
Medium Trucks:	63.2	62.5	56.2	54.6	63.1	63.3
Heavy Trucks:	63.6	63.0	54.0	55.3	63.6	63.7
Vehicle Noise:	71.3	70.4	67.4	62.6	71.2	71.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	465	1,002
CNEL:	108	232	500	1,077

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Deerwood to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,180 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,727 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.31	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.93	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.89	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.8	60.7	69.3	70.0
Medium Trucks:	63.2	62.5	56.1	54.6	63.1	63.3
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7
Vehicle Noise:	71.3	70.4	67.3	62.6	71.1	71.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	215	462	996
CNEL:	107	231	497	1,070

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Yale Avenue to Fontaine Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,578 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,760 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.34	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.89	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.85	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.7	68.6	66.8	60.8	69.4	70.0	
Medium Trucks:	63.2	62.5	56.2	54.6	63.1	63.3	
Heavy Trucks:	63.6	63.0	54.0	55.3	63.6	63.7	
Vehicle Noise:	71.3	70.4	67.4	62.6	71.1	71.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	465	1,002
CNEL:	108	232	500	1,076

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Jeffrey Road to Irvine Valley College

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,489 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,670 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.24	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.00	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.96	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.5	68.5	66.7	60.7	69.3	69.9	
Medium Trucks:	63.1	62.4	56.1	54.5	63.0	63.2	
Heavy Trucks:	63.5	62.9	53.9	55.2	63.5	63.6	
Vehicle Noise:	71.2	70.3	67.3	62.5	71.0	71.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	99	212	458	986
CNEL:	106	228	492	1,059



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Alton Parkway to Spectrum

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 42,406 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,499 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.21	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.16	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.3	68.3	66.5	60.5	69.1	69.7	
Medium Trucks:	62.9	62.2	55.9	54.3	62.8	63.0	
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4	
Vehicle Noise:	71.0	70.1	67.1	62.3	70.8	71.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	95	206	443	955
CNEL:	103	221	476	1,026

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Spectrum to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 41,920 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,458 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.98	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.26	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.21	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.3	68.2	66.5	60.4	69.0	69.6	
Medium Trucks:	62.8	62.2	55.8	54.3	62.7	63.0	
Heavy Trucks:	63.3	62.7	53.6	54.9	63.2	63.4	
Vehicle Noise:	71.0	70.1	67.0	62.2	70.8	71.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	95	204	440	947
CNEL:	102	219	472	1,018

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Hearthstone to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,524 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,261 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.72	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.51	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.47	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	68.0	66.2	60.1	68.8	69.4
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	70.7	69.8	66.8	62.0	70.5	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	196	423	911
CNEL:	98	211	454	979

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Charter to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 38,843 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,205 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.65	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.59	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.55	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	67.9	66.1	60.1	68.7	69.3
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6
Heavy Trucks:	62.9	62.3	53.3	54.6	62.9	63.0
Vehicle Noise:	70.6	69.7	66.7	61.9	70.5	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	194	418	900
CNEL:	97	208	449	967

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Jamboree Road to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 35,809 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,954 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.30	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.94	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.90	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	68.9
Medium Trucks:	62.2	61.5	55.1	53.6	62.0	62.3
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	70.3	69.4	66.3	61.6	70.1	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	184	396	853
CNEL:	92	197	425	916

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Pacifica to Entertainment (Enterprise/Fortune)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,722 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,030 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.41	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.83	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.79	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.9	59.8	68.4	69.1
Medium Trucks:	62.3	61.6	55.2	53.7	62.2	62.4
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.4	69.5	66.4	61.7	70.2	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	187	403	867
CNEL:	93	201	433	932

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,773 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,034 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.41	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.83	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.78	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.7	65.9	59.8	68.5	69.1
Medium Trucks:	62.3	61.6	55.2	53.7	62.2	62.4
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.4	69.5	66.5	61.7	70.2	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	187	403	868
CNEL:	93	201	433	933

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Harvard Avenue to Hearthstone

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,946 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,801 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.06	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.17	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.13	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.0
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5
Vehicle Noise:	70.1	69.1	66.1	61.3	69.9	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	382	823
CNEL:	88	191	410	884



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Research to Hubble

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,767 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,456 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.49	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.74	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.70	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	65.0	58.9	67.5	68.1
Medium Trucks:	61.4	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	69.5	68.6	65.5	60.7	69.3	69.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	350	754
CNEL:	81	175	376	810

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Barranca Parkway to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,213 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,658 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.84	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.40	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.36	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.1	65.3	59.3	67.9	68.5
Medium Trucks:	61.7	61.0	54.7	53.1	61.6	61.8
Heavy Trucks:	62.1	61.5	52.5	53.8	62.1	62.2
Vehicle Noise:	69.8	68.9	65.9	61.1	69.6	70.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	171	369	795
CNEL:	85	184	396	854

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Bake Parkway to Muller

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,382 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,424 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.44	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.80	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.76	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.7	66.7	64.9	58.9	67.5	68.1	
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4	
Heavy Trucks:	61.7	61.1	52.1	53.4	61.7	61.8	
Vehicle Noise:	69.4	68.5	65.5	60.7	69.2	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	347	748
CNEL:	80	173	373	803

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Discovery to Charter

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,850 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,710 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.92	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.32	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.27	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	67.2	65.4	59.3	68.0	68.6	
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9	
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3	
Vehicle Noise:	69.9	69.0	66.0	61.2	69.7	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	173	374	805
CNEL:	87	186	402	865

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Hubble to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,974 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,308 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.22	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.01	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.97	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.5	66.5	64.7	58.6	67.3	67.9	
Medium Trucks:	61.1	60.4	54.1	52.5	61.0	61.2	
Heavy Trucks:	61.5	60.9	51.9	53.1	61.5	61.6	
Vehicle Noise:	69.2	68.3	65.3	60.5	69.0	69.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	72	156	336	723
CNEL:	78	167	361	777

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Muller to Tesla

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,678 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,201 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.02	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.22	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.18	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.3	64.5	58.4	67.1	67.7
Medium Trucks:	60.9	60.2	53.9	52.3	60.8	61.0
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4
Vehicle Noise:	69.0	68.1	65.1	60.3	68.8	69.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	151	325	701
CNEL:	75	162	350	753

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Sand Canyon Avenue to Odyssey

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,285 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,251 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.12	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.08	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.4	66.4	64.6	58.5	67.2	67.8	
Medium Trucks:	61.0	60.3	54.0	52.4	60.9	61.1	
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5	
Vehicle Noise:	69.1	68.2	65.2	60.4	68.9	69.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	153	330	712
CNEL:	76	165	355	764

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Tesla to Scientific Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,358 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,010 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.62	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.62	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.57	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.9	65.9	64.1	58.0	66.7	67.3
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	60.9	60.3	51.3	52.5	60.9	61.0
Vehicle Noise:	68.6	67.7	64.7	59.9	68.4	68.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	142	306	660
CNEL:	71	153	329	709



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Scientific Way to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,241 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,917 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
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Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.42	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.82	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.78	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.7	65.7	63.9	57.8	66.5	67.1	
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4	
Heavy Trucks:	60.7	60.1	51.1	52.3	60.7	60.8	
Vehicle Noise:	68.4	67.5	64.5	59.7	68.2	68.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	138	297	639
CNEL:	69	148	319	687

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Gateway Boulevard to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,879 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,970 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.54	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.70	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.66	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.8	64.0	58.0	66.6	67.2
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5
Heavy Trucks:	60.8	60.2	51.2	52.4	60.8	60.9
Vehicle Noise:	68.5	67.6	64.6	59.8	68.3	68.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	140	302	651
CNEL:	70	151	325	699

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Laguna Canyon Road to Discovery

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,024 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,982 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.56	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.68	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.63	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.9	65.8	64.0	58.0	66.6	67.2	
Medium Trucks:	60.4	59.8	53.4	51.9	60.3	60.5	
Heavy Trucks:	60.8	60.3	51.2	52.5	60.8	61.0	
Vehicle Noise:	68.6	67.6	64.6	59.8	68.4	68.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	141	303	654
CNEL:	70	151	326	702

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Odyssey to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,977 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,978 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.55	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.68	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.64	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.9	65.8	64.0	58.0	66.6	67.2	
Medium Trucks:	60.4	59.8	53.4	51.8	60.3	60.5	
Heavy Trucks:	60.8	60.3	51.2	52.5	60.8	60.9	
Vehicle Noise:	68.6	67.6	64.6	59.8	68.4	68.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	141	303	653
CNEL:	70	151	326	701

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Irvine Center Drive (Edinger)  
 Road Segment: Redhill Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,543 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,262 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.73	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.51	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.47	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	68.0	66.2	60.1	68.8	69.4
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	70.7	69.8	66.8	62.0	70.5	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	196	423	911
CNEL:	98	211	454	979

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: I-5 SB Off-Ramp to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 69,825 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,761 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.78	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-12.46	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-16.41	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.7	71.6	69.8	63.8	72.4	73.0	
Medium Trucks:	66.1	65.4	59.0	57.5	65.9	66.2	
Heavy Trucks:	66.1	65.5	56.5	57.7	66.1	66.2	
Vehicle Noise:	74.2	73.3	70.4	65.5	74.0	74.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	156	337	725	1,562
CNEL:	168	362	780	1,681

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 81,976 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 6,763 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.48	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-11.76	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-15.72	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.8	72.7	70.9	64.9	73.5	74.1
Medium Trucks:	67.2	66.5	60.1	58.6	67.0	67.3
Heavy Trucks:	67.2	66.6	57.6	58.8	67.2	67.3
Vehicle Noise:	75.4	74.4	71.5	66.6	75.1	75.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	176	380	818	1,763
CNEL:	190	409	881	1,897

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Walnut Avenue to Michelle Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 60,442 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,986 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.16	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.08	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.04	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.0	71.0	69.2	63.2	71.8	72.4	
Medium Trucks:	65.4	64.8	58.4	56.8	65.3	65.5	
Heavy Trucks:	65.5	64.9	55.8	57.1	65.4	65.6	
Vehicle Noise:	73.6	72.7	69.7	64.9	73.4	73.9	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	142	306	659	1,419
CNEL:	153	329	709	1,526



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: I-405 NB Off-Ramp to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 81,891 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 6,756 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.47	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-11.76	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-15.72	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	75.1	74.1	72.3	66.3	74.9	75.5	
Medium Trucks:	68.5	67.9	61.5	60.0	68.4	68.7	
Heavy Trucks:	68.6	68.0	58.9	60.2	68.5	68.7	
Vehicle Noise:	76.7	75.8	72.8	68.0	76.5	77.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	272	586	1,263	2,721
CNEL:	293	631	1,359	2,928

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Michelle Drive to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 56,408 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,654 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.86	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.38	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.34	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.7	70.7	68.9	62.9	71.5	72.1
Medium Trucks:	65.1	64.5	58.1	56.5	65.0	65.2
Heavy Trucks:	65.2	64.6	55.5	56.8	65.1	65.3
Vehicle Noise:	73.3	72.4	69.4	64.6	73.1	73.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	136	292	629	1,355
CNEL:	146	314	677	1,458

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Main Street to Kelvin Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 70,975 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,855 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.85	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.39	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.34	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	74.5	73.5	71.7	65.6	74.3	74.9	
Medium Trucks:	67.9	67.2	60.9	59.3	67.8	68.0	
Heavy Trucks:	67.9	67.4	58.3	59.6	67.9	68.1	
Vehicle Noise:	76.1	75.2	72.2	67.3	75.9	76.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	247	533	1,148	2,474
CNEL:	266	573	1,235	2,661

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 88,495 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 7,301 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 130 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 88.792 Medium Trucks: 88.747 Heavy Trucks: 88.792																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.81	-3.84	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-11.43	-3.84	-1.20	-4.96	0.000	0.000
Heavy Trucks:	86.40	-15.38	-3.84	-1.20	-5.14	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.5	71.5	69.7	63.7	72.3	72.9	
Medium Trucks:	65.9	65.3	58.9	57.4	65.8	66.1	
Heavy Trucks:	66.0	65.4	56.3	57.6	66.0	66.1	
Vehicle Noise:	74.1	73.2	70.2	65.4	73.9	74.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	201	433	932	2,009
CNEL:	216	466	1,003	2,161

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Kelvin Avenue to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 65,776 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,426 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.52	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.72	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.67	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.2	73.1	71.4	65.3	73.9	74.5
Medium Trucks:	67.6	66.9	60.6	59.0	67.5	67.7
Heavy Trucks:	67.6	67.0	58.0	59.2	67.6	67.7
Vehicle Noise:	75.8	74.8	71.9	67.0	75.6	76.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	235	507	1,091	2,351
CNEL:	253	545	1,174	2,530

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 64,955 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,359 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.47	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.77	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.73	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.1	73.1	71.3	65.3	73.9	74.5
Medium Trucks:	67.5	66.9	60.5	59.0	67.4	67.6
Heavy Trucks:	67.6	67.0	57.9	59.2	67.5	67.7
Vehicle Noise:	75.7	74.8	71.8	67.0	75.5	76.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	233	502	1,082	2,332
CNEL:	251	540	1,164	2,509

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Birch Street to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 49,612 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,093 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.30	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.94	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.90	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.2	70.1	68.4	62.3	70.9	71.5
Medium Trucks:	64.6	63.9	57.5	56.0	64.5	64.7
Heavy Trucks:	64.6	64.0	55.0	56.2	64.6	64.7
Vehicle Noise:	72.8	71.8	68.9	64.0	72.6	73.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	124	268	577	1,244
CNEL:	134	288	621	1,338

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Dupont Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 55,614 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,588 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.79	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.44	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.40	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.1	71.0	69.3	63.2	71.8	72.4	
Medium Trucks:	65.5	64.8	58.4	56.9	65.4	65.6	
Heavy Trucks:	65.5	64.9	55.9	57.1	65.5	65.6	
Vehicle Noise:	73.7	72.7	69.8	64.9	73.5	73.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	136	293	632	1,361
CNEL:	146	316	680	1,465



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Alton Parkway to Beckman

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 59,192 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,883 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.06	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.17	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.13	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.7	72.7	70.9	64.9	73.5	74.1
Medium Trucks:	67.1	66.5	60.1	58.5	67.0	67.2
Heavy Trucks:	67.2	66.6	57.5	58.8	67.1	67.3
Vehicle Noise:	75.3	74.4	71.4	66.6	75.1	75.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	219	472	1,017	2,192
CNEL:	236	508	1,094	2,358

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Fairchild Road to Birch Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 50,815 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,192 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.40	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.84	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.79	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.7	70.6	68.9	62.8	71.4	72.0	
Medium Trucks:	65.1	64.4	58.1	56.5	65.0	65.2	
Heavy Trucks:	65.1	64.5	55.5	56.7	65.1	65.2	
Vehicle Noise:	73.3	72.3	69.4	64.5	73.1	73.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	128	276	595	1,282
CNEL:	138	297	640	1,379

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Beckman to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 54,823 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,523 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.73	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.51	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.46	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.4	72.3	70.6	64.5	73.1	73.7
Medium Trucks:	66.8	66.1	59.8	58.2	66.7	66.9
Heavy Trucks:	66.8	66.2	57.2	58.5	66.8	66.9
Vehicle Noise:	75.0	74.1	71.1	66.2	74.8	75.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	208	449	967	2,083
CNEL:	224	483	1,040	2,240

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: I-5 NB Off-Ramp to El Camino Real

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 52,710 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,349 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 56.593				
Road Grade: 0.0%	Medium Trucks: 56.522				
Left View: -90.0 degrees	Heavy Trucks: 56.593				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.56	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.68	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.63	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.2	72.2	70.4	64.3	73.0	73.6	
Medium Trucks:	66.6	66.0	59.6	58.0	66.5	66.7	
Heavy Trucks:	66.7	66.1	57.0	58.3	66.6	66.8	
Vehicle Noise:	74.8	73.9	70.9	66.1	74.6	75.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	203	437	942	2,029
CNEL:	218	470	1,013	2,182

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Campus Drive to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 46,420 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,830 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.01	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.23	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.19	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.3	70.2	68.5	62.4	71.0	71.6	
Medium Trucks:	64.7	64.0	57.7	56.1	64.6	64.8	
Heavy Trucks:	64.7	64.1	55.1	56.4	64.7	64.8	
Vehicle Noise:	72.9	72.0	69.0	64.1	72.7	73.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	260	560	1,207
CNEL:	130	280	603	1,298

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: El Camino Real to West Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 51,138 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,219 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.43	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.81	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.76	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.1	72.0	70.3	64.2	72.8	73.4
Medium Trucks:	66.5	65.8	59.5	57.9	66.4	66.6
Heavy Trucks:	66.5	65.9	56.9	58.1	66.5	66.6
Vehicle Noise:	74.7	73.8	70.8	65.9	74.5	75.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	199	428	923	1,988
CNEL:	214	461	993	2,139

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: West Drive to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 51,091 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,215 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.43	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.81	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.77	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.1	72.0	70.3	64.2	72.8	73.4	
Medium Trucks:	66.5	65.8	59.5	57.9	66.4	66.6	
Heavy Trucks:	66.5	65.9	56.9	58.1	66.5	66.6	
Vehicle Noise:	74.7	73.7	70.8	65.9	74.5	74.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	199	428	922	1,987
CNEL:	214	461	992	2,138

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Bryan Avenue to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,458 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,915 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.11	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-14.13	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-18.09	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.8	71.7	69.9	63.9	72.5	73.1
Medium Trucks:	66.2	65.5	59.1	57.6	66.1	66.3
Heavy Trucks:	66.2	65.6	56.6	57.8	66.2	66.3
Vehicle Noise:	74.4	73.4	70.5	65.6	74.2	74.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	189	408	878	1,892
CNEL:	204	438	945	2,035



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Koll Center to Fairchild Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 43,123 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,558 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.69	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.55	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.51	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.0	69.9	68.2	62.1	70.7	71.3
Medium Trucks:	64.4	63.7	57.3	55.8	64.3	64.5
Heavy Trucks:	64.4	63.8	54.8	56.0	64.4	64.5
Vehicle Noise:	72.6	71.6	68.7	63.8	72.4	72.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	248	533	1,149
CNEL:	124	266	574	1,236

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: MacArthur Boulevard to Koll Center

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 42,776 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,529 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.65	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.58	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.54	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.9	69.9	68.1	62.1	70.7	71.3
Medium Trucks:	64.3	63.7	57.3	55.8	64.2	64.5
Heavy Trucks:	64.4	63.8	54.7	56.0	64.4	64.5
Vehicle Noise:	72.5	71.6	68.6	63.8	72.3	72.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	246	530	1,143
CNEL:	123	265	571	1,230

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Irvine Boulevard to Portola Pakway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,015 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,394 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.97	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.27	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.23	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.9	67.8	66.0	60.0	68.6	69.2	
Medium Trucks:	62.2	61.6	55.2	53.7	62.1	62.4	
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4	
Vehicle Noise:	70.4	69.5	66.5	61.7	70.2	70.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	187	404	870
CNEL:	94	202	434	936

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Warner Avenue to Edinger Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 87,509 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 7,219 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 96 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.438 Medium Trucks: 42.344 Heavy Trucks: 42.439																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.76	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-11.48	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-15.43	0.96	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	77.3	76.2	74.5	68.4	77.0	77.7	
Medium Trucks:	70.7	70.0	63.7	62.1	70.6	70.8	
Heavy Trucks:	70.7	70.1	61.1	62.4	70.7	70.8	
Vehicle Noise:	78.9	78.0	75.0	70.1	78.7	79.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	243	523	1,127	2,428
CNEL:	261	563	1,212	2,612

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 72,128 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,951 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 96 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 64.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 64.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 42.438				
Road Grade: 0.0%	Medium Trucks: 42.344				
Left View: -90.0 degrees	Heavy Trucks: 42.439				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.92	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-12.32	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-16.27	0.96	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	76.5	75.4	73.6	67.6	76.2	76.8	
Medium Trucks:	69.9	69.2	62.8	61.3	69.7	70.0	
Heavy Trucks:	69.9	69.3	60.3	61.5	69.9	70.0	
Vehicle Noise:	78.0	77.1	74.2	69.3	77.8	78.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	213	460	991	2,134
CNEL:	230	495	1,066	2,296

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jamboree Road  
 Road Segment: Edinger Avenue to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 66,499 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,486 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 96 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 64.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 64.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 42.438				
Road Grade: 0.0%	Medium Trucks: 42.344				
Left View: -90.0 degrees	Heavy Trucks: 42.439				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.57	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-12.67	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-16.62	0.96	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	76.1	75.1	73.3	67.2	75.9	76.5	
Medium Trucks:	69.5	68.8	62.5	60.9	69.4	69.6	
Heavy Trucks:	69.5	69.0	59.9	61.2	69.5	69.6	
Vehicle Noise:	77.7	76.8	73.8	68.9	77.5	78.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	202	436	938	2,022
CNEL:	218	469	1,010	2,175

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Walnut Avenue to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 56,523 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,663 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.74	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.50	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.46	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.2	66.5	60.4	69.0	69.6
Medium Trucks:	63.1	62.4	56.0	54.5	62.9	63.2
Heavy Trucks:	63.9	63.3	54.3	55.5	63.9	64.0
Vehicle Noise:	71.1	70.2	67.1	62.4	70.9	71.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	209	450	971
CNEL:	104	224	483	1,041

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jeffrey Road  
 Road Segment: I-5 NB Off-Ramp to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 63,296 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,222 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	5.23	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.01	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-15.97	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.2	69.1	67.4	61.3	69.9	70.5	
Medium Trucks:	64.0	63.3	56.9	55.4	63.8	64.1	
Heavy Trucks:	64.8	64.2	55.2	56.4	64.8	64.9	
Vehicle Noise:	72.0	71.1	68.0	63.3	71.8	72.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	229	493	1,062
CNEL:	114	245	529	1,139



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Poplar (Meadows) to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 50,868 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,197 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.28	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.96	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.92	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	63.4	62.9	53.8	55.1	63.4	63.5
Vehicle Noise:	70.7	69.8	66.6	61.9	70.5	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	195	420	905
CNEL:	97	209	450	970

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 50,717 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,184 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.27	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.97	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.93	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.8	66.0	59.9	68.6	69.2
Medium Trucks:	62.6	61.9	55.5	54.0	62.5	62.7
Heavy Trucks:	63.4	62.8	53.8	55.1	63.4	63.5
Vehicle Noise:	70.7	69.8	66.6	61.9	70.5	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	195	419	903
CNEL:	97	209	450	969

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Center Drive to Poplar (Meadows)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 48,682 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,016 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.09	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.15	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.11	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.8	59.8	68.4	69.0	
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5	
Heavy Trucks:	63.2	62.7	53.6	54.9	63.2	63.4	
Vehicle Noise:	70.5	69.6	66.4	61.8	70.3	70.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	189	408	879
CNEL:	94	203	437	942

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Jeffrey Road  
 Road Segment: I-405 NB Off-Ramp to Quail Creek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 50,815 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,192 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.27	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.96	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.92	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	63.4	62.8	53.8	55.1	63.4	63.5
Vehicle Noise:	70.7	69.8	66.6	61.9	70.5	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	195	420	904
CNEL:	97	209	450	970

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Barranca Parkway to Irvine Valley College

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 48,023 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,962 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.21	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.17	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	68.9
Medium Trucks:	62.3	61.7	55.3	53.8	62.2	62.5
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3
Vehicle Noise:	70.4	69.5	66.4	61.7	70.2	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	188	404	871
CNEL:	93	201	434	934

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Quail Creek to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 48,969 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,040 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.11	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.13	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.08	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.4	61.8	55.4	53.9	62.3	62.5
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4
Vehicle Noise:	70.5	69.6	66.5	61.8	70.3	70.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	190	409	882
CNEL:	95	204	439	946

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Valley College to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,528 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,756 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.80	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.44	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.40	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2
Heavy Trucks:	63.0	62.4	53.3	54.6	62.9	63.1
Vehicle Noise:	70.2	69.3	66.1	61.5	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	390	840
CNEL:	90	194	418	901

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Trabuco Road to Hideaway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,721 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,112 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.98	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.26	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.21	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.5	64.7	58.7	67.3	67.9
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4
Heavy Trucks:	62.1	61.6	52.5	53.8	62.1	62.2
Vehicle Noise:	69.4	68.5	65.3	60.6	69.2	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	344	741
CNEL:	80	171	369	795



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Hideaway to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,668 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,108 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.97	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.27	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.22	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.5	66.5	64.7	58.7	67.3	67.9	
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4	
Heavy Trucks:	62.1	61.5	52.5	53.8	62.1	62.2	
Vehicle Noise:	69.4	68.5	65.3	60.6	69.2	69.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	344	740
CNEL:	79	171	369	794

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Roosevelt to Grove

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 41,046 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,386 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.35	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.89	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.85	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.3	65.5	59.4	68.1	68.7	
Medium Trucks:	62.1	61.4	55.0	53.5	62.0	62.2	
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0	
Vehicle Noise:	70.2	69.2	66.1	61.4	70.0	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	171	369	795
CNEL:	85	184	396	853

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Grove to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 38,896 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,209 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.11	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.13	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.08	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.3	59.2	67.8	68.4
Medium Trucks:	61.8	61.2	54.8	53.3	61.7	62.0
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	69.9	69.0	65.9	61.2	69.7	70.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	356	767
CNEL:	82	177	382	823

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Bryan Avenue to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,845 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,380 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.81	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.42	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.38	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	60.1	59.5	53.1	51.6	60.0	60.2
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1
Vehicle Noise:	68.2	67.3	64.2	59.5	68.0	68.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	134	288	620
CNEL:	66	143	309	665

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Encore to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,420 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,272 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.91	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-18.14	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-22.10	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.7	62.6	60.8	54.8	63.4	64.0
Medium Trucks:	57.4	56.7	50.4	48.8	57.3	57.5
Heavy Trucks:	58.3	57.7	48.6	49.9	58.2	58.4
Vehicle Noise:	65.5	64.6	61.4	56.8	65.3	65.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	88	189	408
CNEL:	44	94	203	438

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Boulevard to Encore

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,436 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,191 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.19	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-18.43	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-22.39	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.4	62.3	60.5	54.5	63.1	63.7
Medium Trucks:	57.1	56.5	50.1	48.5	57.0	57.2
Heavy Trucks:	58.0	57.4	48.3	49.6	58.0	58.1
Vehicle Noise:	65.2	64.3	61.2	56.5	65.0	65.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	181	391
CNEL:	42	90	195	419

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Jeronimo Road  
 Road Segment: Goodyear to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,085 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	667 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.71	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.90	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.5	61.4	59.7	53.6	62.2	62.8
Medium Trucks:	56.3	55.6	49.2	47.7	56.1	56.4
Heavy Trucks:	57.1	56.5	47.5	48.7	57.1	57.2
Vehicle Noise:	64.3	63.4	60.3	55.6	64.1	64.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	55	118	255
CNEL:	27	59	127	273

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Jeronimo Road  
 Road Segment: Alton Parkway to Goodyear

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,560 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 624 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.20	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.2	61.1	59.4	53.3	62.0	62.6
Medium Trucks:	56.0	55.3	48.9	47.4	55.9	56.1
Heavy Trucks:	56.8	56.2	47.2	48.4	56.8	56.9
Vehicle Noise:	64.0	63.1	60.0	55.3	63.9	64.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	113	243
CNEL:	26	56	121	261



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Old Laguna Canyon Road to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 52,519 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,333 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.55	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.69	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.65	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.4	70.4	68.6	62.5	71.2	71.8
Medium Trucks:	64.8	64.1	57.8	56.2	64.7	64.9
Heavy Trucks:	64.8	64.3	55.2	56.5	64.8	65.0
Vehicle Noise:	73.0	72.1	69.1	64.3	72.8	73.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	129	278	600	1,292
CNEL:	139	299	645	1,390

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Laguna Canyon Freeway to Quail Hill Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,624 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,372 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.45	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.69	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.64	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.3	59.2	67.8	68.4
Medium Trucks:	61.5	60.8	54.4	52.9	61.4	61.6
Heavy Trucks:	61.5	60.9	51.9	53.1	61.5	61.6
Vehicle Noise:	69.7	68.7	65.8	60.9	69.5	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	124	267	575
CNEL:	62	133	287	619

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Discovery to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,112 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,247 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.86	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.06	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.7	66.6	64.8	58.8	67.4	68.0	
Medium Trucks:	61.1	60.4	54.0	52.5	60.9	61.2	
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2	
Vehicle Noise:	69.2	68.3	65.4	60.5	69.0	69.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	251	540
CNEL:	58	125	270	581

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: I-405 Overcrossing to Pasteur

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,544 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 705 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.93	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-21.17	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.12	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.0	64.9	63.2	57.1	65.7	66.3	
Medium Trucks:	59.6	58.9	52.5	51.0	59.4	59.7	
Heavy Trucks:	60.0	59.4	50.3	51.6	59.9	60.1	
Vehicle Noise:	67.7	66.8	63.7	58.9	67.5	67.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	73	158	340
CNEL:	36	79	169	365

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Irvine Center Drive to Discovery

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,381 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,104 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.39	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.63	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.59	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.1	64.3	58.3	66.9	67.5
Medium Trucks:	60.5	59.9	53.5	52.0	60.4	60.6
Heavy Trucks:	60.6	60.0	50.9	52.2	60.5	60.7
Vehicle Noise:	68.7	67.8	64.8	60.0	68.5	69.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	107	231	498
CNEL:	54	115	249	536

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Quail Hill Parkway to I-405 Overcrossing

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 8,544 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 705 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 42.814				
Road Grade: 0.0%	Medium Trucks: 42.720				
Left View: -90.0 degrees	Heavy Trucks: 42.814				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.93	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-21.17	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.12	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.2	57.1	65.7	66.3
Medium Trucks:	59.6	58.9	52.5	51.0	59.4	59.7
Heavy Trucks:	60.0	59.4	50.3	51.6	59.9	60.1
Vehicle Noise:	67.7	66.8	63.7	58.9	67.5	67.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	73	158	340
CNEL:	36	79	169	365

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Pasteur to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,491 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 701 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-4.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-21.61	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-25.56	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.1	62.3	56.3	64.9	65.5
Medium Trucks:	58.6	57.9	51.5	50.0	58.4	58.7
Heavy Trucks:	58.6	58.0	49.0	50.2	58.6	58.7
Vehicle Noise:	66.7	65.8	62.9	58.0	66.5	67.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	171	368
CNEL:	40	85	184	396

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Waterworks to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,487 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 783 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-3.89	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-21.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-25.08	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.6	64.6	62.8	56.8	65.4	66.0	
Medium Trucks:	59.0	58.4	52.0	50.5	58.9	59.2	
Heavy Trucks:	59.1	58.5	49.4	50.7	59.1	59.2	
Vehicle Noise:	67.2	66.3	63.3	58.5	67.0	67.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	85	184	396
CNEL:	43	92	198	426



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,272 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 600 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-5.04	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-22.28	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-26.24	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.5	63.4	61.7	55.6	64.2	64.8	
Medium Trucks:	57.9	57.2	50.9	49.3	57.8	58.0	
Heavy Trucks:	57.9	57.3	48.3	49.5	57.9	58.0	
Vehicle Noise:	66.1	65.1	62.2	57.3	65.9	66.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	154	332
CNEL:	36	77	166	357

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Barranca Parkway to Waterworks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,040 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 581 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-5.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-22.42	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-26.38	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.4	63.3	61.5	55.5	64.1	64.7	
Medium Trucks:	57.7	57.1	50.7	49.2	57.6	57.9	
Heavy Trucks:	57.8	57.2	48.2	49.4	57.8	57.9	
Vehicle Noise:	65.9	65.0	62.0	57.2	65.7	66.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	70	151	324
CNEL:	35	75	162	349

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Lake Forest Drive  
 Road Segment: Hidden Canyon to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 18,642 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,538 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.78	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.73	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.4	66.4	64.6	58.5	67.2	67.8	
Medium Trucks:	61.0	60.3	54.0	52.4	60.9	61.1	
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5	
Vehicle Noise:	69.1	68.2	65.2	60.4	68.9	69.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	246	529
CNEL:	57	122	264	569

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Lake Forest Drive  
 Road Segment: Bake Parkway to Hidden Canyon (Romano)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 18,471 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,524 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.58	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.82	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.77	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.4	66.3	64.5	58.5	67.1	67.7	
Medium Trucks:	60.9	60.3	53.9	52.4	60.8	61.1	
Heavy Trucks:	61.4	60.8	51.7	53.0	61.3	61.5	
Vehicle Noise:	69.1	68.2	65.1	60.3	68.9	69.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	113	244	526
CNEL:	57	122	262	565

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Lake Forest Drive  
 Road Segment: Tesla to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,734 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,133 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.87	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-19.10	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-23.06	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.4	63.4	61.6	55.6	64.2	64.8	
Medium Trucks:	58.0	57.3	51.0	49.4	57.9	58.1	
Heavy Trucks:	58.4	57.8	48.8	50.0	58.4	58.5	
Vehicle Noise:	66.1	65.2	62.2	57.4	65.9	66.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	97	209	450
CNEL:	48	104	225	484

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Lake Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,179 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	510 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	50.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 42.814				
Road Grade:	0.0%	Medium Trucks: 42.720				
Left View:	-90.0 degrees	Heavy Trucks: 42.814				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-2.32	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	70.80	-19.56	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	77.97	-23.52	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.1	55.1	53.3	47.2	55.9	56.5
Medium Trucks:	51.0	50.3	43.9	42.4	50.8	51.1
Heavy Trucks:	54.2	53.6	44.5	45.8	54.1	54.3
Vehicle Noise:	59.0	58.2	54.3	50.3	58.8	59.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	42	90
CNEL:	10	21	44	96

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Lynx  
 Road Segment: Irvine Boulevard to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,254 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 103 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-9.25	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-26.49	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-30.45	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	50.1	49.1	47.3	41.2	49.9	50.5
Medium Trucks:	45.0	44.3	37.9	36.4	44.8	45.1
Heavy Trucks:	48.2	47.6	38.5	39.8	48.1	48.3
Vehicle Noise:	53.0	52.2	48.3	44.3	52.8	53.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	3	6	12	27
CNEL:	3	6	13	29

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: I-405 SB Off-Ramp to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 61,860 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,103 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 60 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 56.593				
Road Grade: 0.0%	Medium Trucks: 56.522				
Left View: -90.0 degrees	Heavy Trucks: 56.593				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.88	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-13.36	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-17.32	-0.91	-1.20	-5.16	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	75.0	73.9	72.2	66.1	74.7	75.3	
Medium Trucks:	68.2	67.6	61.2	59.6	68.1	68.3	
Heavy Trucks:	67.9	67.3	58.3	59.5	67.9	68.0	
Vehicle Noise:	76.5	75.5	72.7	67.7	76.3	76.7	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	262	563	1,214	2,615
CNEL:	282	607	1,308	2,817



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Main Street to I-405 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 60,715 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,009 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.80	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-13.44	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-17.40	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.9	73.8	72.1	66.0	74.6	75.3
Medium Trucks:	68.1	67.5	61.1	59.6	68.0	68.3
Heavy Trucks:	67.8	67.2	58.2	59.4	67.8	67.9
Vehicle Noise:	76.4	75.5	72.6	67.6	76.2	76.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	258	557	1,199	2,583
CNEL:	278	599	1,291	2,782

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: I-405 NB Off-Ramp and I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 59,832 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,936 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.73	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-13.50	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-17.46	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	74.8	73.8	72.0	66.0	74.6	75.2	
Medium Trucks:	68.1	67.4	61.0	59.5	68.0	68.2	
Heavy Trucks:	67.8	67.2	58.1	59.4	67.7	67.9	
Vehicle Noise:	76.3	75.4	72.5	67.6	76.1	76.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	256	551	1,187	2,558
CNEL:	276	594	1,279	2,755

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Jamboree Road to Fairchild Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,795 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,283 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.03	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.98	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	66.7	64.9	58.9	67.5	68.1	
Medium Trucks:	61.5	60.9	54.5	53.0	61.4	61.6	
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5	
Vehicle Noise:	69.6	68.7	65.6	60.9	69.4	69.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	357	768
CNEL:	82	178	382	824

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Fairchild Road to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,349 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,246 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.16	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.08	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.03	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.7	64.9	58.8	67.5	68.1
Medium Trucks:	61.5	60.8	54.4	52.9	61.4	61.6
Heavy Trucks:	62.3	61.7	52.7	54.0	62.3	62.4
Vehicle Noise:	69.6	68.7	65.5	60.8	69.4	69.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	164	354	762
CNEL:	82	176	380	818

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Fitch to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 42,207 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,482 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.47	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.77	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.73	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.4	65.6	59.6	68.2	68.8
Medium Trucks:	62.2	61.5	55.2	53.6	62.1	62.3
Heavy Trucks:	63.0	62.5	53.4	54.7	63.0	63.1
Vehicle Noise:	70.3	69.4	66.2	61.5	70.1	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	175	376	810
CNEL:	87	187	403	869

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Michelson Drive to Douglas

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,005 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,713 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.75	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-13.49	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-17.45	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.0	67.3	61.2	69.8	70.4
Medium Trucks:	63.9	63.2	56.8	55.3	63.7	64.0
Heavy Trucks:	64.7	64.1	55.1	56.3	64.7	64.8
Vehicle Noise:	71.9	71.0	67.9	63.2	71.7	72.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	131	281	606	1,306
CNEL:	140	302	650	1,401

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Douglas to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,388 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,662 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.69	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-13.55	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-17.51	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.0	69.0	67.2	61.2	69.8	70.4	
Medium Trucks:	63.8	63.1	56.8	55.2	63.7	63.9	
Heavy Trucks:	64.6	64.0	55.0	56.3	64.6	64.7	
Vehicle Noise:	71.9	71.0	67.8	63.1	71.7	72.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	129	279	601	1,294
CNEL:	139	299	644	1,388

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Skypark to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,157 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,735 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.42	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.82	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.77	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.3	64.6	58.5	67.1	67.7
Medium Trucks:	61.1	60.5	54.1	52.6	61.0	61.3
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	69.2	68.3	65.2	60.5	69.0	69.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	149	320	690
CNEL:	74	159	343	740



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Redhill Avenue to Skypark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,891 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,301 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.57	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.53	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	65.2	63.4	57.3	66.0	66.6
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1
Heavy Trucks:	60.8	60.2	51.2	52.5	60.8	60.9
Vehicle Noise:	68.1	67.2	64.0	59.3	67.9	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	281	606
CNEL:	65	140	302	650

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Birch Street to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,778 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,714 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.39	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.85	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.80	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.0	63.9	62.1	56.1	64.7	65.3	
Medium Trucks:	58.7	58.0	51.7	50.1	58.6	58.8	
Heavy Trucks:	59.6	59.0	49.9	51.2	59.5	59.7	
Vehicle Noise:	66.8	65.9	62.7	58.1	66.6	67.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	107	231	498
CNEL:	53	115	248	534

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Campus Drive to Birch Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,178 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,912 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
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	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.86	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-16.37	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-20.33	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.2	66.2	64.4	58.3	67.0	67.6	
Medium Trucks:	61.0	60.3	53.9	52.4	60.9	61.1	
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9	
Vehicle Noise:	69.0	68.1	65.0	60.3	68.9	69.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	389	839
CNEL:	90	194	418	900

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Main Street  
 Road Segment: Gillette Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,614 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,763 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.80	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.43	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.39	-2.29	-1.20	-5.23	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.8	67.7	65.9	59.9	68.5	69.1	
Medium Trucks:	62.5	61.9	55.5	54.0	62.4	62.6	
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5	
Vehicle Noise:	70.6	69.7	66.6	61.9	70.4	70.9	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	184	396	853
CNEL:	92	197	425	915

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Main Street  
 Road Segment: MacArthur Boulevard to Mercantile

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,827 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,286 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.22	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.02	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.98	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.1	65.4	59.3	67.9	68.5
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.1
Heavy Trucks:	62.8	62.2	53.2	54.4	62.8	62.9
Vehicle Noise:	70.0	69.1	66.0	61.3	69.8	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	168	362	780
CNEL:	84	180	388	836

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Main Street  
 Road Segment: Executive Park to MacArthur Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,554 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,356 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.77	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.47	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.42	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.3	63.5	57.4	66.1	66.7
Medium Trucks:	60.1	59.4	53.1	51.5	60.0	60.2
Heavy Trucks:	60.9	60.3	51.3	52.6	60.9	61.0
Vehicle Noise:	68.2	67.3	64.1	59.4	68.0	68.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	286	616
CNEL:	66	142	307	660

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Main Street  
 Road Segment: Von Karman Avenue to Cartwright

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,744 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,371 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.80	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.44	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.40	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	60.1	59.4	53.1	51.5	60.0	60.2
Heavy Trucks:	61.0	60.4	51.3	52.6	60.9	61.1
Vehicle Noise:	68.2	67.3	64.1	59.5	68.0	68.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	287	618
CNEL:	66	143	308	663

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Main Street  
 Road Segment: McDermott to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,403 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,178 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.43	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.81	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.76	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.2	57.1	65.7	66.3
Medium Trucks:	59.7	59.1	52.7	51.2	59.6	59.9
Heavy Trucks:	60.6	60.0	51.0	52.2	60.6	60.7
Vehicle Noise:	67.8	66.9	63.8	59.1	67.6	68.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	126	271	584
CNEL:	63	135	291	627



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Main Street  
 Road Segment: Red Hill Avenue to Executive Circle

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,874 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,135 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006				Grade Adjustment: 0.0
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.34	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.90	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.85	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.8	63.1	57.0	65.6	66.2
Medium Trucks:	59.7	59.0	52.6	51.1	59.5	59.8
Heavy Trucks:	60.5	59.9	50.9	52.1	60.5	60.6
Vehicle Noise:	67.7	66.8	63.7	59.0	67.5	68.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	124	268	576
CNEL:	62	133	287	618

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Main Street  
 Road Segment: Jamboree Road to Union

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,963 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,059 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.19	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.05	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.01	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.7	62.9	56.9	65.5	66.1
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6
Heavy Trucks:	60.3	59.8	50.7	52.0	60.3	60.5
Vehicle Noise:	67.6	66.7	63.5	58.8	67.4	67.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	121	261	563
CNEL:	60	130	280	604

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Main Street  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,634 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,207 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.13	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.37	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.33	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.1	64.0	62.3	56.2	64.8	65.4	
Medium Trucks:	58.8	58.2	51.8	50.3	58.7	59.0	
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8	
Vehicle Noise:	66.9	66.0	62.9	58.2	66.7	67.2	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	175	378
CNEL:	41	87	188	405

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Main Street  
 Road Segment: Siglo to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,271 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,002 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.06	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.17	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.13	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.6	62.8	56.7	65.4	66.0
Medium Trucks:	59.4	58.7	52.3	50.8	59.3	59.5
Heavy Trucks:	60.2	59.6	50.6	51.9	60.2	60.3
Vehicle Noise:	67.5	66.6	63.4	58.7	67.3	67.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	119	256	552
CNEL:	59	128	275	593

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Main Street  
 Road Segment: Veneto to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,292 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,922 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.89	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.35	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.31	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.4	64.4	62.6	56.6	65.2	65.8
Medium Trucks:	59.2	58.5	52.2	50.6	59.1	59.3
Heavy Trucks:	60.0	59.5	50.4	51.7	60.0	60.2
Vehicle Noise:	67.3	66.4	63.2	58.5	67.1	67.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	249	537
CNEL:	58	124	268	577

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Main Street  
 Road Segment: Paseo Westpark to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,007 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 991 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.99	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.19	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.2	61.4	55.3	64.0	64.6
Medium Trucks:	58.0	57.3	50.9	49.4	57.9	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.1	65.2	62.0	57.3	65.9	66.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	154	331
CNEL:	36	77	165	355

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Main Street  
 Road Segment: Harvard Avenue to San Mateo

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,948 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 986 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.25	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.21	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.1	61.4	55.3	63.9	64.5
Medium Trucks:	58.0	57.3	50.9	49.4	57.8	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.0	65.1	62.0	57.3	65.8	66.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	330
CNEL:	35	76	164	354

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Marine Way  
 Road Segment: Sand Canyon Avenue to Ridge Valley (O Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,895 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,374 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 42.814				
Road Grade: 0.0%	Medium Trucks: 42.720				
Left View: -90.0 degrees	Heavy Trucks: 42.814				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.84	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	77.72	-13.40	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	82.99	-17.35	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.0	67.2	61.2	69.8	70.4
Medium Trucks:	64.0	63.4	57.0	55.5	63.9	64.2
Heavy Trucks:	65.3	64.8	55.7	57.0	65.3	65.5
Vehicle Noise:	72.1	71.2	67.9	63.3	71.9	72.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	310	668
CNEL:	71	154	332	715



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Marine Way  
 Road Segment: Alton Parkway to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,007 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,723 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.91	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-14.33	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-18.28	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.1	64.3	58.3	66.9	67.5
Medium Trucks:	61.1	60.5	54.1	52.6	61.0	61.3
Heavy Trucks:	62.5	61.9	52.8	54.1	62.4	62.6
Vehicle Noise:	69.2	68.3	65.0	60.5	69.0	69.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	115	249	536
CNEL:	57	124	266	574

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Marine Way  
 Road Segment: Lynx to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,066 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,645 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.79	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-14.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-18.41	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.0	64.2	58.2	66.8	67.4
Medium Trucks:	61.0	60.4	54.0	52.4	60.9	61.1
Heavy Trucks:	62.3	61.8	52.7	54.0	62.3	62.4
Vehicle Noise:	69.1	68.2	64.9	60.3	68.9	69.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	113	244	526
CNEL:	56	121	261	563

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Marine Way  
 Road Segment: County Access to Treble

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,373 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,176 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.94	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.30	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.26	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	65.1	63.4	57.3	65.9	66.5
Medium Trucks:	60.2	59.5	53.1	51.6	60.1	60.3
Heavy Trucks:	61.5	60.9	51.9	53.1	61.5	61.6
Vehicle Noise:	68.2	67.3	64.0	59.5	68.0	68.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	99	214	461
CNEL:	49	106	229	494

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Marine Way  
 Road Segment: Ridge Valley (O Street) to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,442 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,099 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.78	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.46	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.41	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	65.0	63.2	57.2	65.8	66.4
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1
Heavy Trucks:	61.3	60.7	51.7	53.0	61.3	61.4
Vehicle Noise:	68.1	67.2	63.9	59.3	67.9	68.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	97	209	451
CNEL:	48	104	224	482

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Marine Way  
 Road Segment: Skyhawk to County Access

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,450 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,687 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.83	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.41	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.36	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.0	62.3	56.2	64.8	65.4
Medium Trucks:	59.1	58.4	52.0	50.5	59.0	59.2
Heavy Trucks:	60.4	59.8	50.8	52.0	60.4	60.5
Vehicle Noise:	67.1	66.2	62.9	58.4	66.9	67.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	181	389
CNEL:	42	90	194	417

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Marine Way  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,902 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,477 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">VehicleType</th> <th style="text-align: center;">Day</th> <th style="text-align: center;">Evening</th> <th style="text-align: center;">Night</th> <th style="text-align: center;">Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td style="text-align: center;">77.5%</td> <td style="text-align: center;">12.9%</td> <td style="text-align: center;">9.6%</td> <td style="text-align: center;">97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td style="text-align: center;">84.8%</td> <td style="text-align: center;">4.9%</td> <td style="text-align: center;">10.3%</td> <td style="text-align: center;">1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td style="text-align: center;">86.5%</td> <td style="text-align: center;">2.7%</td> <td style="text-align: center;">10.8%</td> <td style="text-align: center;">0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.94	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.5	63.5	61.7	55.6	64.3	64.9	
Medium Trucks:	58.5	57.8	51.5	49.9	58.4	58.6	
Heavy Trucks:	59.8	59.2	50.2	51.4	59.8	59.9	
Vehicle Noise:	66.5	65.6	62.4	57.8	66.3	66.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	165	356
CNEL:	38	82	177	382

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Marine Way  
 Road Segment: Treble to Lynx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 16,855 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,391 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.25	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.20	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.2	61.4	55.4	64.0	64.6
Medium Trucks:	58.2	57.6	51.2	49.7	58.1	58.3
Heavy Trucks:	59.5	59.0	49.9	51.2	59.5	59.7
Vehicle Noise:	66.3	65.4	62.1	57.5	66.1	66.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	342
CNEL:	37	79	170	367

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: McGaw Avenue  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,522 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,198 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-0.07	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-17.31	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-21.27	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.0	60.9	59.2	53.1	61.7	62.3	
Medium Trucks:	56.2	55.5	49.2	47.6	56.1	56.3	
Heavy Trucks:	58.1	57.5	48.4	49.7	58.0	58.2	
Vehicle Noise:	64.2	63.3	59.9	55.5	64.0	64.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	116	250
CNEL:	27	58	124	267



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: McGaw Avenue  
 Road Segment: Red Hill Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,147 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,167 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-0.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-17.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-21.38	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.9	60.8	59.0	53.0	61.6	62.2	
Medium Trucks:	56.1	55.4	49.1	47.5	56.0	56.2	
Heavy Trucks:	57.9	57.4	48.3	49.6	57.9	58.0	
Vehicle Noise:	64.1	63.2	59.8	55.4	63.9	64.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	53	114	246
CNEL:	26	57	122	262

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: McGaw Avenue  
 Road Segment: Daimler to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,147 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	755 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-2.08	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-19.32	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-23.28	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.0	58.9	57.1	51.1	59.7	60.3
Medium Trucks:	54.2	53.5	47.2	45.6	54.1	54.3
Heavy Trucks:	56.0	55.5	46.4	47.7	56.0	56.2
Vehicle Noise:	62.2	61.3	57.9	53.5	62.0	62.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	40	85	184
CNEL:	20	42	91	196

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: McGaw Avenue  
 Road Segment: Jamboree Road to Murphy Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,734 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	391 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-4.94	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-22.18	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-26.14	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.1	56.1	54.3	48.2	56.9	57.5
Medium Trucks:	51.3	50.7	44.3	42.8	51.2	51.4
Heavy Trucks:	53.2	52.6	43.6	44.8	53.2	53.3
Vehicle Noise:	59.3	58.5	55.0	50.6	59.2	59.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	25	55	118
CNEL:	13	27	59	126

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Meadowood  
 Road Segment: Culver Drive to Canyonwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,920 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 901 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	0.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-17.09	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-21.05	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	56.6	55.6	53.8	47.8	56.4	57.0	
Medium Trucks:	51.5	50.8	44.4	42.9	51.3	51.6	
Heavy Trucks:	54.7	54.1	45.1	46.3	54.7	54.8	
Vehicle Noise:	59.5	58.7	54.8	50.9	59.4	59.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	26	57	122
CNEL:	13	28	60	130

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Meridian  
 Road Segment: Spectrum to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,707 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 223 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-6.70	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-23.94	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-27.90	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	52.8	51.7	50.0	43.9	52.5	53.1	
Medium Trucks:	47.3	46.6	40.3	38.7	47.2	47.4	
Heavy Trucks:	49.8	49.2	40.2	41.4	49.8	49.9	
Vehicle Noise:	55.3	54.4	50.8	46.6	55.1	55.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	14	30	64
CNEL:	7	15	32	68

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Meridian  
 Road Segment: Alton Parkway to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,238 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	185 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-7.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-24.76	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-28.72	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.0	50.9	49.1	43.1	51.7	52.3
Medium Trucks:	46.5	45.8	39.4	37.9	46.4	46.6
Heavy Trucks:	49.0	48.4	39.3	40.6	48.9	49.1
Vehicle Noise:	54.5	53.6	50.0	45.8	54.3	54.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	12	26	56
CNEL:	6	13	28	60

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Merit  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,718 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	307 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-4.53	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-21.77	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-25.72	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.8	53.8	52.0	46.0	54.6	55.2
Medium Trucks:	49.7	49.0	42.6	41.1	49.6	49.8
Heavy Trucks:	52.9	52.3	43.3	44.5	52.9	53.0
Vehicle Noise:	57.7	56.9	53.0	49.1	57.6	58.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	12	26	56
CNEL:	6	13	27	59

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Michelson Drive  
 Road Segment: Riparian to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,332 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,090 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.76	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.43	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	65.0	63.2	57.1	65.8	66.4
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4
Vehicle Noise:	68.0	67.1	63.9	59.3	67.8	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	97	209	449
CNEL:	48	104	223	481



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Michelson Drive  
 Road Segment: Almond Tree Lane to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,108 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 834 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 37.138				
Road Grade: 0.0%		Medium Trucks: 37.030				
Left View: -90.0 degrees		Heavy Trucks: 37.139				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.23	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-19.47	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-23.42	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	63.9	62.1	56.0	64.7	65.3
Medium Trucks:	58.9	58.2	51.9	50.3	58.8	59.0
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3
Vehicle Noise:	66.9	66.0	62.8	58.2	66.7	67.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	49	106	227
CNEL:	24	52	113	243

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Michelson Drive  
 Road Segment: Von Karman Avenue to Obsidian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,512 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,022 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.62	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.62	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.58	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.9	64.8	63.1	57.0	65.6	66.2	
Medium Trucks:	59.9	59.2	52.8	51.3	59.7	60.0	
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3	
Vehicle Noise:	67.9	67.0	63.7	59.2	67.7	68.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	95	204	439
CNEL:	47	101	218	471

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Michelson Drive  
 Road Segment: Parkside to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,469 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,854 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.00	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.95	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.5	64.4	62.7	56.6	65.2	65.8
Medium Trucks:	59.5	58.8	52.4	50.9	59.4	59.6
Heavy Trucks:	60.8	60.2	51.2	52.4	60.8	60.9
Vehicle Noise:	67.5	66.6	63.3	58.8	67.3	67.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	89	192	415
CNEL:	44	96	206	444

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Michelson Drive  
 Road Segment: Gillman to Seton/Sandburg Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,393 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 775 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">VehicleType</th> <th style="text-align: center;">Day</th> <th style="text-align: center;">Evening</th> <th style="text-align: center;">Night</th> <th style="text-align: center;">Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td style="text-align: center;">77.5%</td> <td style="text-align: center;">12.9%</td> <td style="text-align: center;">9.6%</td> <td style="text-align: center;">97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td style="text-align: center;">84.8%</td> <td style="text-align: center;">4.9%</td> <td style="text-align: center;">10.3%</td> <td style="text-align: center;">1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td style="text-align: center;">86.5%</td> <td style="text-align: center;">2.7%</td> <td style="text-align: center;">10.8%</td> <td style="text-align: center;">0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.55	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-19.79	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-23.74	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.6	63.5	61.8	55.7	64.3	64.9	
Medium Trucks:	58.6	57.9	51.5	50.0	58.5	58.7	
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0	
Vehicle Noise:	66.6	65.7	62.4	57.9	66.4	66.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	100	217
CNEL:	23	50	108	232

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Michelson Drive  
 Road Segment: Carlson to Prince

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,299 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,252 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 75.0 feet Centerline Dist. to Observer: 75.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 70.413 Medium Trucks: 70.356 Heavy Trucks: 70.413																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.09	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	77.72	-15.15	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	82.99	-19.11	-2.33	-1.20	-5.25	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.0	62.2	56.2	64.8	65.4
Medium Trucks:	59.0	58.4	52.0	50.5	58.9	59.1
Heavy Trucks:	60.4	59.8	50.7	52.0	60.3	60.5
Vehicle Noise:	67.1	66.2	62.9	58.3	66.9	67.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	100	216	465
CNEL:	50	107	231	498

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Michelson Drive  
 Road Segment: MacArthur Boulevard to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,065 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,738 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.96	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.28	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.23	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.2	62.4	56.3	65.0	65.6
Medium Trucks:	59.2	58.5	52.2	50.6	59.1	59.3
Heavy Trucks:	60.5	59.9	50.9	52.1	60.5	60.6
Vehicle Noise:	67.2	66.3	63.1	58.5	67.0	67.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	86	184	397
CNEL:	43	92	197	425

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Michelson Drive  
 Road Segment: Harvard Avenue to Parkside

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,016 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,486 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.96	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.91	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.5	63.5	61.7	55.7	64.3	64.9
Medium Trucks:	58.5	57.8	51.5	49.9	58.4	58.6
Heavy Trucks:	59.8	59.2	50.2	51.5	59.8	59.9
Vehicle Noise:	66.6	65.7	62.4	57.8	66.4	66.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	166	358
CNEL:	38	83	178	383

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Michelson Drive  
 Road Segment: Bixby to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,167 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,499 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.92	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.88	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.5	61.8	55.7	64.3	64.9
Medium Trucks:	58.6	57.9	51.5	50.0	58.4	58.7
Heavy Trucks:	59.9	59.3	50.2	51.5	59.9	60.0
Vehicle Noise:	66.6	65.7	62.4	57.9	66.4	66.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	167	360
CNEL:	39	83	179	385



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Michelson Drive  
 Road Segment: Jamboree Road to Carlson

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,554 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,108 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.80	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.44	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.39	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.3	64.5	58.5	67.1	67.7
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	62.7	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	69.4	68.5	65.2	60.7	69.2	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	246	530
CNEL:	57	122	263	567

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Michelson Drive  
 Road Segment: Teller to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,444 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,099 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.78	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.46	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.41	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.3	64.5	58.5	67.1	67.7
Medium Trucks:	61.3	60.7	54.3	52.7	61.2	61.4
Heavy Trucks:	62.6	62.0	53.0	54.3	62.6	62.7
Vehicle Noise:	69.4	68.5	65.2	60.6	69.2	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	245	528
CNEL:	57	122	262	565

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Michelson Drive  
 Road Segment: Jordan East to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,980 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 576 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 29.547 Medium Trucks: 29.411 Heavy Trucks: 29.547																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.84	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	77.72	-21.07	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	82.99	-25.03	3.32	-1.20	-5.77	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.8	63.7	62.0	55.9	64.5	65.1	
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9	
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2	
Vehicle Noise:	66.8	65.9	62.6	58.1	66.6	67.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	38	83	179
CNEL:	19	41	89	191

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Michelson Drive  
 Road Segment: Culver Drive to Angell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,905 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 735 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 16 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 39.306 Medium Trucks: 39.205 Heavy Trucks: 39.307																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.78	1.46	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-20.02	1.48	-1.20	-5.08	0.000	0.000
Heavy Trucks:	82.99	-23.97	1.46	-1.20	-5.56	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.0	62.9	61.2	55.1	63.7	64.3
Medium Trucks:	58.0	57.3	50.9	49.4	57.9	58.1
Heavy Trucks:	59.3	58.7	49.7	50.9	59.3	59.4
Vehicle Noise:	66.0	65.1	61.8	57.3	65.8	66.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	45	98	211
CNEL:	23	49	105	225

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Modjeska (A Street)  
 Road Segment: Portola Springs to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,698 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,130 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 24 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 30.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 30.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 27.659				
Road Grade: 0.0%	Medium Trucks: 27.514				
Left View: -90.0 degrees	Heavy Trucks: 27.659				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.42	3.75	-1.20	-4.81	0.000	0.000
Medium Trucks:	79.45	-18.66	3.79	-1.20	-5.14	0.000	0.000
Heavy Trucks:	84.25	-22.61	3.75	-1.20	-5.77	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.6	68.5	66.8	60.7	69.3	69.9	
Medium Trucks:	63.4	62.7	56.3	54.8	63.3	63.5	
Heavy Trucks:	64.2	63.6	54.6	55.8	64.2	64.3	
Vehicle Noise:	71.4	70.5	67.4	62.7	71.2	71.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	168	363
CNEL:	39	84	181	389

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Modjeska (A Street)  
 Road Segment: South of Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,855 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 153 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-10.10	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-27.34	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-31.30	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.0	57.9	56.2	50.1	58.7	59.3
Medium Trucks:	52.8	52.1	45.7	44.2	52.6	52.9
Heavy Trucks:	53.6	53.0	44.0	45.2	53.6	53.7
Vehicle Noise:	60.8	59.9	56.8	52.1	60.6	61.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	41	89
CNEL:	10	21	44	96

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Muirlands Boulevard  
 Road Segment: Bake Parkway to City Limits

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,718 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,214 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.30	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.0	62.3	56.2	64.8	65.4
Medium Trucks:	58.9	58.2	51.8	50.3	58.7	59.0
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8
Vehicle Noise:	66.9	66.0	62.9	58.2	66.7	67.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	176	379
CNEL:	41	88	189	407

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Muirlands Boulevard  
 Road Segment: Alton Parkway to Sterling

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,970 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 988 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.20	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.1	61.4	55.3	63.9	64.6
Medium Trucks:	58.0	57.3	50.9	49.4	57.8	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.0	65.1	62.0	57.3	65.9	66.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	331
CNEL:	35	76	165	355



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Muirlands Boulevard  
 Road Segment: Wrigley to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,970 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 988 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.20	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.1	61.4	55.3	63.9	64.6
Medium Trucks:	58.0	57.3	50.9	49.4	57.8	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.0	65.1	62.0	57.3	65.9	66.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	331
CNEL:	35	76	165	355

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Newport Coast Drive  
 Road Segment: SR-73 NB Off-Ramp to Turtle Ridge

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,293 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,427 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.09	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.3	61.5	55.5	64.1	64.7
Medium Trucks:	58.3	57.7	51.3	49.8	58.2	58.5
Heavy Trucks:	59.7	59.1	50.0	51.3	59.6	59.8
Vehicle Noise:	66.4	65.5	62.2	57.7	66.2	66.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	75	162	348
CNEL:	37	80	173	373

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Newport Coast Drive  
 Road Segment: Turtle Crest to Bonita Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,138 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,001 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.43	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.67	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.63	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.8	61.8	60.0	53.9	62.6	63.2
Medium Trucks:	56.8	56.1	49.8	48.2	56.7	56.9
Heavy Trucks:	58.1	57.5	48.5	49.7	58.1	58.2
Vehicle Noise:	64.8	63.9	60.7	56.1	64.7	65.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	59	128	275
CNEL:	29	63	137	295

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Nightmist  
 Road Segment: Sand Canyon Avenue to Tulip (Road C)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	11,314 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	933 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.73	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.68	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	59.0	58.0	56.2	50.1	58.8	59.4	
Medium Trucks:	53.5	52.8	46.5	44.9	53.4	53.6	
Heavy Trucks:	56.0	55.4	46.4	47.6	56.0	56.1	
Vehicle Noise:	61.5	60.7	57.0	52.8	61.4	61.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	36	77	166
CNEL:	18	38	82	177

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Northwood  
 Road Segment: Yale Avenue to Savannah

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,780 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	394 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-4.90	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-22.14	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-26.10	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.0	59.0	57.2	51.2	59.8	60.4
Medium Trucks:	54.3	53.6	47.2	45.7	54.1	54.4
Heavy Trucks:	56.1	55.5	46.5	47.7	56.1	56.2
Vehicle Noise:	62.3	61.4	57.9	53.6	62.1	62.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	111
CNEL:	12	26	55	119

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Northwood  
 Road Segment: Goldrush to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,802 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	314 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.90	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-23.13	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-27.09	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.0	58.0	56.2	50.2	58.8	59.4
Medium Trucks:	53.3	52.6	46.2	44.7	53.2	53.4
Heavy Trucks:	55.1	54.5	45.5	46.7	55.1	55.2
Vehicle Noise:	61.3	60.4	56.9	52.6	61.1	61.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	10	21	44	95
CNEL:	10	22	47	102

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Oak Canyon Drive  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,369 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,103 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 37.138				
Road Grade: 0.0%	Medium Trucks: 37.030				
Left View: -90.0 degrees	Heavy Trucks: 37.139				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.53	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-18.76	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-22.72	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.6	66.5	64.7	58.7	67.3	67.9	
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5	
Heavy Trucks:	62.2	61.6	52.5	53.8	62.1	62.3	
Vehicle Noise:	69.4	68.5	65.3	60.7	69.2	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	72	154	332
CNEL:	36	77	165	357

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Pacifica  
 Road Segment: Gateway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,617 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,041 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos: 77.5% 12.9% 9.6% 97.42% Medium Trucks: 84.8% 4.9% 10.3% 1.84% Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
	<b>Noise Source Elevations (in feet)</b>				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0				
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.46	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.0	61.9	60.2	54.1	62.7	63.3	
Medium Trucks:	57.0	56.3	49.9	48.4	56.9	57.1	
Heavy Trucks:	58.3	57.7	48.7	49.9	58.3	58.4	
Vehicle Noise:	65.0	64.1	60.8	56.3	64.8	65.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	131	282
CNEL:	30	65	140	302



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Pacifica  
 Road Segment: Alton Parkway to Gateway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,580 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 790 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.46	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.70	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.66	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.8	60.7	59.0	52.9	61.5	62.1	
Medium Trucks:	55.8	55.1	48.7	47.2	55.7	55.9	
Heavy Trucks:	57.1	56.5	47.5	48.7	57.1	57.2	
Vehicle Noise:	63.8	62.9	59.6	55.1	63.6	64.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	51	109	235
CNEL:	25	54	117	252

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative Project Name: Irvine GP  
 Road Name: Pacifica Job Number: 15937  
 Road Segment: Irvine Center Drive to Fortune Drive (Spectrum Center Drive)

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,909 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 570 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.88	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.12	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.08	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.4	59.3	57.6	51.5	60.1	60.7	
Medium Trucks:	54.4	53.7	47.3	45.8	54.2	54.5	
Heavy Trucks:	55.7	55.1	46.1	47.3	55.7	55.8	
Vehicle Noise:	62.4	61.5	58.2	53.7	62.2	62.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	41	88	189
CNEL:	20	44	94	202

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Pacifica  
 Road Segment: Meridian to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,572 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	377 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.67	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-22.91	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-26.87	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.6	57.5	55.8	49.7	58.3	58.9
Medium Trucks:	52.6	51.9	45.5	44.0	52.4	52.7
Heavy Trucks:	53.9	53.3	44.3	45.5	53.9	54.0
Vehicle Noise:	60.6	59.7	56.4	51.9	60.4	60.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	31	67	143
CNEL:	15	33	71	154

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Park Place  
 Road Segment: Christamon South to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,747 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 309 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-5.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-22.53	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-26.48	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	54.2	53.2	51.4	45.3	54.0	54.6	
Medium Trucks:	48.7	48.0	41.7	40.1	48.6	48.8	
Heavy Trucks:	51.2	50.6	41.6	42.8	51.2	51.3	
Vehicle Noise:	56.7	55.9	52.2	48.0	56.6	57.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	79
CNEL:	8	18	39	84

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative Project Name: Irvine GP  
 Road Name: Portola Parkway Job Number: 15937  
 Road Segment: Bee Canyon Access Road to Sand Canyon Avenue

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,951 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,058 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.31	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.93	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.88	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.8	68.8	67.0	61.0	69.6	70.2	
Medium Trucks:	63.2	62.6	56.2	54.7	63.1	63.4	
Heavy Trucks:	63.3	62.7	53.6	54.9	63.3	63.4	
Vehicle Noise:	71.4	70.5	67.5	62.7	71.2	71.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	350	754
CNEL:	81	175	377	811

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Portola Parkway  
 Road Segment: Jeffrey Road to Bee Canyon Access Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,889 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,053 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.30	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.94	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.89	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.8	67.0	61.0	69.6	70.2
Medium Trucks:	63.2	62.6	56.2	54.7	63.1	63.3
Heavy Trucks:	63.3	62.7	53.6	54.9	63.2	63.4
Vehicle Noise:	71.4	70.5	67.5	62.7	71.2	71.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	349	753
CNEL:	81	175	376	810

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Portola Parkway  
 Road Segment: Arrowhead to Ridge Valley Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,410 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,931 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.04	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.20	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.16	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.6	68.5	66.7	60.7	69.3	69.9	
Medium Trucks:	63.0	62.3	55.9	54.4	62.8	63.1	
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1	
Vehicle Noise:	71.1	70.2	67.3	62.4	70.9	71.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	72	156	336	723
CNEL:	78	168	361	778

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Portola Parkway  
 Road Segment: Sand Canyon Avenue to Arrowhead

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,503 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,774 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.33	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.57	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.53	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.2	68.1	66.4	60.3	68.9	69.5	
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7	
Heavy Trucks:	62.6	62.0	53.0	54.3	62.6	62.7	
Vehicle Noise:	70.8	69.9	66.9	62.0	70.6	71.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	147	317	683
CNEL:	73	158	341	735



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Portola Parkway  
 Road Segment: Portola Springs to SR-241 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,090 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,410 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.33	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.57	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.52	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.1	65.4	59.3	67.9	68.5
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7
Heavy Trucks:	61.6	61.0	52.0	53.3	61.6	61.7
Vehicle Noise:	69.8	68.9	65.9	61.0	69.6	70.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	126	272	586
CNEL:	63	136	293	630

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Portola Parkway  
 Road Segment: Gatepark to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,312 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,418 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.01	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.23	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.18	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.8	66.1	60.0	68.6	69.2
Medium Trucks:	62.3	61.6	55.3	53.7	62.2	62.4
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.5	69.5	66.6	61.7	70.3	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	189	407	876
CNEL:	94	203	437	942

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Portola Parkway  
 Road Segment: ETC-6 (SR-261) NB Off-Ramp to Gatepark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,911 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,385 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.95	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.29	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.24	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	62.2	61.6	55.2	53.6	62.1	62.3
Heavy Trucks:	62.3	61.7	52.6	53.9	62.2	62.4
Vehicle Noise:	70.4	69.5	66.5	61.7	70.2	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	187	403	868
CNEL:	93	201	433	934

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Portola Parkway  
 Road Segment: SR-261 SB Off-Ramp to SR-261 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,023 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,312 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.82	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.42	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.38	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.9	59.8	68.4	69.0	
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2	
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2	
Vehicle Noise:	70.3	69.4	66.4	61.5	70.1	70.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	183	395	850
CNEL:	91	197	424	914

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Portola Parkway  
 Road Segment: Jamboree Road to Bellevue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,703 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,286 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.77	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.47	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.43	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.0	61.4	55.0	53.5	61.9	62.2
Heavy Trucks:	62.1	61.5	52.4	53.7	62.1	62.2
Vehicle Noise:	70.2	69.3	66.3	61.5	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	182	392	843
CNEL:	91	195	421	907

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Portola Parkway  
 Road Segment: Bellevue to ETC-6 (SR-261) SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,438 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,264 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.73	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.51	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.47	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	69.0
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.0	61.4	52.4	53.7	62.0	62.1
Vehicle Noise:	70.2	69.3	66.3	61.4	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	389	838
CNEL:	90	194	418	902

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Portola Parkway  
 Road Segment: Yale Avenue to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,088 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,152 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.51	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.73	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.69	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.3	65.6	59.5	68.1	68.7	
Medium Trucks:	61.8	61.1	54.7	53.2	61.7	61.9	
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9	
Vehicle Noise:	70.0	69.0	66.1	61.2	69.8	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	175	376	810
CNEL:	87	188	405	872

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Portola Parkway  
 Road Segment: Culver Drive to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,869 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,887 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.07	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.30	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.26	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	66.8	65.0	58.9	67.6	68.2	
Medium Trucks:	61.2	60.5	54.2	52.6	61.1	61.3	
Heavy Trucks:	61.2	60.7	51.6	52.9	61.2	61.3	
Vehicle Noise:	69.4	68.5	65.5	60.6	69.2	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	345	742
CNEL:	80	172	371	799



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Portola Parkway  
 Road Segment: Silverado to Portola Springs

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,134 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,001 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.82	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-20.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-24.01	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.8	66.5	67.1
Medium Trucks:	60.1	59.4	53.1	51.5	60.0	60.2
Heavy Trucks:	60.1	59.6	50.5	51.8	60.1	60.2
Vehicle Noise:	68.3	67.4	64.4	59.5	68.1	68.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	100	216	466
CNEL:	50	108	233	502

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Pusan  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,468 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	204 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-6.31	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-23.55	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-27.51	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.1	52.0	50.2	44.2	52.8	53.4
Medium Trucks:	47.9	47.2	40.9	39.3	47.8	48.0
Heavy Trucks:	51.1	50.5	41.5	42.7	51.1	51.2
Vehicle Noise:	55.9	55.1	51.2	47.3	55.8	56.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	20	42
CNEL:	4	10	21	45

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Quail Hill Parkway  
 Road Segment: Shady Canyon Drive to Passage

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,648 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,291 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.84	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.08	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.04	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.4	64.3	62.5	56.5	65.1	65.7
Medium Trucks:	59.1	58.5	52.1	50.6	59.0	59.2
Heavy Trucks:	60.0	59.4	50.3	51.6	60.0	60.1
Vehicle Noise:	67.2	66.3	63.2	58.5	67.0	67.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	85	183	395
CNEL:	42	91	197	424

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Quail Hill Parkway  
 Road Segment: East Knollcrest to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,734 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 803 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.90	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.14	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.10	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.3	62.2	60.5	54.4	63.0	63.7	
Medium Trucks:	57.1	56.4	50.0	48.5	57.0	57.2	
Heavy Trucks:	57.9	57.3	48.3	49.5	57.9	58.0	
Vehicle Noise:	65.1	64.2	61.1	56.4	65.0	65.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	62	134	288
CNEL:	31	67	143	309

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative Project Name: Irvine GP  
 Road Name: Quassar Drive (Spectrum) Job Number: 15937  
 Road Segment: Irvine Center Drive to Spectrum Center Drive (Fortune)

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,026 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 167 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 16 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 39.306 Medium Trucks: 39.205 Heavy Trucks: 39.307																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-7.17	1.46	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-24.40	1.48	-1.20	-5.08	0.000	0.000
Heavy Trucks:	77.97	-28.36	1.46	-1.20	-5.56	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	51.8	50.8	49.0	42.9	51.6	52.2
Medium Trucks:	46.7	46.0	39.6	38.1	46.6	46.8
Heavy Trucks:	49.9	49.3	40.3	41.5	49.9	50.0
Vehicle Noise:	54.7	53.9	50.0	46.1	54.6	54.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	8	17	37
CNEL:	4	9	18	40

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Red Hill Avenue  
 Road Segment: MacArthur Boulevard to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,982 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,711 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.29	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.95	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.91	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.8	60.7	69.3	69.9
Medium Trucks:	63.2	62.5	56.1	54.6	63.0	63.3
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7
Vehicle Noise:	71.3	70.4	67.3	62.5	71.1	71.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	99	214	461	993
CNEL:	107	230	495	1,067

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Red Hill Avenue  
 Road Segment: I-405 Over Crossing to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,560 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,861 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.90	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	67.2	65.4	59.4	68.0	68.6	
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9	
Heavy Trucks:	62.2	61.6	52.6	53.9	62.2	62.3	
Vehicle Noise:	69.9	69.0	66.0	61.2	69.7	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	279	601
CNEL:	65	139	300	646

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Red Hill Avenue  
 Road Segment: Alton Parkway to Deere Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,869 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,629 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.79	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.45	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.40	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.3	59.2	67.8	68.4
Medium Trucks:	61.7	61.0	54.6	53.1	61.5	61.8
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	69.8	68.9	65.8	61.0	69.6	70.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	170	366	789
CNEL:	85	183	394	848



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Red Hill Avenue  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,060 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,562 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.68	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.56	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.52	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.0	66.9	65.2	59.1	67.7	68.3	
Medium Trucks:	61.5	60.9	54.5	53.0	61.4	61.7	
Heavy Trucks:	62.0	61.4	52.3	53.6	61.9	62.1	
Vehicle Noise:	69.7	68.8	65.7	60.9	69.5	69.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	167	360	776
CNEL:	83	180	387	833

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Red Hill Avenue  
 Road Segment: Deere Avenue to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,932 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,469 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.52	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.72	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.68	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.8	65.0	58.9	67.6	68.2
Medium Trucks:	61.4	60.7	54.4	52.8	61.3	61.5
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	69.5	68.6	65.6	60.8	69.3	69.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	163	351	757
CNEL:	81	175	377	813

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Red Hill Avenue  
 Road Segment: Skypark East to MacArthur Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,918 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,808 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.16	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.07	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.03	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.4	68.4	66.6	60.5	69.2	69.8
Medium Trucks:	63.0	62.3	56.0	54.4	62.9	63.1
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	71.1	70.2	67.2	62.4	70.9	71.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	149	321	691
CNEL:	74	160	345	742

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Red Hill Avenue  
 Road Segment: Main Street to Skypark East

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,979 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,566 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 47.329				
Road Grade: 0.0%	Medium Trucks: 47.244				
Left View: -90.0 degrees	Heavy Trucks: 47.329				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.46	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.70	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.66	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.8	67.7	66.0	59.9	68.5	69.1	
Medium Trucks:	62.4	61.7	55.3	53.8	62.2	62.5	
Heavy Trucks:	62.8	62.2	53.2	54.4	62.8	62.9	
Vehicle Noise:	70.5	69.6	66.5	61.7	70.3	70.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	135	291	628
CNEL:	67	145	313	674

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Research Drive  
 Road Segment: Hubble to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,625 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,114 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.30	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.94	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.89	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.5	64.7	58.6	67.3	67.9
Medium Trucks:	61.3	60.6	54.2	52.7	61.2	61.4
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	69.3	68.4	65.3	60.6	69.2	69.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	255	549
CNEL:	59	127	273	589

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Research Drive  
 Road Segment: Scientific to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,298 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,262 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.94	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.18	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.13	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.3	64.2	62.4	56.4	65.0	65.6
Medium Trucks:	59.0	58.4	52.0	50.5	58.9	59.1
Heavy Trucks:	59.9	59.3	50.2	51.5	59.9	60.0
Vehicle Noise:	67.1	66.2	63.1	58.4	66.9	67.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	181	389
CNEL:	42	90	194	418

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Research Drive  
 Road Segment: Bake Parkway to Muller

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,951 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,068 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.86	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.5	61.7	55.7	64.3	64.9
Medium Trucks:	58.3	57.6	51.3	49.7	58.2	58.4
Heavy Trucks:	59.1	58.6	49.5	50.8	59.1	59.3
Vehicle Noise:	66.4	65.5	62.3	57.7	66.2	66.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	75	162	348
CNEL:	37	81	173	374

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Research Drive  
 Road Segment: Irvine Center Drive to Bunsen

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,459 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 863 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.59	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.83	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.79	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.6	62.6	60.8	54.7	63.4	64.0
Medium Trucks:	57.4	56.7	50.3	48.8	57.3	57.5
Heavy Trucks:	58.2	57.6	48.6	49.8	58.2	58.3
Vehicle Noise:	65.5	64.6	61.4	56.7	65.3	65.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	140	302
CNEL:	32	70	150	324



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative	Project Name: Irvine GP
Road Name: Ridge Valley (O Street)	Job Number: 15937
Road Segment: Irvine Boulevard to Trabuco Road (Great Park Boulevard)	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,025 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 1,240 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 45 mph																					
Near/Far Lane Distance: 48 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 62.5 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 62.5 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 57.786																				
Left View: -90.0 degrees	Medium Trucks: 57.717																				
Right View: 90.0 degrees	Heavy Trucks: 57.787																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.21	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.1	62.4	56.3	64.9	65.5
Medium Trucks:	59.0	58.3	51.9	50.4	58.8	59.1
Heavy Trucks:	59.8	59.2	50.2	51.4	59.8	59.9
Vehicle Noise:	67.0	66.1	63.0	58.3	66.8	67.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	83	179	385
CNEL:	41	89	192	413

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Ridge Valley (O Street)  
 Road Segment: Portola Parkway to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,161 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,003 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.94	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.17	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.13	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.3	63.2	61.4	55.4	64.0	64.6	
Medium Trucks:	58.0	57.4	51.0	49.5	57.9	58.2	
Heavy Trucks:	58.9	58.3	49.3	50.5	58.9	59.0	
Vehicle Noise:	66.1	65.2	62.1	57.4	65.9	66.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	72	155	334
CNEL:	36	77	166	358

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative Project Name: Irvine GP  
 Road Name: Ridge Valley (O Street) Job Number: 15937  
 Road Segment: Trabuco Road (Great Park Boulevard) to Marine Way

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,130 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 918 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">VehicleType</th> <th style="text-align: center;">Day</th> <th style="text-align: center;">Evening</th> <th style="text-align: center;">Night</th> <th style="text-align: center;">Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td style="text-align: center;">77.5%</td> <td style="text-align: center;">12.9%</td> <td style="text-align: center;">9.6%</td> <td style="text-align: center;">97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td style="text-align: center;">84.8%</td> <td style="text-align: center;">4.9%</td> <td style="text-align: center;">10.3%</td> <td style="text-align: center;">1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td style="text-align: center;">86.5%</td> <td style="text-align: center;">2.7%</td> <td style="text-align: center;">10.8%</td> <td style="text-align: center;">0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.52	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.9	62.8	61.1	55.0	63.6	64.2
Medium Trucks:	57.7	57.0	50.6	49.1	57.5	57.8
Heavy Trucks:	58.5	57.9	48.9	50.1	58.5	58.6
Vehicle Noise:	65.7	64.8	61.7	57.0	65.5	66.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	68	146	315
CNEL:	34	73	157	338

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Ridge Valley (O Street)  
 Road Segment: Ranchland to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 930 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 77 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-13.10	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-30.34	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-34.29	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	56.0	54.9	53.2	47.1	55.7	56.3	
Medium Trucks:	49.8	49.1	42.7	41.2	49.6	49.9	
Heavy Trucks:	50.6	50.0	41.0	42.2	50.6	50.7	
Vehicle Noise:	57.8	56.9	53.8	49.1	57.6	58.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	12	26	56
CNEL:	6	13	28	60

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Ridgeline Drive  
 Road Segment: Concordia East to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,232 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,339 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 35 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 40.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 40.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 32.140				
Road Grade: 0.0%		Medium Trucks: 32.016				
Left View: -90.0 degrees		Heavy Trucks: 32.141				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	0.41	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-16.83	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	81.57	-20.79	2.78	-1.20	-5.56	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.2	63.5	57.4	66.0	66.6
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5
Vehicle Noise:	68.5	67.6	64.2	59.8	68.3	68.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	144	310
CNEL:	33	71	154	331

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Ridgeline Drive  
 Road Segment: Turtle Rock Drive to San Simeon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,110 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,247 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 40.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 40.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 32.140				
Road Grade: 0.0%	Medium Trucks: 32.016				
Left View: -90.0 degrees	Heavy Trucks: 32.141				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	0.10	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-17.14	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	81.57	-21.10	2.78	-1.20	-5.56	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.0	64.9	63.1	57.1	65.7	66.3	
Medium Trucks:	60.2	59.5	53.2	51.6	60.1	60.3	
Heavy Trucks:	62.0	61.5	52.4	53.7	62.0	62.2	
Vehicle Noise:	68.2	67.3	63.9	59.5	68.0	68.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	137	295
CNEL:	32	68	146	315

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Rockfield Avenue  
 Road Segment: Whatney to McLaren

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,500 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,361 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.61	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.85	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.81	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.5	62.8	56.7	65.3	65.9
Medium Trucks:	59.4	58.7	52.3	50.8	59.2	59.5
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3
Vehicle Noise:	67.4	66.5	63.4	58.7	67.2	67.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	88	190	409
CNEL:	44	95	204	439

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Rockfield Avenue  
 Road Segment: Bake Parkway to Whatney

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,559 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	624 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.20	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.2	61.1	59.4	53.3	62.0	62.6
Medium Trucks:	56.0	55.3	48.9	47.4	55.9	56.1
Heavy Trucks:	56.8	56.2	47.2	48.4	56.8	56.9
Vehicle Noise:	64.0	63.1	60.0	55.3	63.9	64.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	113	243
CNEL:	26	56	121	261



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Rockfield Avenue  
 Road Segment: Thomas to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	5,734 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	473 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-5.20	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-22.44	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-26.40	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.0	59.9	58.2	52.1	60.8	61.4
Medium Trucks:	54.8	54.1	47.7	46.2	54.7	54.9
Heavy Trucks:	55.6	55.0	46.0	47.2	55.6	55.7
Vehicle Noise:	62.8	61.9	58.8	54.1	62.7	63.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	44	94	202
CNEL:	22	47	101	217

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Roosevelt  
 Road Segment: Jeffrey Road to Vision

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,060 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,407 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.04	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.19	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.15	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.3	63.2	61.5	55.4	64.0	64.7	
Medium Trucks:	58.3	57.6	51.2	49.7	58.2	58.4	
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7	
Vehicle Noise:	66.3	65.4	62.1	57.6	66.1	66.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	74	160	345
CNEL:	37	80	172	370

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Roosevelt  
 Road Segment: Yale Avenue to Van Buren

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,191 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 758 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 29.547 Medium Trucks: 29.411 Heavy Trucks: 29.547																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.64	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	77.72	-19.88	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	82.99	-23.84	3.32	-1.20	-5.77	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.2	57.1	65.7	66.3
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4
Vehicle Noise:	68.0	67.1	63.8	59.3	67.8	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	46	100	215
CNEL:	23	50	107	230

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Roosevelt  
 Road Segment: Vision to Bay Tree

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,183 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,335 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.42	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.38	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.1	63.0	61.3	55.2	63.8	64.4
Medium Trucks:	58.1	57.4	51.0	49.5	57.9	58.2
Heavy Trucks:	59.4	58.8	49.7	51.0	59.4	59.5
Vehicle Noise:	66.1	65.2	61.9	57.4	65.9	66.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	72	155	333
CNEL:	36	77	166	357

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Roosevelt  
 Road Segment: Nimitz to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,507 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,197 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.85	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.6	62.5	60.8	54.7	63.3	63.9	
Medium Trucks:	57.6	56.9	50.5	49.0	57.5	57.7	
Heavy Trucks:	58.9	58.3	49.3	50.5	58.9	59.0	
Vehicle Noise:	65.6	64.7	61.4	56.9	65.4	65.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	144	310
CNEL:	33	71	154	332

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Roosevelt  
 Road Segment: Tulip (Road C) to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,715 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,131 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.90	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.14	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.10	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.4	62.3	60.5	54.5	63.1	63.7
Medium Trucks:	57.3	56.7	50.3	48.8	57.2	57.5
Heavy Trucks:	58.7	58.1	49.0	50.3	58.6	58.8
Vehicle Noise:	65.4	64.5	61.2	56.6	65.2	65.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	139	298
CNEL:	32	69	148	319

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Royal Oak  
 Road Segment: Alton Parkway to Eaglecreek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,830 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	398 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	30.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	30.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 29.547				
Road Grade:	0.0%	Medium Trucks: 29.411				
Left View:	-90.0 degrees	Heavy Trucks: 29.547				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-4.86	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	75.75	-22.09	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	81.57	-26.05	3.32	-1.20	-5.77	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.6	60.5	58.7	52.7	61.3	61.9
Medium Trucks:	55.8	55.1	48.8	47.2	55.7	55.9
Heavy Trucks:	57.6	57.1	48.0	49.3	57.6	57.8
Vehicle Noise:	63.8	62.9	59.5	55.1	63.6	64.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	113
CNEL:	12	26	56	120

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Oak Canyon Drive to Burt Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 51,595 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,257 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.88	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.36	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.31	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.2	69.1	67.4	61.3	69.9	70.5	
Medium Trucks:	63.8	63.1	56.7	55.2	63.6	63.9	
Heavy Trucks:	64.2	63.6	54.5	55.8	64.2	64.3	
Vehicle Noise:	71.9	71.0	67.9	63.1	71.7	72.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	109	234	505	1,088
CNEL:	117	252	543	1,169



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Irvine Center Drive to Oak Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 49,313 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,068 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.69	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.55	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.51	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	68.9	67.2	61.1	69.7	70.3
Medium Trucks:	63.6	62.9	56.5	55.0	63.4	63.7
Heavy Trucks:	64.0	63.4	54.3	55.6	64.0	64.1
Vehicle Noise:	71.7	70.8	67.7	62.9	71.5	72.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	227	490	1,056
CNEL:	113	244	526	1,134

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-405 NB Off-Ramp to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,506 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,837 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.43	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-13.81	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.76	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.7	71.6	69.9	63.8	72.4	73.0
Medium Trucks:	66.3	65.6	59.2	57.7	66.1	66.4
Heavy Trucks:	66.7	66.1	57.0	58.3	66.7	66.8
Vehicle Noise:	74.4	73.5	70.4	65.6	74.2	74.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	246	530	1,141
CNEL:	123	264	569	1,226

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Burt Road to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 53,826 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,441 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.07	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.17	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.13	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.7	68.0	61.9	70.5	71.1
Medium Trucks:	64.3	63.7	57.3	55.8	64.2	64.5
Heavy Trucks:	64.8	64.2	55.1	56.4	64.7	64.9
Vehicle Noise:	72.5	71.6	68.5	63.7	72.3	72.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	245	527	1,135
CNEL:	122	263	566	1,220

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Marine to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 60,722 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,010 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.59	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-12.65	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-16.60	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.7	71.6	69.9	63.8	72.4	73.0
Medium Trucks:	66.2	65.6	59.2	57.7	66.1	66.4
Heavy Trucks:	66.7	66.1	57.0	58.3	66.6	66.8
Vehicle Noise:	74.4	73.5	70.4	65.6	74.2	74.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	190	409	882	1,900
CNEL:	204	440	947	2,041

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Trabuco Road to Towngate

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,436 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,253 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.52	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.48	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	68.0	66.2	60.1	68.8	69.4
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	70.7	69.8	66.8	62.0	70.5	71.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	196	422	910
CNEL:	98	211	454	977

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Barranca Parkway to Waterworks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,030 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,220 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.57	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.52	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.0	67.9	66.1	60.1	68.7	69.3	
Medium Trucks:	62.5	61.9	55.5	54.0	62.4	62.7	
Heavy Trucks:	63.0	62.4	53.3	54.6	62.9	63.1	
Vehicle Noise:	70.7	69.8	66.7	61.9	70.5	70.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	195	419	903
CNEL:	97	209	450	970

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-5 SB Off-Ramp to Marine

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 50,537 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,169 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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Autos:	77.5%	12.9%	9.6%	97.42%																	
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Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.79	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-13.45	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-17.40	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.9	70.8	69.1	63.0	71.6	72.2
Medium Trucks:	65.5	64.8	58.4	56.9	65.3	65.6
Heavy Trucks:	65.9	65.3	56.2	57.5	65.8	66.0
Vehicle Noise:	73.6	72.7	69.6	64.8	73.4	73.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	168	362	780	1,681
CNEL:	181	389	838	1,806

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Hospital to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 37,782 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,117 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.53	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.71	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.67	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.8	67.8	66.0	60.0	68.6	69.2	
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5	
Heavy Trucks:	62.8	62.2	53.2	54.4	62.8	62.9	
Vehicle Noise:	70.5	69.6	66.6	61.8	70.3	70.8	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	190	410	884
CNEL:	95	205	441	950



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Nightmist to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,040 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,881 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.48	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-13.76	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-17.71	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.6	70.5	68.7	62.7	71.3	71.9
Medium Trucks:	65.1	64.5	58.1	56.6	65.0	65.3
Heavy Trucks:	65.6	65.0	55.9	57.2	65.5	65.7
Vehicle Noise:	73.3	72.4	69.3	64.5	73.1	73.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	160	345	744	1,602
CNEL:	172	371	799	1,722

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 36,253 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,991 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.35	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.89	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.84	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.6	70.5	68.8	62.7	71.3	72.0
Medium Trucks:	65.2	64.5	58.1	56.6	65.1	65.3
Heavy Trucks:	65.6	65.0	56.0	57.2	65.6	65.7
Vehicle Noise:	73.3	72.4	69.3	64.6	73.1	73.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	208	449	966
CNEL:	104	224	482	1,038

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-5 NB Off-Ramp to Nightmist

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,459 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,833 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.43	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-13.81	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-17.77	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.5	68.7	62.6	71.3	71.9
Medium Trucks:	65.1	64.4	58.1	56.5	65.0	65.2
Heavy Trucks:	65.5	64.9	55.9	57.1	65.5	65.6
Vehicle Noise:	73.2	72.3	69.3	64.5	73.0	73.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	159	342	738	1,589
CNEL:	171	368	793	1,707

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Towngate to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 34,028 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,807 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.07	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.16	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.12	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.3	65.6	59.5	68.1	68.7	
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.1	
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5	
Vehicle Noise:	70.1	69.2	66.1	61.3	69.9	70.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	178	383	824
CNEL:	89	191	411	886

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Waterworks to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 33,123 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,733 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.96	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.28	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.24	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.2	65.4	59.4	68.0	68.6	
Medium Trucks:	61.8	61.2	54.8	53.2	61.7	61.9	
Heavy Trucks:	62.2	61.7	52.6	53.9	62.2	62.4	
Vehicle Noise:	70.0	69.0	66.0	61.2	69.8	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	376	810
CNEL:	87	187	404	870

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Irvine Boulevard to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,682 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,459 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.77	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.01	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.96	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.1	64.4	58.3	66.9	67.5
Medium Trucks:	60.8	60.1	53.7	52.2	60.6	60.9
Heavy Trucks:	61.2	60.6	51.5	52.8	61.2	61.3
Vehicle Noise:	68.9	68.0	64.9	60.1	68.7	69.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	110	237	511
CNEL:	55	118	255	549

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Roosevelt to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,585 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,266 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.73	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-14.51	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-18.46	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.8	68.0	61.9	70.6	71.2
Medium Trucks:	64.4	63.7	57.4	55.8	64.3	64.5
Heavy Trucks:	64.8	64.2	55.2	56.4	64.8	64.9
Vehicle Noise:	72.5	71.6	68.6	63.8	72.3	72.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	308	663	1,428
CNEL:	153	331	712	1,535

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Alton Parkway to Hospital

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,402 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,838 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.12	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.12	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.07	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5
Heavy Trucks:	62.8	62.2	53.2	54.4	62.8	62.9
Vehicle Noise:	70.5	69.6	66.6	61.8	70.3	70.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	391	842
CNEL:	90	195	420	905



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Sand Canyon/Shady Canyon  
 Road Segment: Quail Hill Parkway to I-405 SB Ramps

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,990 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,979 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.56	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.68	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.64	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.8	67.0	60.9	69.6	70.2
Medium Trucks:	63.4	62.7	56.4	54.8	63.3	63.5
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9
Vehicle Noise:	71.5	70.6	67.5	62.8	71.3	71.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	158	341	734
CNEL:	79	170	366	789

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Scientific Way  
 Road Segment: Irvine Center Drive to Wald

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,653 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 136 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-9.51	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-26.75	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-30.71	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.5	51.5	49.7	43.7	52.3	52.9
Medium Trucks:	46.8	46.1	39.7	38.2	46.6	46.9
Heavy Trucks:	48.6	48.0	39.0	40.2	48.6	48.7
Vehicle Noise:	54.8	53.9	50.5	46.1	54.6	55.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	13	27	59
CNEL:	6	14	29	63

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Shady Canyon Drive  
 Road Segment: Culver Drive/Bonita Canyon Drive to Cloverfield

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,409 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 776 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.51	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-20.75	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-24.70	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.3	66.3	64.5	58.4	67.1	67.7	
Medium Trucks:	60.9	60.2	53.9	52.3	60.8	61.0	
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4	
Vehicle Noise:	69.0	68.1	65.1	60.3	68.8	69.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	145	313
CNEL:	34	73	156	337

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Shady Canyon Drive  
 Road Segment: Bommer Canyon Road to Sunnyhill

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,049 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	664 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	50.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 42.814				
Road Grade:	0.0%	Medium Trucks: 42.720				
Left View:	-90.0 degrees	Heavy Trucks: 42.814				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.19	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-21.42	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.38	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.7	62.9	56.8	65.5	66.1
Medium Trucks:	59.3	58.6	52.3	50.7	59.2	59.4
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8
Vehicle Noise:	67.4	66.5	63.5	58.7	67.2	67.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	70	152	326
CNEL:	35	76	163	351

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Skyhawk  
 Road Segment: Great Park Boulevard to Marine Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,431 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 861 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 25 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-0.05	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-17.29	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-21.24	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.4	55.4	53.6	47.6	56.2	56.8
Medium Trucks:	51.3	50.6	44.2	42.7	51.2	51.4
Heavy Trucks:	54.5	53.9	44.9	46.1	54.5	54.6
Vehicle Noise:	59.3	58.5	54.6	50.7	59.2	59.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	26	55	118
CNEL:	13	27	58	126

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Southwood  
 Road Segment: Yale Avenue to Colt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,054 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 252 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-6.85	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-24.08	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-28.04	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	58.1	57.0	55.3	49.2	57.8	58.4	
Medium Trucks:	52.3	51.6	45.3	43.7	52.2	52.4	
Heavy Trucks:	54.2	53.6	44.5	45.8	54.1	54.3	
Vehicle Noise:	60.3	59.4	56.0	51.6	60.1	60.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	18	38	83
CNEL:	9	19	41	88

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Southwood  
 Road Segment: Challenger to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,909 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	240 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-7.06	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-24.30	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-28.25	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.9	56.8	55.0	49.0	57.6	58.2
Medium Trucks:	52.1	51.4	45.1	43.5	52.0	52.2
Heavy Trucks:	53.9	53.4	44.3	45.6	53.9	54.1
Vehicle Noise:	60.1	59.2	55.8	51.4	59.9	60.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	80
CNEL:	9	18	40	85

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Spectrum Center Drive (Fortune)  
 Road Segment: Pacifica to Quassar Drive (Spectrum )

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,853 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 978 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.53	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.48	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.2	58.2	56.4	50.3	59.0	59.6
Medium Trucks:	53.7	53.0	46.7	45.1	53.6	53.8
Heavy Trucks:	56.2	55.6	46.6	47.8	56.2	56.3
Vehicle Noise:	61.7	60.9	57.2	53.0	61.6	62.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	79	171
CNEL:	18	39	85	182



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Spectrum Center Drive (Fortune)  
 Road Segment: Quassar Drive (Spectrum ) to Gatewayb

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,277 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,095 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	0.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.03	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-20.99	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.7	58.6	56.9	50.8	59.4	60.1
Medium Trucks:	54.2	53.5	47.2	45.6	54.1	54.3
Heavy Trucks:	56.7	56.1	47.1	48.3	56.7	56.8
Vehicle Noise:	62.2	61.4	57.7	53.5	62.0	62.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	40	86	184
CNEL:	20	42	91	196

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Sunnyhill  
 Road Segment: Shady Canyon Drive to Turtle Rock Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,807 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	562 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-1.90	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-19.14	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-23.10	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.6	53.5	51.8	45.7	54.3	54.9
Medium Trucks:	49.4	48.7	42.4	40.8	49.3	49.5
Heavy Trucks:	52.6	52.0	43.0	44.3	52.6	52.7
Vehicle Noise:	57.5	56.6	52.7	48.8	57.3	57.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	41	89
CNEL:	9	20	44	95

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Technology Drive  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,564 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,769 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.47	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.72	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.9	59.8	68.4	69.0	
Medium Trucks:	62.4	61.8	55.4	53.9	62.3	62.6	
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4	
Vehicle Noise:	70.5	69.6	66.5	61.8	70.3	70.8	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	142	305	657
CNEL:	71	152	327	705

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative	Project Name: Irvine GP
Road Name: Technology Drive	Job Number: 15937
Road Segment: Old Laguna Canyon Road to I-5/SR-133 Undercrossing	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS															
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>															
Average Daily Traffic (Adt): 25,455 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,100 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15															
<b>Site Data</b>	<b>Vehicle Mix</b>															
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Autos:</td> <td style="text-align: center;">77.5%</td> <td style="text-align: center;">12.9%</td> <td style="text-align: center;">9.6%</td> <td style="text-align: center;">97.42%</td> </tr> <tr> <td style="text-align: center;">Medium Trucks:</td> <td style="text-align: center;">84.8%</td> <td style="text-align: center;">4.9%</td> <td style="text-align: center;">10.3%</td> <td style="text-align: center;">1.84%</td> </tr> <tr> <td style="text-align: center;">Heavy Trucks:</td> <td style="text-align: center;">86.5%</td> <td style="text-align: center;">2.7%</td> <td style="text-align: center;">10.8%</td> <td style="text-align: center;">0.74%</td> </tr> </table>	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Autos:	77.5%	12.9%	9.6%	97.42%												
Medium Trucks:	84.8%	4.9%	10.3%	1.84%												
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%												
	<b>Noise Source Elevations (in feet)</b>															
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0															
	<b>Lane Equivalent Distance (in feet)</b>															
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787															

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.97	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.92	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.4	64.7	58.6	67.2	67.8
Medium Trucks:	61.2	60.6	54.2	52.7	61.1	61.4
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	69.3	68.4	65.3	60.6	69.1	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	254	547
CNEL:	59	126	272	586

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Technology Drive  
 Road Segment: I-5/SR-133 to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,498 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,021 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.09	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.3	64.5	58.4	67.1	67.7
Medium Trucks:	61.1	60.4	54.0	52.5	61.0	61.2
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	69.2	68.2	65.1	60.4	69.0	69.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	115	247	533
CNEL:	57	123	265	572

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Technology Drive  
 Road Segment: Ada to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,550 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 540 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.62	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.86	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.82	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.6	60.5	58.8	52.7	61.3	61.9	
Medium Trucks:	55.3	54.7	48.3	46.8	55.2	55.5	
Heavy Trucks:	56.2	55.6	46.6	47.8	56.2	56.3	
Vehicle Noise:	63.4	62.5	59.4	54.7	63.2	63.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	48	103	221
CNEL:	24	51	110	237

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Toledo Way  
 Road Segment: Bake Parkway to City Limits

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,798 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 643 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-21.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-25.52	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.6	62.6	60.8	54.7	63.4	64.0
Medium Trucks:	57.2	56.5	50.2	48.6	57.1	57.3
Heavy Trucks:	57.6	57.0	48.0	49.2	57.6	57.7
Vehicle Noise:	65.3	64.4	61.4	56.6	65.1	65.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	137	296
CNEL:	32	69	148	318

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Toledo Way  
 Road Segment: Goodyear to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,405 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	528 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.42	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.37	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.8	61.7	59.9	53.9	62.5	63.1
Medium Trucks:	56.3	55.7	49.3	47.8	56.2	56.5
Heavy Trucks:	56.8	56.2	47.1	48.4	56.7	56.9
Vehicle Noise:	64.5	63.6	60.5	55.7	64.3	64.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	56	120	260
CNEL:	28	60	129	279



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Toledo Way  
 Road Segment: Alton Parkway to Parker

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	5,994 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	494 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.47	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.71	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.66	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.5	61.4	59.7	53.6	62.2	62.8
Medium Trucks:	56.1	55.4	49.0	47.5	55.9	56.2
Heavy Trucks:	56.5	55.9	46.8	48.1	56.5	56.6
Vehicle Noise:	64.2	63.3	60.2	55.4	64.0	64.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	115	248
CNEL:	27	57	124	267

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Trabuco Road  
 Road Segment: Keystone to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,736 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,216 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.30	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.1	64.0	62.3	56.2	64.8	65.5	
Medium Trucks:	58.9	58.2	51.8	50.3	58.8	59.0	
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8	
Vehicle Noise:	66.9	66.0	62.9	58.2	66.8	67.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	176	380
CNEL:	41	88	189	407

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Trabuco Road  
 Road Segment: Jeffrey Road to Keystone

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,256 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,176 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.44	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.0	63.9	62.1	56.1	64.7	65.3	
Medium Trucks:	58.7	58.1	51.7	50.1	58.6	58.8	
Heavy Trucks:	59.6	59.0	49.9	51.2	59.5	59.7	
Vehicle Noise:	66.8	65.9	62.7	58.1	66.6	67.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	80	172	371
CNEL:	40	86	185	398

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Trabuco Road  
 Road Segment: Culver Drive to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,483 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,112 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.73	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.68	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.7	63.7	61.9	55.8	64.5	65.1	
Medium Trucks:	58.5	57.8	51.5	49.9	58.4	58.6	
Heavy Trucks:	59.3	58.7	49.7	51.0	59.3	59.4	
Vehicle Noise:	66.6	65.7	62.5	57.8	66.4	66.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	166	358
CNEL:	38	83	178	384

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Trabuco Road  
 Road Segment: Monroe to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,466 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,111 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.73	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.69	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.7	63.7	61.9	55.8	64.5	65.1
Medium Trucks:	58.5	57.8	51.4	49.9	58.4	58.6
Heavy Trucks:	59.3	58.7	49.7	50.9	59.3	59.4
Vehicle Noise:	66.6	65.6	62.5	57.8	66.4	66.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	166	358
CNEL:	38	83	178	384

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Trabuco Road  
 Road Segment: I-5 NB Off-Ramp to Monroe

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,135 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,084 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.84	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.80	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.5	61.8	55.7	64.4	65.0
Medium Trucks:	58.4	57.7	51.3	49.8	58.3	58.5
Heavy Trucks:	59.2	58.6	49.6	50.8	59.2	59.3
Vehicle Noise:	66.4	65.5	62.4	57.7	66.3	66.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	163	352
CNEL:	38	81	175	377

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Trabuco Road  
 Road Segment: Yale Avenue to Remington

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,278 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,013 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.90	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.09	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.3	61.5	55.4	64.1	64.7
Medium Trucks:	58.1	57.4	51.0	49.5	58.0	58.2
Heavy Trucks:	58.9	58.3	49.3	50.5	58.9	59.0
Vehicle Noise:	66.2	65.2	62.1	57.4	66.0	66.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	72	156	336
CNEL:	36	78	167	361

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Trabuco Road  
 Road Segment: Remington to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,518 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 950 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.41	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.37	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.0	63.0	61.2	55.2	63.8	64.4	
Medium Trucks:	57.8	57.1	50.8	49.2	57.7	57.9	
Heavy Trucks:	58.6	58.1	49.0	50.3	58.6	58.7	
Vehicle Noise:	65.9	65.0	61.8	57.1	65.7	66.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	150	322
CNEL:	35	74	160	346



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Turtle Ridge Drive  
 Road Segment: Federation Way to Bonita Canyon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,930 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,727 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.42	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.82	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.77	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.6	65.6	63.8	57.8	66.4	67.0	
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5	
Heavy Trucks:	61.2	60.6	51.6	52.9	61.2	61.3	
Vehicle Noise:	68.5	67.6	64.4	59.7	68.3	68.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	223	480
CNEL:	51	111	239	515

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Turtle Rock Drive  
 Road Segment: Ridgeline to Willowleaf

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,823 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	728 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.33	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-20.57	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-24.52	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.8	64.7	62.9	56.9	65.5	66.1	
Medium Trucks:	59.5	58.9	52.5	51.0	59.4	59.6	
Heavy Trucks:	60.4	59.8	50.7	52.0	60.3	60.5	
Vehicle Noise:	67.6	66.7	63.5	58.9	67.4	67.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	117	252
CNEL:	27	58	125	270

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Turtle Rock Drive  
 Road Segment: Silkwood to Sunnyhill

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,720 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	719 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.38	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-20.62	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-24.58	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.7	62.9	56.8	65.5	66.1
Medium Trucks:	59.5	58.8	52.4	50.9	59.4	59.6
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	67.6	66.6	63.5	58.8	67.4	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	116	250
CNEL:	27	58	124	268

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Turtle Rock Drive  
 Road Segment: Canyon Park to Ridgeline

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,353 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	607 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.12	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-21.36	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-25.32	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.0	63.9	62.1	56.1	64.7	65.3
Medium Trucks:	58.7	58.1	51.7	50.2	58.6	58.9
Heavy Trucks:	59.6	59.0	49.9	51.2	59.6	59.7
Vehicle Noise:	66.8	65.9	62.8	58.1	66.6	67.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	48	104	223
CNEL:	24	52	111	239

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Turtle Rock Drive  
 Road Segment: Sunnyhill to Southernwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,658 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	302 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-7.15	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-24.39	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-28.35	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	60.9	59.1	53.1	61.7	62.3
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8
Heavy Trucks:	56.5	56.0	46.9	48.2	56.5	56.6
Vehicle Noise:	63.8	62.9	59.7	55.0	63.6	64.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	30	65	140
CNEL:	15	32	70	150

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Turtle Rock Drive  
 Road Segment: Campus Drive to Hillgate

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,260 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	599 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		57.786		
Left View:	-90.0 degrees	Medium Trucks:		57.717		
Right View:	90.0 degrees	Heavy Trucks:		57.787		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.42	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.37	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.0	61.0	59.2	53.2	61.8	62.4
Medium Trucks:	55.8	55.1	48.8	47.2	55.7	55.9
Heavy Trucks:	56.6	56.0	47.0	48.3	56.6	56.7
Vehicle Noise:	63.9	63.0	59.8	55.1	63.7	64.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	51	110	237
CNEL:	25	55	118	254

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Turtle Rock Drive  
 Road Segment: Paseo Segovia to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,076 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 336 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 32.140 Medium Trucks: 32.016 Heavy Trucks: 32.141																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-6.68	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-23.92	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	84.25	-27.88	2.78	-1.20	-5.56	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.4	62.3	60.5	54.5	63.1	63.7	
Medium Trucks:	57.1	56.5	50.1	48.5	57.0	57.2	
Heavy Trucks:	57.9	57.4	48.3	49.6	57.9	58.1	
Vehicle Noise:	65.2	64.3	61.1	56.5	65.0	65.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	40	86	186
CNEL:	20	43	92	199

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: University Drive  
 Road Segment: Golden Glow to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 43,009 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,548 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.09	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.15	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.10	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.0	70.0	68.2	62.2	70.8	71.4
Medium Trucks:	64.6	63.9	57.6	56.0	64.5	64.7
Heavy Trucks:	65.0	64.4	55.4	56.7	65.0	65.1
Vehicle Noise:	72.7	71.8	68.8	64.0	72.5	73.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	199	429	924
CNEL:	99	214	461	993



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: University Drive  
 Road Segment: Ridgeline to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 52,466 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,328 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 70.413				
Road Grade: 0.0%	Medium Trucks: 70.356				
Left View: -90.0 degrees	Heavy Trucks: 70.413				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.95	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.28	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-17.24	-2.33	-1.20	-5.25	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.6	69.6	67.8	61.7	70.4	71.0	
Medium Trucks:	64.2	63.5	57.2	55.6	64.1	64.3	
Heavy Trucks:	64.6	64.0	55.0	56.2	64.6	64.7	
Vehicle Noise:	72.3	71.4	68.4	63.6	72.1	72.6	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	104	224	482	1,039
CNEL:	112	240	518	1,116

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: University Drive  
 Road Segment: Culver Drive to Golden Glow

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 41,770 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,446 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.96	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.27	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.23	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.9	69.9	68.1	62.0	70.7	71.3
Medium Trucks:	64.5	63.8	57.5	55.9	64.4	64.6
Heavy Trucks:	64.9	64.3	55.3	56.5	64.9	65.0
Vehicle Noise:	72.6	71.7	68.7	63.9	72.4	72.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	195	421	906
CNEL:	97	210	452	974

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: University Drive  
 Road Segment: Yale Avenue to Ridgeline

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,097 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,061 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.45	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.79	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.74	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.4	69.3	67.6	61.5	70.1	70.8	
Medium Trucks:	64.0	63.3	56.9	55.4	63.9	64.1	
Heavy Trucks:	64.4	63.8	54.8	56.0	64.4	64.5	
Vehicle Noise:	72.1	71.2	68.1	63.4	71.9	72.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	180	389	837
CNEL:	90	194	418	900

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: University Drive  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 59,053 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,872 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.47	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-12.77	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-16.73	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.7	67.9	61.9	70.5	71.1
Medium Trucks:	64.3	63.7	57.3	55.8	64.2	64.5
Heavy Trucks:	64.8	64.2	55.1	56.4	64.7	64.9
Vehicle Noise:	72.5	71.6	68.5	63.7	72.3	72.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	119	256	553	1,190
CNEL:	128	276	594	1,279

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: University Drive  
 Road Segment: Mesa to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,247 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,733 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.31	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-13.93	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.88	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.6	71.5	69.7	63.7	72.3	72.9	
Medium Trucks:	66.1	65.5	59.1	57.6	66.0	66.3	
Heavy Trucks:	66.6	66.0	56.9	58.2	66.5	66.7	
Vehicle Noise:	74.3	73.3	70.3	65.5	74.1	74.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	112	241	520	1,120
CNEL:	120	259	559	1,204

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative	Project Name: Irvine GP
Road Name: University Drive	Job Number: 15937
Road Segment: MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,232 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 3,649 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 50 mph																					
Near/Far Lane Distance: 74 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 60.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 60.0 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 47.329																				
Left View: -90.0 degrees	Medium Trucks: 47.244																				
Right View: 90.0 degrees	Heavy Trucks: 47.329																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.21	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.03	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.98	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.5	71.4	69.6	63.6	72.2	72.8
Medium Trucks:	66.0	65.4	59.0	57.5	65.9	66.2
Heavy Trucks:	66.5	65.9	56.8	58.1	66.4	66.6
Vehicle Noise:	74.2	73.2	70.2	65.4	74.0	74.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	238	512	1,104
CNEL:	119	255	550	1,186

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: University Drive  
 Road Segment: California Avenue to Mesa

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,280 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,653 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.22	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.02	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.98	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.5	71.4	69.6	63.6	72.2	72.8
Medium Trucks:	66.0	65.4	59.0	57.5	65.9	66.2
Heavy Trucks:	66.5	65.9	56.8	58.1	66.4	66.6
Vehicle Noise:	74.2	73.3	70.2	65.4	74.0	74.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	238	513	1,104
CNEL:	119	256	551	1,186

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: University Drive  
 Road Segment: Campus Drive to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,107 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,061 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.45	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.79	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.74	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.3	61.6	55.3	53.7	62.2	62.4
Heavy Trucks:	62.7	62.2	53.1	54.4	62.7	62.8
Vehicle Noise:	70.5	69.5	66.5	61.7	70.3	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	188	405	873
CNEL:	94	202	436	938



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative Project Name: Irvine GP  
 Road Name: University Drive Job Number: 15937  
 Road Segment: SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,626 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,619 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 42.814				
Road Grade: 0.0%	Medium Trucks: 42.720				
Left View: -90.0 degrees	Heavy Trucks: 42.814				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.32	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-17.55	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-21.51	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.8	60.7	69.3	69.9
Medium Trucks:	63.2	62.5	56.1	54.6	63.1	63.3
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7
Vehicle Noise:	71.3	70.4	67.3	62.5	71.1	71.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	275	591
CNEL:	64	137	295	635

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative Project Name: Irvine GP  
 Road Name: University Drive Job Number: 15937  
 Road Segment: SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,890 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 2,713 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 50 mph																					
Near/Far Lane Distance: 78 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 84.0 feet	Heavy Trucks: 8.006 <span style="float:right">Grade Adjustment: 0.0</span>																				
Centerline Dist. to Observer: 84.0 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet																					
Road Grade: 0.0%																					
Left View: -90.0 degrees																					
Right View: 90.0 degrees																					
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458																				
	Medium Trucks: 74.404																				
	Heavy Trucks: 74.458																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.93	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.31	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.27	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.2	65.4	59.3	68.0	68.6
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	69.9	69.0	66.0	61.2	69.7	70.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	374	806
CNEL:	87	187	402	866

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: University Drive  
 Road Segment: San Joaquin to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,341 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,503 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.58	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.66	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.62	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.8	65.1	59.0	67.6	68.2
Medium Trucks:	61.4	60.8	54.4	52.9	61.3	61.6
Heavy Trucks:	61.9	61.3	52.2	53.5	61.8	62.0
Vehicle Noise:	69.6	68.7	65.6	60.8	69.4	69.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	165	354	764
CNEL:	82	177	381	820

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: University Drive  
 Road Segment: Harvard Avenue to San Joaquin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 30,225 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,494 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.56	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.68	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.63	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.8	65.0	59.0	67.6	68.2
Medium Trucks:	61.4	60.8	54.4	52.9	61.3	61.5
Heavy Trucks:	61.8	61.3	52.2	53.5	61.8	62.0
Vehicle Noise:	69.6	68.6	65.6	60.8	69.4	69.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	164	354	762
CNEL:	82	176	380	818

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Valley Oak Drive  
 Road Segment: Hawkcreek to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,886 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,146 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.82	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.01	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.1	65.1	63.3	57.3	65.9	66.5	
Medium Trucks:	59.7	59.0	52.7	51.1	59.6	59.8	
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2	
Vehicle Noise:	67.8	66.9	63.9	59.1	67.6	68.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	94	202	435
CNEL:	47	101	217	467

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Valley Oak Drive  
 Road Segment: Irvine Center Drive to Oak Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,395 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,023 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 42.814				
Road Grade: 0.0%		Medium Trucks: 42.720				
Left View: -90.0 degrees		Heavy Trucks: 42.814				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.31	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-19.55	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-23.51	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.5	64.8	58.7	67.3	67.9
Medium Trucks:	61.2	60.5	54.1	52.6	61.1	61.3
Heavy Trucks:	61.6	61.0	52.0	53.2	61.6	61.7
Vehicle Noise:	69.3	68.4	65.3	60.5	69.1	69.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	94	202	435
CNEL:	47	101	217	468

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Valley Oak Drive  
 Road Segment: Barranca Parkway to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,075 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 914 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.80	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-20.04	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.99	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.1	62.3	56.3	64.9	65.5
Medium Trucks:	58.7	58.1	51.7	50.1	58.6	58.8
Heavy Trucks:	59.1	58.6	49.5	50.8	59.1	59.2
Vehicle Noise:	66.9	65.9	62.9	58.1	66.7	67.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	81	174	374
CNEL:	40	87	186	402

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Valley Oak Drive  
 Road Segment: Alton Parkway to Hawkcreek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,689 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 552 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.99	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.18	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.0	61.9	60.1	54.1	62.7	63.3
Medium Trucks:	56.5	55.9	49.5	48.0	56.4	56.6
Heavy Trucks:	56.9	56.4	47.3	48.6	56.9	57.1
Vehicle Noise:	64.7	63.7	60.7	55.9	64.5	64.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	124	267
CNEL:	29	62	133	287



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Marriott to Morse Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,254 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,908 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.69	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.55	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.51	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.8	66.1	60.0	68.6	69.2
Medium Trucks:	62.7	62.0	55.6	54.1	62.5	62.8
Heavy Trucks:	63.5	62.9	53.9	55.1	63.5	63.6
Vehicle Noise:	70.7	69.8	66.7	62.0	70.5	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	146	315	679
CNEL:	73	157	338	729

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Michelson Drive to Quartz

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,068 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,811 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.70	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.66	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6
Heavy Trucks:	63.3	62.8	53.7	55.0	63.3	63.5
Vehicle Noise:	70.6	69.7	66.5	61.9	70.4	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	143	308	664
CNEL:	71	153	331	712

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 33,488 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,763 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.46	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.78	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.73	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.8	59.8	68.4	69.0	
Medium Trucks:	62.4	61.8	55.4	53.9	62.3	62.5	
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4	
Vehicle Noise:	70.5	69.6	66.5	61.8	70.3	70.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	141	305	656
CNEL:	70	152	327	704

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 41,190 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,398 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.36	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.88	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	84.25	-17.83	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.2	65.5	59.4	68.0	68.6
Medium Trucks:	62.0	61.4	55.0	53.5	61.9	62.2
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0
Vehicle Noise:	70.1	69.2	66.1	61.4	69.9	70.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	344	742
CNEL:	80	172	369	796

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Main Street to Anchor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,693 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,697 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.36	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.88	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.84	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.7	59.7	68.3	68.9
Medium Trucks:	62.3	61.7	55.3	53.8	62.2	62.4
Heavy Trucks:	63.2	62.6	53.5	54.8	63.2	63.3
Vehicle Noise:	70.4	69.5	66.4	61.7	70.2	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	139	300	646
CNEL:	69	149	322	693

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Anchor to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,540 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,602 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.20	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.04	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.99	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.4	65.6	59.5	68.2	68.8
Medium Trucks:	62.2	61.5	55.1	53.6	62.1	62.3
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	70.3	69.3	66.2	61.5	70.1	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	293	631
CNEL:	68	146	314	677

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Morse to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,827 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,461 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.96	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.28	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.23	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.1	65.3	59.3	67.9	68.5
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.0
Heavy Trucks:	62.8	62.2	53.1	54.4	62.8	62.9
Vehicle Noise:	70.0	69.1	66.0	61.3	69.8	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	282	608
CNEL:	65	140	303	652

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Martin to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,714 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,121 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.92	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.88	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.5	66.5	64.7	58.6	67.3	67.9	
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4	
Heavy Trucks:	62.1	61.5	52.5	53.8	62.1	62.2	
Vehicle Noise:	69.4	68.5	65.3	60.6	69.2	69.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	119	255	550
CNEL:	59	127	274	590



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Campus Drive to Martin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,190 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,078 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.01	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.97	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.4	64.6	58.6	67.2	67.8
Medium Trucks:	61.2	60.5	54.2	52.6	61.1	61.3
Heavy Trucks:	62.0	61.5	52.4	53.7	62.0	62.1
Vehicle Noise:	69.3	68.4	65.2	60.5	69.1	69.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	117	252	543
CNEL:	58	125	270	582

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Dupont Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,012 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,063 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.04	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.00	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.3	64.6	58.5	67.1	67.8
Medium Trucks:	61.2	60.5	54.1	52.6	61.0	61.3
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	69.2	68.3	65.2	60.5	69.1	69.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	251	540
CNEL:	58	125	269	580

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Jeffrey Road to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,800 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,871 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.63	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.61	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.56	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	63.4	62.9	53.8	55.1	63.4	63.6
Vehicle Noise:	70.7	69.8	66.6	61.9	70.5	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	145	313	673
CNEL:	72	156	335	722

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Myford Road to Jamboree Road SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,977 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,896 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height:	0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.83	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.41	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.37	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	66.0	64.2	58.2	66.8	67.4
Medium Trucks:	60.8	60.1	53.8	52.2	60.7	60.9
Heavy Trucks:	61.6	61.1	52.0	53.3	61.6	61.7
Vehicle Noise:	68.9	68.0	64.8	60.1	68.7	69.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	110	237	511
CNEL:	55	118	254	548

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Walnut Avenue  
 Road Segment: The Mall Street to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,348 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,761 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.51	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.73	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.69	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.8	66.5	67.1
Medium Trucks:	60.5	59.8	53.4	51.9	60.4	60.6
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4
Vehicle Noise:	68.6	67.6	64.5	59.8	68.4	68.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	105	226	486
CNEL:	52	112	242	522

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Harvard Avenue to The Mall Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,283 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,756 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.74	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.70	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.6	63.9	57.8	66.4	67.1
Medium Trucks:	60.5	59.8	53.4	51.9	60.3	60.6
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4
Vehicle Noise:	68.5	67.6	64.5	59.8	68.4	68.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	105	225	485
CNEL:	52	112	242	521

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Franciscan Street to Ravenwood Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,627 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,619 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.05	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	60.1	59.4	53.1	51.5	60.0	60.2
Heavy Trucks:	61.0	60.4	51.3	52.6	60.9	61.1
Vehicle Noise:	68.2	67.3	64.1	59.5	68.0	68.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	99	213	460
CNEL:	49	106	229	493

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Ravenwood Street to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,787 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,632 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.02	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.4	65.3	63.6	57.5	66.1	66.7	
Medium Trucks:	60.1	59.5	53.1	51.6	60.0	60.3	
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1	
Vehicle Noise:	68.2	67.3	64.2	59.5	68.0	68.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	100	215	462
CNEL:	50	107	230	496



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Culver Drive to Franciscan Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,171 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,582 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.04	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.20	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.15	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.3	65.2	63.4	57.4	66.0	66.6	
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1	
Heavy Trucks:	60.9	60.3	51.2	52.5	60.8	61.0	
Vehicle Noise:	68.1	67.2	64.0	59.4	67.9	68.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	98	210	453
CNEL:	49	105	225	485

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Peters Canyon Road to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,108 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,154 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.38	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.86	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.81	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.9	63.1	57.1	65.7	66.3
Medium Trucks:	59.7	59.0	52.7	51.1	59.6	59.8
Heavy Trucks:	60.5	60.0	50.9	52.2	60.5	60.7
Vehicle Noise:	67.8	66.9	63.7	59.0	67.6	68.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	269	580
CNEL:	62	134	289	622

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative Project Name: Irvine GP  
 Road Name: Walnut Avenue Job Number: 15937  
 Road Segment: Jamboree Road NB Off-Ramp to Peters Canyon Road

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,075 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,069 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.03	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.99	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.8	64.7	62.9	56.9	65.5	66.1
Medium Trucks:	59.5	58.9	52.5	50.9	59.4	59.6
Heavy Trucks:	60.4	59.8	50.7	52.0	60.3	60.5
Vehicle Noise:	67.6	66.7	63.5	58.9	67.4	67.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	122	262	565
CNEL:	61	130	281	606

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Yale Avenue to Kazan Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,945 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,233 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.04	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.28	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.24	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.2	64.1	62.3	56.3	64.9	65.5	
Medium Trucks:	58.9	58.3	51.9	50.4	58.8	59.0	
Heavy Trucks:	59.8	59.2	50.1	51.4	59.8	59.9	
Vehicle Noise:	67.0	66.1	63.0	58.3	66.8	67.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	83	178	383
CNEL:	41	89	191	411

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Wisteria to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,674 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,211 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.12	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.36	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.32	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.0	62.3	56.2	64.8	65.4
Medium Trucks:	58.9	58.2	51.8	50.3	58.7	59.0
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8
Vehicle Noise:	66.9	66.0	62.9	58.2	66.7	67.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	176	379
CNEL:	41	88	189	406

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative Project Name: Irvine GP  
 Road Name: Warner Avenue Job Number: 15937  
 Road Segment: Jamboree Road SB Off-ramp to Construction North

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>  Average Daily Traffic (Adt): 29,278 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,415 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	<b>Site Conditions (Hard = 10, Soft = 15)</b>  Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>  Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<b>Vehicle Mix</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table> <b>Noise Source Elevations (in feet)</b> Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Lane Equivalent Distance (in feet)</b> Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.88	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.36	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.32	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.3	59.2	67.8	68.4
Medium Trucks:	61.9	61.2	54.8	53.3	61.7	62.0
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	69.9	69.0	65.9	61.2	69.7	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	279	600
CNEL:	64	139	299	644

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Warner Avenue  
 Road Segment: Construction North to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,424 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,685 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.31	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.92	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.88	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.5	65.5	63.7	57.6	66.3	66.9	
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4	
Heavy Trucks:	61.1	60.5	51.5	52.8	61.1	61.2	
Vehicle Noise:	68.4	67.5	64.3	59.6	68.2	68.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	102	219	472
CNEL:	51	109	235	506

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Warner Avenue  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,244 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,175 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.49	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.44	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.0	63.9	62.1	56.1	64.7	65.3	
Medium Trucks:	58.7	58.1	51.7	50.1	58.6	58.8	
Heavy Trucks:	59.6	59.0	49.9	51.2	59.5	59.7	
Vehicle Noise:	66.8	65.9	62.7	58.1	66.6	67.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	80	172	371
CNEL:	40	86	185	398



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Warner Avenue  
 Road Segment: Santa Ynez to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,546 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 953 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.16	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.40	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.36	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.1	63.0	61.2	55.2	63.8	64.4	
Medium Trucks:	57.8	57.1	50.8	49.2	57.7	57.9	
Heavy Trucks:	58.7	58.1	49.0	50.3	58.6	58.8	
Vehicle Noise:	65.9	65.0	61.8	57.2	65.7	66.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	70	150	323
CNEL:	35	75	161	346

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Warner Avenue  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	10,716 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	884 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		57.786		
Left View:	-90.0 degrees	Medium Trucks:		57.717		
Right View:	90.0 degrees	Heavy Trucks:		57.787		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.68	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.7	62.7	60.9	54.8	63.5	64.1
Medium Trucks:	57.5	56.8	50.5	48.9	57.4	57.6
Heavy Trucks:	58.3	57.7	48.7	50.0	58.3	58.4
Vehicle Noise:	65.6	64.7	61.5	56.8	65.4	65.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	66	143	307
CNEL:	33	71	153	329

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: West Yale Loop  
 Road Segment: Alton Parkway to Blue Lake North

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,475 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	782 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.51	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.75	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.70	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.8	60.7	58.9	52.9	61.5	62.1
Medium Trucks:	55.7	55.1	48.7	47.2	55.6	55.8
Heavy Trucks:	57.0	56.5	47.4	48.7	57.0	57.2
Vehicle Noise:	63.8	62.9	59.6	55.0	63.6	64.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	233
CNEL:	25	54	116	250

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: West Yale Loop  
 Road Segment: Eagle Run to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,135 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	754 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.67	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.91	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.86	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.6	60.5	58.8	52.7	61.3	61.9
Medium Trucks:	55.6	54.9	48.5	47.0	55.5	55.7
Heavy Trucks:	56.9	56.3	47.3	48.5	56.9	57.0
Vehicle Noise:	63.6	62.7	59.4	54.9	63.4	63.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	49	106	228
CNEL:	24	52	113	244

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: West Yale Loop  
 Road Segment: Thunder Run to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,371 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 773 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.75	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.7	60.6	58.9	52.8	61.4	62.1	
Medium Trucks:	55.7	55.0	48.6	47.1	55.6	55.8	
Heavy Trucks:	57.0	56.4	47.4	48.6	57.0	57.1	
Vehicle Noise:	63.7	62.8	59.5	55.0	63.5	64.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	107	231
CNEL:	25	53	115	248

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: West Yale Loop  
 Road Segment: Main Street to Timber Run

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,206 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	594 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.70	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.94	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.89	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.6	59.5	57.7	51.7	60.3	60.9
Medium Trucks:	54.5	53.9	47.5	46.0	54.4	54.7
Heavy Trucks:	55.9	55.3	46.2	47.5	55.8	56.0
Vehicle Noise:	62.6	61.7	58.4	53.9	62.4	62.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	42	90	194
CNEL:	21	45	97	208

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: West Yale Loop  
 Road Segment: Yale Avenue to Shorebird

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,821 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 645 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.58	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.54	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.9	59.9	58.1	52.0	60.7	61.3	
Medium Trucks:	54.9	54.2	47.9	46.3	54.8	55.0	
Heavy Trucks:	56.2	55.6	46.6	47.8	56.2	56.3	
Vehicle Noise:	62.9	62.0	58.8	54.2	62.7	63.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	44	95	205
CNEL:	22	47	102	220

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: West Yale Loop  
 Road Segment: Warner Avenue to Stonecreek South

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,943 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 573 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.86	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.05	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.4	59.3	57.6	51.5	60.1	60.7	
Medium Trucks:	54.4	53.7	47.3	45.8	54.3	54.5	
Heavy Trucks:	55.7	55.1	46.1	47.3	55.7	55.8	
Vehicle Noise:	62.4	61.5	58.2	53.7	62.2	62.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	41	88	190
CNEL:	20	44	94	203



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: West Yale Loop  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,571 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 542 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.29	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.2	59.1	57.3	51.3	59.9	60.5
Medium Trucks:	54.1	53.5	47.1	45.6	54.0	54.3
Heavy Trucks:	55.5	54.9	45.8	47.1	55.4	55.6
Vehicle Noise:	62.2	61.3	58.0	53.5	62.0	62.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	85	183
CNEL:	20	42	91	196

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: West Yale Loop  
 Road Segment: Stonecreek North to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,771 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	559 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.97	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.21	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.16	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.3	59.2	57.5	51.4	60.0	60.6
Medium Trucks:	54.3	53.6	47.2	45.7	54.2	54.4
Heavy Trucks:	55.6	55.0	46.0	47.2	55.6	55.7
Vehicle Noise:	62.3	61.4	58.1	53.6	62.1	62.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	40	87	186
CNEL:	20	43	93	200

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: West Yale Loop  
 Road Segment: Birdsong to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,532 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	539 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.12	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.36	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.32	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.1	59.1	57.3	51.3	59.9	60.5
Medium Trucks:	54.1	53.4	47.1	45.5	54.0	54.2
Heavy Trucks:	55.4	54.8	45.8	47.1	55.4	55.5
Vehicle Noise:	62.1	61.3	58.0	53.4	62.0	62.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	84	182
CNEL:	19	42	90	195

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Westwood  
 Road Segment: Yorktown to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,042 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	498 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-3.88	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-21.12	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-25.08	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.1	60.0	58.2	52.2	60.8	61.4
Medium Trucks:	55.3	54.6	48.2	46.7	55.2	55.4
Heavy Trucks:	57.1	56.5	47.5	48.8	57.1	57.2
Vehicle Noise:	63.3	62.4	59.0	54.6	63.1	63.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	13	28	60	130
CNEL:	14	30	64	139

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Westwood  
 Road Segment: Bryan Avenue to Leaf

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,912 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	323 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.77	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-23.01	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-26.97	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	59.2	58.1	56.3	50.3	58.9	59.5	
Medium Trucks:	53.4	52.7	46.4	44.8	53.3	53.5	
Heavy Trucks:	55.2	54.6	45.6	46.9	55.2	55.3	
Vehicle Noise:	61.4	60.5	57.1	52.7	61.2	61.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	10	21	45	97
CNEL:	10	22	48	104

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Yale Avenue  
 Road Segment: Deerfield Avenue to Winvale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,497 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 866 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.58	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-19.81	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-23.77	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.5	65.5	63.7	57.6	66.3	66.9	
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4	
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2	
Vehicle Noise:	68.4	67.4	64.3	59.6	68.2	68.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	131	283
CNEL:	30	65	141	303

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Yale Avenue  
 Road Segment: Hicks Canyon Drive to Meadowood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,806 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 644 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.86	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-21.10	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-25.06	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.2	62.4	56.3	65.0	65.6
Medium Trucks:	59.0	58.3	52.0	50.4	58.9	59.1
Heavy Trucks:	59.8	59.2	50.2	51.5	59.8	59.9
Vehicle Noise:	67.1	66.2	63.0	58.3	66.9	67.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	232
CNEL:	25	54	116	249

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Yale Avenue  
 Road Segment: Walnut Avenue to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,894 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,229 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 32.140 Medium Trucks: 32.016 Heavy Trucks: 32.141																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.06	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-18.29	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	84.25	-22.25	2.78	-1.20	-5.56	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.0	67.9	66.1	60.1	68.7	69.3	
Medium Trucks:	62.8	62.1	55.7	54.2	62.6	62.9	
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7	
Vehicle Noise:	70.8	69.9	66.8	62.1	70.6	71.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	95	204	440
CNEL:	47	102	219	472



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Yale Avenue  
 Road Segment: Roosevelt to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,285 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,179 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.43	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.0	63.9	62.1	56.1	64.7	65.3
Medium Trucks:	58.7	58.1	51.7	50.2	58.6	58.8
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7
Vehicle Noise:	66.8	65.9	62.8	58.1	66.6	67.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	80	173	372
CNEL:	40	86	185	399

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Yale Avenue  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,571 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,120 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.46	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.70	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.65	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.8	63.7	61.9	55.9	64.5	65.1	
Medium Trucks:	58.5	57.8	51.5	49.9	58.4	58.6	
Heavy Trucks:	59.4	58.8	49.7	51.0	59.3	59.5	
Vehicle Noise:	66.6	65.7	62.5	57.9	66.4	66.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	167	359
CNEL:	39	83	179	386

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Yale Avenue  
 Road Segment: West Yale Loop to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	12,463 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	1,028 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.83	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.02	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.3	61.6	55.5	64.1	64.7
Medium Trucks:	58.1	57.5	51.1	49.6	58.0	58.3
Heavy Trucks:	59.0	58.4	49.4	50.6	59.0	59.1
Vehicle Noise:	66.2	65.3	62.2	57.5	66.0	66.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	73	158	340
CNEL:	36	78	169	364

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Yale Avenue  
 Road Segment: Winvale Avenue to Karen Ann Lane

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,439 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 861 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.84	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.79	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.6	62.6	60.8	54.7	63.4	64.0	
Medium Trucks:	57.4	56.7	50.3	48.8	57.3	57.5	
Heavy Trucks:	58.2	57.6	48.6	49.8	58.2	58.3	
Vehicle Noise:	65.4	64.5	61.4	56.7	65.3	65.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	140	302
CNEL:	32	70	150	324

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Yale Avenue  
 Road Segment: Karen Ann Lane to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	10,439 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	861 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.84	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.79	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.6	62.6	60.8	54.7	63.4	64.0
Medium Trucks:	57.4	56.7	50.3	48.8	57.3	57.5
Heavy Trucks:	58.2	57.6	48.6	49.8	58.2	58.3
Vehicle Noise:	65.4	64.5	61.4	56.7	65.3	65.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	140	302
CNEL:	32	70	150	324

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Yale Avenue  
 Road Segment: Trabuco Road to Southwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,232 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 844 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.69	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.93	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.88	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.5	62.5	60.7	54.6	63.3	63.9
Medium Trucks:	57.3	56.6	50.3	48.7	57.2	57.4
Heavy Trucks:	58.1	57.5	48.5	49.8	58.1	58.2
Vehicle Noise:	65.4	64.5	61.3	56.6	65.2	65.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	298
CNEL:	32	69	148	319

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Conservative  
 Road Name: Yale Avenue  
 Road Segment: Southwood to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,703 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 801 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.92	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.16	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.11	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.3	62.2	60.5	54.4	63.0	63.6	
Medium Trucks:	57.1	56.4	50.0	48.5	56.9	57.2	
Heavy Trucks:	57.9	57.3	48.3	49.5	57.9	58.0	
Vehicle Noise:	65.1	64.2	61.1	56.4	64.9	65.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	62	133	287
CNEL:	31	66	143	308

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Yale Avenue  
 Road Segment: Northwood to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,106 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	751 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.39	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.0	62.0	60.2	54.1	62.8	63.4
Medium Trucks:	56.8	56.1	49.7	48.2	56.7	56.9
Heavy Trucks:	57.6	57.0	48.0	49.2	57.6	57.7
Vehicle Noise:	64.9	63.9	60.8	56.1	64.7	65.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	59	128	276
CNEL:	30	64	137	296



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Yale Avenue  
 Road Segment: Bryan Avenue to Monticello

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,826 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	728 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.33	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.57	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.52	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.9	61.8	60.1	54.0	62.6	63.2
Medium Trucks:	56.6	56.0	49.6	48.1	56.5	56.8
Heavy Trucks:	57.5	56.9	47.9	49.1	57.5	57.6
Vehicle Noise:	64.7	63.8	60.7	56.0	64.5	65.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	125	270
CNEL:	29	62	134	289

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Yale Avenue  
 Road Segment: Irvine Boulevard to Park Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,442 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	614 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.07	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.31	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.26	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.1	61.1	59.3	53.3	61.9	62.5
Medium Trucks:	55.9	55.2	48.9	47.3	55.8	56.0
Heavy Trucks:	56.7	56.2	47.1	48.4	56.7	56.9
Vehicle Noise:	64.0	63.1	59.9	55.2	63.8	64.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	112	241
CNEL:	26	56	120	258

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Yale Avenue  
 Road Segment: University Drive to Royce

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,105 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	339 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	50.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 42.814				
Road Grade:	0.0%	Medium Trucks: 42.720				
Left View:	-90.0 degrees	Heavy Trucks: 42.814				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-6.65	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	79.45	-23.89	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	84.25	-27.85	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.5	60.5	58.7	52.6	61.3	61.9
Medium Trucks:	55.3	54.6	48.2	46.7	55.2	55.4
Heavy Trucks:	56.1	55.5	46.5	47.7	56.1	56.2
Vehicle Noise:	63.4	62.4	59.3	54.6	63.2	63.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	38	81	175
CNEL:	19	40	87	188

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Conservative  
 Road Name: Yale Court  
 Road Segment: Arborwood to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,458 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	533 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-2.13	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-19.37	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-23.33	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.2	56.2	54.4	48.4	57.0	57.6
Medium Trucks:	52.1	51.4	45.0	43.5	52.0	52.2
Heavy Trucks:	55.3	54.7	45.7	46.9	55.3	55.4
Vehicle Noise:	60.1	59.3	55.4	51.5	60.0	60.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	80
CNEL:	9	18	40	85

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Ada  
 Road Segment: Barranca Parway to Marine Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,117 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,907 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 37.138				
Road Grade: 0.0%		Medium Trucks: 37.030				
Left View: -90.0 degrees		Heavy Trucks: 37.139				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.36	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-15.87	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-19.83	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.7	59.6	68.2	68.9
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9
Vehicle Noise:	70.5	69.6	66.3	61.8	70.3	70.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	85	183	395
CNEL:	42	91	196	423

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Ada  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,720 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,617 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.74	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-14.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-18.46	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.0	65.9	64.2	58.1	66.7	67.3	
Medium Trucks:	61.0	60.3	53.9	52.4	60.9	61.1	
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4	
Vehicle Noise:	69.0	68.1	64.8	60.3	68.8	69.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	112	242	522
CNEL:	56	120	259	559

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Enterprise to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 81,648 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 6,736 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	5.88	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-11.36	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-15.32	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.2	71.1	69.4	63.3	71.9	72.5	
Medium Trucks:	65.7	65.1	58.7	57.2	65.6	65.9	
Heavy Trucks:	66.2	65.6	56.5	57.8	66.1	66.3	
Vehicle Noise:	73.9	73.0	69.9	65.1	73.7	74.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	148	318	686	1,478
CNEL:	159	342	737	1,587

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: I-5 NB Off-Ramp to Technology Drive West

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 86,442 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 7,131 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	6.12	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-11.12	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-15.07	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.8	71.8	70.0	64.0	72.6	73.2
Medium Trucks:	66.4	65.7	59.4	57.8	66.3	66.5
Heavy Trucks:	66.8	66.2	57.2	58.4	66.8	66.9
Vehicle Noise:	74.5	73.6	70.6	65.8	74.3	74.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	156	335	723	1,557
CNEL:	167	360	776	1,673



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: East Yale Loop to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,830 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,708 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.92	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.32	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.28	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	68.8	67.0	61.0	69.6	70.2
Medium Trucks:	63.4	62.8	56.4	54.9	63.3	63.6
Heavy Trucks:	63.9	63.3	54.2	55.5	63.8	64.0
Vehicle Noise:	71.6	70.7	67.6	62.8	71.4	71.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	358	772
CNEL:	83	179	385	829

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Gateway Boulevard to Enterprise

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 49,714 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,101 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.72	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.52	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.47	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	69.0	67.2	61.1	69.8	70.4
Medium Trucks:	63.6	62.9	56.6	55.0	63.5	63.7
Heavy Trucks:	64.0	63.4	54.4	55.6	64.0	64.1
Vehicle Noise:	71.7	70.8	67.8	63.0	71.5	72.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	229	493	1,061
CNEL:	114	246	529	1,140

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Jeffrey Road to Royal Oak

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,627 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,197 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.18	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	67.9	66.1	60.1	68.7	69.3
Medium Trucks:	62.5	61.9	55.5	54.0	62.4	62.6
Heavy Trucks:	62.9	62.4	53.3	54.6	62.9	63.1
Vehicle Noise:	70.7	69.7	66.7	61.9	70.5	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	145	312	671
CNEL:	72	155	335	721

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Daimler Street to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,127 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,073 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.76	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.44	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.7	65.9	59.8	68.5	69.1
Medium Trucks:	62.3	61.6	55.2	53.7	62.2	62.4
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.4	69.5	66.4	61.7	70.2	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	139	300	646
CNEL:	69	149	322	694

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,181 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,077 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.77	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.47	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.43	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.7	65.9	59.8	68.5	69.1
Medium Trucks:	62.3	61.6	55.3	53.7	62.2	62.4
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.4	69.5	66.5	61.7	70.2	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	139	300	647
CNEL:	69	150	322	695

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: West Yale Loop to Lake Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,249 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,083 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.78	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.46	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.42	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.3	61.6	55.3	53.7	62.2	62.4
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.4	69.5	66.5	61.7	70.2	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	140	301	648
CNEL:	70	150	323	696

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Technology Drive West to Ada

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 52,629 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,342 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.97	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.27	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.23	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.6	67.9	61.8	70.4	71.0
Medium Trucks:	64.2	63.6	57.2	55.7	64.1	64.4
Heavy Trucks:	64.7	64.1	55.0	56.3	64.6	64.8
Vehicle Noise:	72.4	71.5	68.4	63.6	72.2	72.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	112	241	519	1,118
CNEL:	120	259	558	1,201

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Creek Road to East Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,987 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,061 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.73	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.51	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.46	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.9	59.8	68.4	69.0
Medium Trucks:	62.3	61.6	55.2	53.7	62.1	62.4
Heavy Trucks:	62.7	62.1	53.0	54.3	62.7	62.8
Vehicle Noise:	70.4	69.5	66.4	61.6	70.2	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	139	299	643
CNEL:	69	149	321	691



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Red Hill Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,832 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,049 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.71	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.53	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.49	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.8	59.8	68.4	69.0	
Medium Trucks:	62.2	61.6	55.2	53.7	62.1	62.3	
Heavy Trucks:	62.6	62.1	53.0	54.3	62.6	62.8	
Vehicle Noise:	70.4	69.4	66.4	61.6	70.2	70.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	138	297	641
CNEL:	69	148	319	688

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Lake Road to Creek Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,753 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,960 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.51	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.73	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.68	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.4	65.6	59.6	68.2	68.8	
Medium Trucks:	62.0	61.4	55.0	53.5	61.9	62.2	
Heavy Trucks:	62.5	61.9	52.8	54.1	62.4	62.6	
Vehicle Noise:	70.2	69.2	66.2	61.4	70.0	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	134	289	622
CNEL:	67	144	310	668

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Telemetry to Banting

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,832 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,966 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.71	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.67	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.4	65.7	59.6	68.2	68.8	
Medium Trucks:	62.1	61.4	55.0	53.5	61.9	62.2	
Heavy Trucks:	62.5	61.9	52.8	54.1	62.4	62.6	
Vehicle Noise:	70.2	69.3	66.2	61.4	70.0	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	134	289	623
CNEL:	67	144	311	670

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Irvine Boulevard to Commercentre

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 38,199 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,151 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.58	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.66	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.62	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.9	67.8	66.1	60.0	68.6	69.2	
Medium Trucks:	62.4	61.8	55.4	53.9	62.3	62.6	
Heavy Trucks:	62.9	62.3	53.2	54.5	62.8	63.0	
Vehicle Noise:	70.6	69.7	66.6	61.8	70.4	70.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	192	413	890
CNEL:	96	206	444	957

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Jenner to Telemetry

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,455 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,935 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.46	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.78	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.74	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.4	65.6	59.5	68.2	68.8
Medium Trucks:	62.0	61.3	54.9	53.4	61.9	62.1
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	70.1	69.2	66.2	61.4	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	286	617
CNEL:	66	143	308	663

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Irvine Center Drive to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 42,235 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,484 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.01	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.23	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.18	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.3	66.5	60.4	69.1	69.7
Medium Trucks:	62.9	62.2	55.8	54.3	62.8	63.0
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4
Vehicle Noise:	71.0	70.1	67.1	62.3	70.8	71.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	95	205	442	952
CNEL:	102	220	475	1,023

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Sand Canyon Avenue to Hospital

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 37,175 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,067 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.46	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.78	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.74	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.7	70.7	68.9	62.8	71.5	72.1
Medium Trucks:	65.3	64.6	58.3	56.7	65.2	65.4
Heavy Trucks:	65.7	65.1	56.1	57.3	65.7	65.8
Vehicle Noise:	73.4	72.5	69.5	64.7	73.2	73.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	212	456	983
CNEL:	106	227	490	1,056

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Laguna Canyon Road to Jenner

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,971 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,895 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.83	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.3	65.5	59.4	68.1	68.7
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	282	608
CNEL:	65	141	303	653



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

**Scenario:** Cumulative Conservative      **Project Name:** Irvine GP  
**Road Name:** Alton Parkway              **Job Number:** 15937  
**Road Segment:** Technology Drive East to Barranca Pkwy/Muirlands Blvd

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 41,733 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,443 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos:	77.5%	12.9%	9.6%	97.42%
	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
	<b>Noise Source Elevations (in feet)</b>				
	Autos:	2.000			
	Medium Trucks:	4.000			
	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos:	74.458			
	Medium Trucks:	74.404			
	Heavy Trucks:	74.458			

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.96	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.28	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.23	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.2	66.4	60.4	69.0	69.6
Medium Trucks:	62.8	62.2	55.8	54.3	62.7	62.9
Heavy Trucks:	63.2	62.7	53.6	54.9	63.2	63.4
Vehicle Noise:	71.0	70.0	67.0	62.2	70.8	71.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	94	203	438	945
CNEL:	101	219	471	1,015

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Royal Oak to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,072 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,821 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.04	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.00	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.1	65.3	59.3	67.9	68.5
Medium Trucks:	61.7	61.0	54.7	53.1	61.6	61.8
Heavy Trucks:	62.1	61.5	52.5	53.8	62.1	62.2
Vehicle Noise:	69.8	68.9	65.9	61.1	69.6	70.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	128	275	592
CNEL:	64	137	295	636

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Banting to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,772 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,796 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.13	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.06	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.3	59.2	67.8	68.4
Medium Trucks:	61.7	61.0	54.6	53.1	61.5	61.8
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	69.8	68.9	65.8	61.0	69.6	70.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	126	272	587
CNEL:	63	136	293	631

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative Project Name: Irvine GP  
 Road Name: Alton Parkway Job Number: 15937  
 Road Segment: Barranca Pkwy/Muirlands Blvd to Jeronimo Road

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>  Average Daily Traffic (Adt): 39,264 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,239 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	<b>Site Conditions (Hard = 10, Soft = 15)</b>  Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>  Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<b>Vehicle Mix</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table> <b>Noise Source Elevations (in feet)</b> Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Lane Equivalent Distance (in feet)</b> Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.70	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.54	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.50	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.0	67.9	66.2	60.1	68.7	69.3	
Medium Trucks:	62.6	61.9	55.5	54.0	62.4	62.7	
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1	
Vehicle Noise:	70.7	69.8	66.7	62.0	70.5	71.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	195	421	907
CNEL:	97	210	452	974

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Ada to Technology Drive East

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,976 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,051 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.44	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.80	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.76	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.3	61.6	55.3	53.7	62.2	62.4
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.4	69.5	66.5	61.7	70.2	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	188	404	871
CNEL:	94	202	435	936

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,473 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,689 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.13	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.37	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.33	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.8	65.0	58.9	67.6	68.2
Medium Trucks:	61.4	60.7	54.4	52.8	61.3	61.5
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	69.5	68.6	65.6	60.8	69.3	69.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	121	261	563
CNEL:	61	130	281	605

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Jeronimo Road to Hughes

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,700 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,533 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.63	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.61	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.57	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.9	65.1	59.0	67.7	68.3
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	69.6	68.7	65.7	60.9	69.4	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	357	770
CNEL:	83	178	384	827

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Hughes to Morgan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,715 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,451 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.49	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.75	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.71	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	65.0	58.9	67.5	68.1
Medium Trucks:	61.4	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	69.5	68.6	65.5	60.7	69.3	69.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	350	753
CNEL:	81	174	376	809



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Morgan to Toledo Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,439 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,099 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.81	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.43	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.38	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.1	66.1	64.3	58.2	66.9	67.5	
Medium Trucks:	60.7	60.0	53.6	52.1	60.6	60.8	
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2	
Vehicle Noise:	68.8	67.9	64.9	60.1	68.6	69.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	146	315	679
CNEL:	73	157	339	730

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: San Marino to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,151 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,157 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.93	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.31	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.26	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.2	66.2	64.4	58.4	67.0	67.6	
Medium Trucks:	60.8	60.1	53.8	52.2	60.7	60.9	
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3	
Vehicle Noise:	68.9	68.0	65.0	60.2	68.7	69.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	149	321	692
CNEL:	74	160	345	743

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Jamboree Road to Murphy Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,387 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,177 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.97	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.27	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.22	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.3	66.2	64.4	58.4	67.0	67.6	
Medium Trucks:	60.8	60.2	53.8	52.3	60.7	61.0	
Heavy Trucks:	61.3	60.7	51.6	52.9	61.2	61.4	
Vehicle Noise:	69.0	68.1	65.0	60.2	68.8	69.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	150	323	696
CNEL:	75	161	347	748

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Hospital to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,755 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,125 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.86	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.37	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.33	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.1	69.1	67.3	61.2	69.9	70.5	
Medium Trucks:	63.7	63.0	56.7	55.1	63.6	63.8	
Heavy Trucks:	64.1	63.5	54.5	55.7	64.1	64.2	
Vehicle Noise:	71.8	70.9	67.9	63.1	71.6	72.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	357	769
CNEL:	83	178	384	827

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,481 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,020 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 47.329				
Road Grade: 0.0%	Medium Trucks: 47.244				
Left View: -90.0 degrees	Heavy Trucks: 47.329				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.64	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.59	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.55	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	68.8	67.1	61.0	69.6	70.2
Medium Trucks:	63.5	62.8	56.4	54.9	63.4	63.6
Heavy Trucks:	63.9	63.3	54.3	55.5	63.9	64.0
Vehicle Noise:	71.6	70.7	67.6	62.9	71.4	71.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	345	744
CNEL:	80	172	371	799

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Murphy Avenue to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,087 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,070 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.75	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.49	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.44	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.0	64.2	58.2	66.8	67.4
Medium Trucks:	60.6	59.9	53.6	52.0	60.5	60.7
Heavy Trucks:	61.0	60.5	51.4	52.7	61.0	61.1
Vehicle Noise:	68.8	67.8	64.8	60.0	68.6	69.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	145	312	673
CNEL:	72	156	335	723

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Foster to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,532 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,941 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.47	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.77	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.72	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.3	59.7	53.3	51.8	60.2	60.5
Heavy Trucks:	60.8	60.2	51.1	52.4	60.7	60.9
Vehicle Noise:	68.5	67.6	64.5	59.7	68.3	68.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	139	299	645
CNEL:	69	149	321	693

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Fairbanks to Foster

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,575 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,862 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.29	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.95	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.90	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.5	63.8	57.7	66.3	66.9
Medium Trucks:	60.2	59.5	53.1	51.6	60.0	60.3
Heavy Trucks:	60.6	60.0	51.0	52.2	60.6	60.7
Vehicle Noise:	68.3	67.4	64.3	59.5	68.1	68.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	135	291	627
CNEL:	67	145	313	674



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Toledo Way to Bertea

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,840 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,802 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.05	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.4	63.6	57.6	66.2	66.8
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1
Heavy Trucks:	60.4	59.8	50.8	52.1	60.4	60.5
Vehicle Noise:	68.1	67.2	64.2	59.4	68.0	68.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	285	613
CNEL:	66	142	306	659

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Pacifica to Meridian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,780 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,962 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 47.329				
Road Grade: 0.0%	Medium Trucks: 47.244				
Left View: -90.0 degrees	Heavy Trucks: 47.329				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.52	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.72	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.68	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	66.9	60.9	69.5	70.1
Medium Trucks:	63.3	62.7	56.3	54.8	63.2	63.5
Heavy Trucks:	63.8	63.2	54.1	55.4	63.7	63.9
Vehicle Noise:	71.5	70.6	67.5	62.7	71.3	71.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	339	730
CNEL:	78	169	364	784

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Bertea to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,315 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,758 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.04	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.20	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.15	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0
Heavy Trucks:	60.3	59.7	50.7	52.0	60.3	60.4
Vehicle Noise:	68.0	67.1	64.1	59.3	67.8	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	280	604
CNEL:	65	140	301	648

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Meridian to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,241 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,752 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.21	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.17	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.3	63.5	57.4	66.1	66.7
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	68.0	67.1	64.1	59.3	67.8	68.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	279	602
CNEL:	65	139	300	647

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Paseo Westpark to San Marino

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,248 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,753 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos: 77.5% 12.9% 9.6% 97.42% Medium Trucks: 84.8% 4.9% 10.3% 1.84% Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
	<b>Noise Source Elevations (in feet)</b>				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0				
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.21	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.17	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.3	65.3	63.5	57.5	66.1	66.7	
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0	
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4	
Vehicle Noise:	68.0	67.1	64.1	59.3	67.8	68.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	280	602
CNEL:	65	139	300	647

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Alton Parkway  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,161 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,581 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.42	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.66	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.61	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.9	64.8	63.1	57.0	65.6	66.2	
Medium Trucks:	59.4	58.8	52.4	50.9	59.3	59.6	
Heavy Trucks:	59.9	59.3	50.2	51.5	59.8	60.0	
Vehicle Noise:	67.6	66.7	63.6	58.8	67.4	67.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	121	261	562
CNEL:	60	130	280	604

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Astor  
 Road Segment: Lynx to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,650 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 37.138				
Road Grade: 0.0%		Medium Trucks: 37.030				
Left View: -90.0 degrees		Heavy Trucks: 37.139				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	1.98	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-15.25	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-19.21	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.3	61.5	55.5	64.1	64.7
Medium Trucks:	58.9	58.2	51.8	50.3	58.8	59.0
Heavy Trucks:	61.3	60.8	51.7	53.0	61.3	61.5
Vehicle Noise:	66.9	66.0	62.4	58.2	66.7	67.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	49	105	226
CNEL:	24	52	112	241

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Astor  
 Road Segment: Cadence to Lynx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,144 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,249 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	0.78	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-16.46	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-20.42	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.2	62.1	60.3	54.3	62.9	63.5	
Medium Trucks:	57.7	57.0	50.6	49.1	57.6	57.8	
Heavy Trucks:	60.1	59.6	50.5	51.8	60.1	60.2	
Vehicle Noise:	65.7	64.8	61.2	57.0	65.5	65.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	40	87	188
CNEL:	20	43	93	200



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bake Parkway  
 Road Segment: I-5 NB Off-Ramp to Rockfield Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 98,423 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 8,120 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	6.69	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-10.55	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-14.51	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	74.8	73.7	72.0	65.9	74.5	75.1	
Medium Trucks:	68.3	67.7	61.3	59.8	68.2	68.5	
Heavy Trucks:	68.8	68.2	59.1	60.4	68.7	68.9	
Vehicle Noise:	76.5	75.6	72.5	67.7	76.3	76.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	262	565	1,217	2,621
CNEL:	282	607	1,307	2,816

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bake Parkway  
 Road Segment: Muirlands Boulevard to Jeronimo Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 63,562 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,244 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.79	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-12.45	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-16.41	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.1	70.0	68.3	62.2	70.8	71.4	
Medium Trucks:	64.7	64.0	57.6	56.1	64.5	64.8	
Heavy Trucks:	65.1	64.5	55.5	56.7	65.1	65.2	
Vehicle Noise:	72.8	71.9	68.8	64.0	72.6	73.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	125	269	580	1,250
CNEL:	134	289	624	1,343

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bake Parkway  
 Road Segment: Rockfield Boulevard to Muirlands Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 67,848 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,597 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 56.593				
Road Grade: 0.0%	Medium Trucks: 56.522				
Left View: -90.0 degrees	Heavy Trucks: 56.593				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	5.07	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-12.17	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-16.12	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.2	72.1	70.3	64.3	72.9	73.5	
Medium Trucks:	66.7	66.1	59.7	58.2	66.6	66.8	
Heavy Trucks:	67.1	66.6	57.5	58.8	67.1	67.3	
Vehicle Noise:	74.9	73.9	70.9	66.1	74.7	75.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	205	441	949	2,046
CNEL:	220	474	1,020	2,198

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bake Parkway  
 Road Segment: Jeronimo Road to Toledo Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 51,605 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,257 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.88	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.36	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.31	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.2	69.1	67.4	61.3	69.9	70.5	
Medium Trucks:	63.8	63.1	56.7	55.2	63.6	63.9	
Heavy Trucks:	64.2	63.6	54.5	55.8	64.2	64.3	
Vehicle Noise:	71.9	71.0	67.9	63.1	71.7	72.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	109	234	505	1,088
CNEL:	117	252	543	1,169

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bake Parkway  
 Road Segment: Toledo Way to Cromwell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,916 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,871 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.47	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.77	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.72	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	66.9	60.9	69.5	70.1
Medium Trucks:	63.3	62.7	56.3	54.8	63.2	63.5
Heavy Trucks:	63.8	63.2	54.1	55.4	63.7	63.9
Vehicle Noise:	71.5	70.6	67.5	62.7	71.3	71.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	102	220	474	1,021
CNEL:	110	236	509	1,097

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bake Parkway  
 Road Segment: Cromwell to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,418 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,747 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.33	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.91	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.87	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.6	68.6	66.8	60.8	69.4	70.0	
Medium Trucks:	63.2	62.5	56.2	54.6	63.1	63.3	
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7	
Vehicle Noise:	71.3	70.4	67.4	62.6	71.1	71.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	215	464	999
CNEL:	107	231	498	1,074

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bake Parkway  
 Road Segment: Research Drive to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,328 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,420 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.43	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.81	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.77	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.7	66.7	64.9	58.9	67.5	68.1	
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4	
Heavy Trucks:	61.7	61.1	52.1	53.3	61.7	61.8	
Vehicle Noise:	69.4	68.5	65.5	60.7	69.2	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	347	747
CNEL:	80	173	372	802

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Bake Parkway  
 Road Segment: Irvine Center Drive to Research Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,154 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 838 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.18	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-20.42	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-24.37	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.1	62.1	60.3	54.2	62.9	63.5
Medium Trucks:	56.7	56.0	49.7	48.1	56.6	56.8
Heavy Trucks:	57.1	56.5	47.5	48.7	57.1	57.2
Vehicle Noise:	64.8	63.9	60.9	56.1	64.6	65.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	171	368
CNEL:	40	85	184	396



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Bake Parkway  
 Road Segment: Lake Forest Drive to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,404 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	611 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	84.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 74.458				
Road Grade:	0.0%	Medium Trucks: 74.404				
Left View:	-90.0 degrees	Heavy Trucks: 74.458				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.55	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-21.79	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-25.74	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.8	60.7	58.9	52.9	61.5	62.1
Medium Trucks:	55.3	54.6	48.3	46.7	55.2	55.4
Heavy Trucks:	55.7	55.2	46.1	47.4	55.7	55.8
Vehicle Noise:	63.5	62.5	59.5	54.7	63.3	63.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	298
CNEL:	32	69	149	320

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Banting  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,549 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 458 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-4.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-21.49	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-25.45	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	57.8	56.7	55.0	48.9	57.5	58.1	
Medium Trucks:	52.0	51.3	45.0	43.4	51.9	52.1	
Heavy Trucks:	53.9	53.3	44.3	45.5	53.9	54.0	
Vehicle Noise:	60.0	59.1	55.7	51.3	59.8	60.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	13	28	61	132
CNEL:	14	30	65	141

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Pacifica to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,249 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,991 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.93	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-15.30	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.26	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.4	68.6	62.6	71.2	71.8
Medium Trucks:	64.9	64.2	57.8	56.3	64.7	65.0
Heavy Trucks:	64.9	64.3	55.3	56.5	64.9	65.0
Vehicle Noise:	73.0	72.1	69.2	64.3	72.8	73.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	208	449	967
CNEL:	104	224	483	1,041

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Banting to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,424 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,675 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.45	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-15.79	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.74	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.0	69.9	68.2	62.1	70.7	71.3	
Medium Trucks:	64.4	63.7	57.3	55.8	64.3	64.5	
Heavy Trucks:	64.4	63.8	54.8	56.0	64.4	64.5	
Vehicle Noise:	72.6	71.6	68.7	63.8	72.4	72.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	194	417	898
CNEL:	97	208	448	966

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: I-5 HOV Ramp to Technology Drive West

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,665 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,777 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.61	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-15.62	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.58	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	70.1	68.3	62.3	70.9	71.5
Medium Trucks:	64.5	63.9	57.5	56.0	64.4	64.7
Heavy Trucks:	64.6	64.0	54.9	56.2	64.6	64.7
Vehicle Noise:	72.7	71.8	68.8	64.0	72.5	73.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	427	921
CNEL:	99	213	460	991

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Technology Drive West to Ada

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,494 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,598 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-15.91	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.87	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.9	69.8	68.0	62.0	70.6	71.2	
Medium Trucks:	64.3	63.6	57.2	55.7	64.1	64.4	
Heavy Trucks:	64.3	63.7	54.7	55.9	64.3	64.4	
Vehicle Noise:	72.4	71.5	68.6	63.7	72.2	72.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	190	409	881
CNEL:	95	204	440	948

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Irvine Center Drive to I-5 HOV Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,886 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,548 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.00	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.95	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.7	67.9	61.9	70.5	71.1
Medium Trucks:	64.2	63.5	57.1	55.6	64.0	64.3
Heavy Trucks:	64.2	63.6	54.6	55.8	64.2	64.3
Vehicle Noise:	72.4	71.4	68.5	63.6	72.2	72.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	187	404	870
CNEL:	94	202	434	935

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,530 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,354 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.90	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.30	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	69.4	67.6	61.5	70.2	70.8
Medium Trucks:	63.8	63.1	56.8	55.2	63.7	63.9
Heavy Trucks:	63.9	63.3	54.2	55.5	63.8	64.0
Vehicle Noise:	72.0	71.1	68.1	63.3	71.8	72.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	178	383	825
CNEL:	89	191	412	887



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: East Yale Loop to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,336 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,338 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.87	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.37	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.33	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.4	69.3	67.6	61.5	70.1	70.7	
Medium Trucks:	63.8	63.1	56.8	55.2	63.7	63.9	
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9	
Vehicle Noise:	72.0	71.1	68.1	63.2	71.8	72.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	381	821
CNEL:	88	190	410	883

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: West Yale Loop to Lake Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,246 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,248 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.70	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.54	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.50	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	69.2	67.4	61.3	70.0	70.6
Medium Trucks:	63.6	62.9	56.6	55.0	63.5	63.7
Heavy Trucks:	63.7	63.1	54.0	55.3	63.6	63.8
Vehicle Noise:	71.8	70.9	67.9	63.1	71.6	72.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	172	371	800
CNEL:	86	185	399	860

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Ada to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,756 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,290 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.78	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.46	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.42	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.2	67.5	61.4	70.0	70.7
Medium Trucks:	63.7	63.0	56.7	55.1	63.6	63.8
Heavy Trucks:	63.7	63.1	54.1	55.4	63.7	63.8
Vehicle Noise:	71.9	71.0	68.0	63.1	71.7	72.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	376	810
CNEL:	87	188	404	871

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Lake Road to Creek Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,599 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,112 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.42	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.81	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.77	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	68.9	67.1	61.1	69.7	70.3
Medium Trucks:	63.4	62.7	56.3	54.8	63.2	63.5
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	71.5	70.6	67.7	62.8	71.3	71.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	356	767
CNEL:	83	178	383	825

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Red Hill Avenue to Armstrong Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 49,503 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,084 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.29	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.95	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.91	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.0	71.9	70.1	64.1	72.7	73.3	
Medium Trucks:	66.4	65.7	59.3	57.8	66.2	66.5	
Heavy Trucks:	66.4	65.8	56.8	58.0	66.4	66.5	
Vehicle Noise:	74.5	73.6	70.7	65.8	74.3	74.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	195	419	903	1,946
CNEL:	209	451	972	2,093

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Discovery/Herchel to Banting

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,817 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,047 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.90	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.8	67.0	60.9	69.6	70.2
Medium Trucks:	63.2	62.5	56.2	54.6	63.1	63.3
Heavy Trucks:	63.2	62.7	53.6	54.9	63.2	63.4
Vehicle Noise:	71.4	70.5	67.5	62.6	71.2	71.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	349	752
CNEL:	81	174	375	808

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Lyon to East Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,364 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,010 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.03	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.98	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.7	66.9	60.9	69.5	70.1
Medium Trucks:	63.1	62.5	56.1	54.6	63.0	63.3
Heavy Trucks:	63.2	62.6	53.5	54.8	63.1	63.3
Vehicle Noise:	71.3	70.4	67.4	62.6	71.1	71.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	345	742
CNEL:	80	172	371	799

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Creek Road to Lyon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,971 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,978 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.06	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.8	60.8	69.4	70.0
Medium Trucks:	63.1	62.4	56.0	54.5	62.9	63.2
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	71.3	70.3	67.4	62.5	71.1	71.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	158	341	734
CNEL:	79	170	367	790



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 42,568 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,512 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.63	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.61	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.56	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.9	69.9	68.1	62.0	70.7	71.3
Medium Trucks:	64.3	63.6	57.3	55.7	64.2	64.4
Heavy Trucks:	64.3	63.8	54.7	56.0	64.3	64.5
Vehicle Noise:	72.5	71.6	68.6	63.7	72.3	72.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	245	529	1,139
CNEL:	123	264	569	1,226

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Sand Canyon Avenue to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,968 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,812 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.43	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.2	66.5	60.4	69.0	69.6
Medium Trucks:	62.7	62.0	55.7	54.1	62.6	62.8
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.9	69.9	67.0	62.1	70.7	71.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	149	322	693
CNEL:	75	161	346	745

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Armstrong Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,050 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,304 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.37	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.87	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.83	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.6	67.8	61.8	70.4	71.0
Medium Trucks:	64.1	63.4	57.0	55.5	63.9	64.2
Heavy Trucks:	64.1	63.5	54.5	55.7	64.1	64.2
Vehicle Noise:	72.2	71.3	68.4	63.5	72.0	72.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	109	236	508	1,094
CNEL:	118	254	546	1,177

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,406 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,683 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.75	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	67.9	66.1	60.1	68.7	69.3
Medium Trucks:	62.4	61.7	55.3	53.8	62.2	62.5
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	70.6	69.6	66.7	61.8	70.4	70.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	142	306	660
CNEL:	71	153	329	710

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Jamboree Road to Construction Circle

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,325 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,667 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.44	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.80	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.76	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.3	66.5	60.4	69.1	69.7
Medium Trucks:	62.7	62.0	55.7	54.1	62.6	62.8
Heavy Trucks:	62.7	62.2	53.1	54.4	62.7	62.9
Vehicle Noise:	70.9	70.0	67.0	62.1	70.7	71.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	201	434	935
CNEL:	101	217	467	1,006

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Santa Rosa to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,498 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,599 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.32	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.91	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.87	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.2	68.1	66.4	60.3	68.9	69.6	
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7	
Heavy Trucks:	62.6	62.0	53.0	54.3	62.6	62.7	
Vehicle Noise:	70.8	69.9	66.9	62.0	70.6	71.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	426	919
CNEL:	99	213	459	988

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: FedEx to Discovery/Herchel

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,158 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,581 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.83	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.03	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.9	59.8	68.4	69.0	
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2	
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2	
Vehicle Noise:	70.3	69.4	66.4	61.5	70.1	70.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	294	632
CNEL:	68	147	316	680

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Jeffrey Road to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 18,899 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,559 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.89	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.09	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.6	67.6	65.8	59.8	68.4	69.0	
Medium Trucks:	62.0	61.4	55.0	53.5	61.9	62.1	
Heavy Trucks:	62.1	61.5	52.4	53.7	62.0	62.2	
Vehicle Noise:	70.2	69.3	66.3	61.5	70.0	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	135	291	627
CNEL:	67	145	313	674



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Laguna Canyon Road to FedEx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,600 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,534 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.96	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.20	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.16	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.7	59.7	68.3	68.9
Medium Trucks:	62.0	61.3	54.9	53.4	61.8	62.1
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	70.2	69.2	66.3	61.4	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	134	288	620
CNEL:	67	144	310	667

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Pullman Street to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 37,853 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,123 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 56.593				
Road Grade: 0.0%	Medium Trucks: 56.522				
Left View: -90.0 degrees	Heavy Trucks: 56.593				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.12	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-15.12	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-19.07	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.8	70.7	69.0	62.9	71.5	72.1	
Medium Trucks:	65.2	64.5	58.2	56.6	65.1	65.3	
Heavy Trucks:	65.2	64.6	55.6	56.8	65.2	65.3	
Vehicle Noise:	73.4	72.4	69.5	64.6	73.2	73.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	163	351	755	1,627
CNEL:	175	377	812	1,750

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Construction Circle to Fire Station

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,571 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,357 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.90	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.34	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.29	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	66.0	59.9	68.5	69.1
Medium Trucks:	62.2	61.5	55.1	53.6	62.1	62.3
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	70.4	69.4	66.5	61.6	70.2	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	400	861
CNEL:	93	200	430	926

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Fire Station to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,571 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,357 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.90	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.34	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.29	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	66.0	59.9	68.5	69.1
Medium Trucks:	62.2	61.5	55.1	53.6	62.1	62.3
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	70.4	69.4	66.5	61.6	70.2	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	400	861
CNEL:	93	200	430	926

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Paseo Westpark to Santa Rosa

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,602 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,360 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.91	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.33	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.29	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	66.0	59.9	68.5	69.1
Medium Trucks:	62.2	61.5	55.1	53.6	62.1	62.3
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	70.4	69.4	66.5	61.6	70.2	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	186	400	862
CNEL:	93	200	430	927

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Barranca Parkway  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,663 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,200 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.60	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.64	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.59	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.7	59.6	68.2	68.8
Medium Trucks:	61.9	61.2	54.8	53.3	61.8	62.0
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	70.1	69.1	66.2	61.3	69.9	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	382	822
CNEL:	88	191	411	885

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Bay Tree  
 Road Segment: Trabuco Road to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,681 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	221 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-7.41	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-24.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-28.61	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.6	53.6	51.8	45.8	54.4	55.0
Medium Trucks:	48.9	48.2	41.8	40.3	48.7	49.0
Heavy Trucks:	50.7	50.1	41.1	42.3	50.7	50.8
Vehicle Noise:	56.9	56.0	52.6	48.2	56.7	57.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	38	81
CNEL:	9	19	40	87

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Beacon  
 Road Segment: Ridge Valley to Benchmark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,641 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 300 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-5.41	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-22.65	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-26.61	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	57.0	55.9	54.1	48.1	56.7	57.3	
Medium Trucks:	51.5	50.8	44.4	42.9	51.4	51.6	
Heavy Trucks:	53.9	53.4	44.3	45.6	53.9	54.1	
Vehicle Noise:	59.5	58.6	55.0	50.8	59.3	59.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	16	34	73
CNEL:	8	17	36	77



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Benchmark (LN Street)  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,729 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 143 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-8.65	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-25.89	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-29.84	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	53.7	52.7	50.9	44.9	53.5	54.1	
Medium Trucks:	48.2	47.6	41.2	39.7	48.1	48.4	
Heavy Trucks:	50.7	50.1	41.1	42.3	50.7	50.8	
Vehicle Noise:	56.2	55.4	51.7	47.6	56.1	56.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	10	21	44
CNEL:	5	10	22	47

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bison Avenue  
 Road Segment: SR-73 NB Off-Ramp to California Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,007 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,146 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.36	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.83	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.6	66.5	64.7	58.7	67.3	67.9	
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5	
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3	
Vehicle Noise:	69.4	68.5	65.4	60.7	69.2	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	119	257	555
CNEL:	59	128	276	595

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bonita Canyon Drive  
 Road Segment: MacArthur Boulevard to SR-73

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,956 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,554 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 75.0 feet Centerline Dist. to Observer: 75.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos:	77.5%	12.9%	9.6%	97.42%
	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
	<b>Noise Source Elevations (in feet)</b>				
	Autos:	2.000			
	Medium Trucks:	4.000			
	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos:	70.413			
	Medium Trucks:	70.356			
	Heavy Trucks:	70.413			

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.66	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.57	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-19.53	-2.33	-1.20	-5.25	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.3	65.5	59.4	68.1	68.7
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	339	731
CNEL:	79	169	364	785

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Bonita Canyon Drive  
 Road Segment: Turtle Ridge to Shady Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,905 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,725 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height:	0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	75.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	75.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 70.413				
Road Grade:	0.0%	Medium Trucks: 70.356				
Left View:	-90.0 degrees	Heavy Trucks: 70.413				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.04	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.28	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-21.24	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.6	63.8	57.7	66.4	67.0
Medium Trucks:	60.2	59.5	53.2	51.6	60.1	60.3
Heavy Trucks:	60.6	60.0	51.0	52.2	60.6	60.7
Vehicle Noise:	68.3	67.4	64.4	59.6	68.1	68.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	121	261	562
CNEL:	60	130	281	604

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bonita Canyon Drive  
 Road Segment: Newport Coast Drive to Turtle Ridge

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,301 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,592 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 70.413				
Road Grade: 0.0%	Medium Trucks: 70.356				
Left View: -90.0 degrees	Heavy Trucks: 70.413				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.39	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.63	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-21.58	-2.33	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.3	65.2	63.5	57.4	66.0	66.6	
Medium Trucks:	59.8	59.2	52.8	51.3	59.7	60.0	
Heavy Trucks:	60.3	59.7	50.6	51.9	60.2	60.4	
Vehicle Noise:	68.0	67.1	64.0	59.2	67.8	68.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	115	248	533
CNEL:	57	123	266	573

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Bonita Canyon Drive  
 Road Segment: SR-73 NB Off-Ramp to Newport Coast Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,474 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,524 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.58	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.82	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-21.77	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	65.0	63.3	57.2	65.8	66.4
Medium Trucks:	59.7	59.0	52.6	51.1	59.5	59.8
Heavy Trucks:	60.1	59.5	50.4	51.7	60.1	60.2
Vehicle Noise:	67.8	66.9	63.8	59.0	67.6	68.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	112	240	518
CNEL:	56	120	258	557

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bosque  
 Road Segment: Cadence to Great Park Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,932 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,067 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph					
Near/Far Lane Distance: 12 feet					
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height:</b> 0.0 feet	VehicleType	Day	Evening	Night	Daily
Barrier Type (0-Wall, 1-Berm): 0.0	Autos: 77.5% 12.9% 9.6% 97.42%				
Centerline Dist. to Barrier: 37.5 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Centerline Dist. to Observer: 37.5 feet	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Barrier Distance to Observer: 0.0 feet	<b>Noise Source Elevations (in feet)</b>				
Observer Height (Above Pad): 5.0 feet	Autos: 2.000				
Pad Elevation: 0.0 feet	Medium Trucks: 4.000				
Road Elevation: 0.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Road Grade: 0.0%	<b>Lane Equivalent Distance (in feet)</b>				
Left View: -90.0 degrees	Autos: 37.138				
Right View: 90.0 degrees	Medium Trucks: 37.030				
	Heavy Trucks: 37.139				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	0.09	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-17.15	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-21.10	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.5	61.4	59.6	53.6	62.2	62.8	
Medium Trucks:	57.0	56.3	50.0	48.4	56.9	57.1	
Heavy Trucks:	59.5	58.9	49.8	51.1	59.4	59.6	
Vehicle Noise:	65.0	64.1	60.5	56.3	64.8	65.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	36	79	169
CNEL:	18	39	84	180

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bosque  
 Road Segment: Irvine Boulevard to Benchmark (LN Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,882 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 733 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-1.54	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-18.78	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-22.73	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.8	59.8	58.0	52.0	60.6	61.2	
Medium Trucks:	55.4	54.7	48.3	46.8	55.2	55.5	
Heavy Trucks:	57.8	57.2	48.2	49.4	57.8	57.9	
Vehicle Noise:	63.4	62.5	58.8	54.7	63.2	63.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	13	28	61	132
CNEL:	14	30	65	140



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bosque  
 Road Segment: Benchmark to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,107 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 669 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-1.94	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-19.18	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-23.13	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.4	59.4	57.6	51.6	60.2	60.8	
Medium Trucks:	55.0	54.3	47.9	46.4	54.8	55.1	
Heavy Trucks:	57.4	56.8	47.8	49.1	57.4	57.5	
Vehicle Noise:	63.0	62.1	58.5	54.3	62.8	63.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	27	58	124
CNEL:	13	28	61	132

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bosque  
 Road Segment: Great Park Boulevard to Beacon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,843 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 152 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-8.37	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-25.61	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-29.56	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.0	53.0	51.2	45.1	53.8	54.4
Medium Trucks:	48.5	47.9	41.5	39.9	48.4	48.6
Heavy Trucks:	51.0	50.4	41.4	42.6	51.0	51.1
Vehicle Noise:	56.5	55.7	52.0	47.8	56.4	56.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	10	21	46
CNEL:	5	11	23	49

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Bosque  
 Road Segment: Beacon to S 5th Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1,609 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	133 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-8.96	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-26.20	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-30.15	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.4	52.4	50.6	44.5	53.2	53.8
Medium Trucks:	47.9	47.3	40.9	39.4	47.8	48.0
Heavy Trucks:	50.4	49.8	40.8	42.0	50.4	50.5
Vehicle Noise:	55.9	55.1	51.4	47.2	55.8	56.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	20	42
CNEL:	4	10	21	45

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bryan Avenue  
 Road Segment: Jamboree Road to Market Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,671 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,870 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.77	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.47	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.43	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.0	65.9	64.2	58.1	66.7	67.3	
Medium Trucks:	60.7	60.1	53.7	52.2	60.6	60.9	
Heavy Trucks:	61.6	61.0	52.0	53.2	61.6	61.7	
Vehicle Noise:	68.8	67.9	64.8	60.1	68.6	69.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	109	235	506
CNEL:	54	117	252	543

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bryan Avenue  
 Road Segment: Market Place to El Camino Real

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,480 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,772 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.70	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.66	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	61.3	60.8	51.7	53.0	61.3	61.5
Vehicle Noise:	68.6	67.7	64.5	59.8	68.4	68.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	105	227	488
CNEL:	52	113	243	524

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bryan Avenue  
 Road Segment: Rubicon to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,726 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,792 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.58	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.61	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	64.0	57.9	66.5	67.1
Medium Trucks:	60.6	59.9	53.5	52.0	60.4	60.7
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5
Vehicle Noise:	68.6	67.7	64.6	59.9	68.4	68.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	106	228	492
CNEL:	53	114	245	528

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bryan Avenue  
 Road Segment: El Camino Real to Rubicon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,533 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,776 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.69	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.65	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	61.4	60.8	51.7	53.0	61.3	61.5
Vehicle Noise:	68.6	67.7	64.5	59.9	68.4	68.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	105	227	489
CNEL:	52	113	243	525

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bryan Avenue  
 Road Segment: Eastwood to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,724 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,215 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.30	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.0	62.3	56.2	64.8	65.5
Medium Trucks:	58.9	58.2	51.8	50.3	58.7	59.0
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8
Vehicle Noise:	66.9	66.0	62.9	58.2	66.8	67.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	176	380
CNEL:	41	88	189	407



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Bryan Avenue  
 Road Segment: Westwood to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,412 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,106 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.51	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.75	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.71	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.7	63.6	61.9	55.8	64.4	65.0
Medium Trucks:	58.5	57.8	51.4	49.9	58.3	58.6
Heavy Trucks:	59.3	58.7	49.7	50.9	59.3	59.4
Vehicle Noise:	66.5	65.6	62.5	57.8	66.3	66.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	166	357
CNEL:	38	82	178	383

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bryan Avenue  
 Road Segment: Culver Drive to Westwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,139 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,084 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.84	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.80	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.6	61.8	55.7	64.4	65.0
Medium Trucks:	58.4	57.7	51.3	49.8	58.3	58.5
Heavy Trucks:	59.2	58.6	49.6	50.8	59.2	59.3
Vehicle Noise:	66.4	65.5	62.4	57.7	66.3	66.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	163	352
CNEL:	38	81	175	377

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Bryan Avenue  
 Road Segment: Yale Avenue to Eastwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,268 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,095 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.75	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.7	63.6	61.8	55.8	64.4	65.0	
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5	
Heavy Trucks:	59.3	58.7	49.6	50.9	59.2	59.4	
Vehicle Noise:	66.5	65.6	62.4	57.8	66.3	66.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	164	354
CNEL:	38	82	176	380

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Cadence  
 Road Segment: Pusan to Chinon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,074 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 584 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.78	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-21.02	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-24.97	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.4	62.3	60.5	54.5	63.1	63.7	
Medium Trucks:	57.4	56.7	50.3	48.8	57.2	57.5	
Heavy Trucks:	58.7	58.1	49.0	50.3	58.6	58.8	
Vehicle Noise:	65.4	64.5	61.2	56.7	65.2	65.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	83	179
CNEL:	19	41	89	192

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Cadence  
 Road Segment: Bosque to Pusan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,540 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 540 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.12	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-21.36	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-25.31	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.0	62.0	60.2	54.1	62.8	63.4	
Medium Trucks:	57.0	56.3	50.0	48.4	56.9	57.1	
Heavy Trucks:	58.3	57.7	48.7	49.9	58.3	58.4	
Vehicle Noise:	65.0	64.1	60.9	56.3	64.8	65.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	79	170
CNEL:	18	39	85	182

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Cadence  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,864 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 401 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.40	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-22.64	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-26.60	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.7	60.7	58.9	52.9	61.5	62.1	
Medium Trucks:	55.7	55.1	48.7	47.1	55.6	55.8	
Heavy Trucks:	57.0	56.4	47.4	48.7	57.0	57.1	
Vehicle Noise:	63.7	62.9	59.6	55.0	63.6	64.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	30	65	140
CNEL:	15	32	69	149

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Cadence  
 Road Segment: Chinon to Merit

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 3,333 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 275 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	37.138			
Road Grade: 0.0%	Medium Trucks:	37.030			
Left View: -90.0 degrees	Heavy Trucks:	37.139			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-7.05	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-24.28	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-28.24	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.1	59.0	57.3	51.2	59.8	60.4
Medium Trucks:	54.1	53.4	47.0	45.5	54.0	54.2
Heavy Trucks:	55.4	54.8	45.8	47.0	55.4	55.5
Vehicle Noise:	62.1	61.2	57.9	53.4	61.9	62.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	23	50	109
CNEL:	12	25	54	116

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Cadence  
 Road Segment: Merit to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,688 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 139 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-10.00	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-27.24	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-31.19	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	57.1	56.1	54.3	48.3	56.9	57.5	
Medium Trucks:	51.1	50.5	44.1	42.6	51.0	51.2	
Heavy Trucks:	52.4	51.8	42.8	44.1	52.4	52.5	
Vehicle Noise:	59.2	58.3	55.0	50.4	59.0	59.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	15	32	69
CNEL:	7	16	34	74



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: California Avenue  
 Road Segment: University Drive to Academy Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,650 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.74	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.46	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.0	63.9	62.2	56.1	64.7	65.3	
Medium Trucks:	59.0	58.3	51.9	50.4	58.9	59.1	
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4	
Vehicle Noise:	67.0	66.1	62.8	58.3	66.8	67.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	83	178	384
CNEL:	41	89	191	411

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: California Avenue  
 Road Segment: Campus Drive to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,868 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	814 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.33	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.57	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.53	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	60.9	59.1	53.0	61.7	62.3
Medium Trucks:	55.9	55.2	48.9	47.3	55.8	56.0
Heavy Trucks:	57.2	56.6	47.6	48.8	57.2	57.3
Vehicle Noise:	63.9	63.0	59.8	55.2	63.8	64.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	111	240
CNEL:	26	55	119	257

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: California Avenue  
 Road Segment: Theory to Bison Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,414 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 777 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.78	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.73	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.7	60.7	58.9	52.8	61.5	62.1	
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8	
Heavy Trucks:	57.0	56.4	47.4	48.6	57.0	57.1	
Vehicle Noise:	63.7	62.8	59.6	55.0	63.5	64.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	232
CNEL:	25	54	115	249

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Campus Drive  
 Road Segment: Carlson Avenue to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,529 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,436 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.46	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-15.78	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-19.74	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.4	70.3	68.5	62.5	71.1	71.7	
Medium Trucks:	64.9	64.3	57.9	56.4	64.8	65.1	
Heavy Trucks:	65.3	64.8	55.7	57.0	65.3	65.5	
Vehicle Noise:	73.1	72.1	69.1	64.3	72.9	73.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	167	360	777
CNEL:	83	180	387	834

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Campus Drive  
 Road Segment: University Drive to Bridge Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,395 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,673 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.86	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.33	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.8	67.0	60.9	69.6	70.2
Medium Trucks:	63.4	62.7	56.4	54.8	63.3	63.5
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9
Vehicle Noise:	71.5	70.6	67.6	62.8	71.3	71.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	165	355	765
CNEL:	82	177	381	822

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Campus Drive  
 Road Segment: Jamboree Road to Carlson Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,090 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,565 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.68	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.51	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.6	66.8	60.8	69.4	70.0
Medium Trucks:	63.2	62.5	56.2	54.6	63.1	63.3
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7
Vehicle Noise:	71.3	70.4	67.4	62.6	71.1	71.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	345	744
CNEL:	80	172	371	800

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Campus Drive  
 Road Segment: Stanford Court to Berkeley Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,465 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,266 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.09	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.05	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.3	60.2	68.8	69.4
Medium Trucks:	62.7	62.0	55.6	54.1	62.5	62.8
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	70.8	69.9	66.8	62.1	70.6	71.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	148	318	685
CNEL:	74	159	342	736

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Campus Drive  
 Road Segment: California Avenue to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,506 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,187 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.99	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.25	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.20	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.9	67.9	66.1	60.1	68.7	69.3	
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6	
Heavy Trucks:	62.9	62.3	53.3	54.6	62.9	63.0	
Vehicle Noise:	70.6	69.7	66.7	61.9	70.4	70.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	311	669
CNEL:	72	155	334	719



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Campus Drive  
 Road Segment: Berkeley Avenue to Cornell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,170 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,747 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.18	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	66.9	65.1	59.1	67.7	68.3
Medium Trucks:	61.5	60.9	54.5	53.0	61.4	61.7
Heavy Trucks:	62.0	61.4	52.3	53.6	61.9	62.1
Vehicle Noise:	69.7	68.7	65.7	60.9	69.5	69.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	124	267	576
CNEL:	62	133	287	619

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Campus Drive  
 Road Segment: Martin to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,979 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,483 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.70	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.93	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.89	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.2	64.4	58.4	67.0	67.6
Medium Trucks:	60.8	60.2	53.8	52.2	60.7	60.9
Heavy Trucks:	61.2	60.7	51.6	52.9	61.2	61.4
Vehicle Noise:	69.0	68.0	65.0	60.2	68.8	69.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	111	240	517
CNEL:	55	120	258	555

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative Project Name: Irvine GP  
 Road Name: Campus Drive Job Number: 15937  
 Road Segment: Culver Drive to Paseo Montoya (Turtle Rock Drive)

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,071 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,326 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.42	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.38	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.3	59.7	53.3	51.8	60.2	60.5
Heavy Trucks:	60.8	60.2	51.1	52.4	60.7	60.9
Vehicle Noise:	68.5	67.6	64.5	59.7	68.3	68.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	222	479
CNEL:	52	111	239	515

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Campus Drive  
 Road Segment: Von Karman Avenue to Teller Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,306 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,263 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.40	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.63	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.59	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.5	63.7	57.7	66.3	66.9
Medium Trucks:	60.1	59.5	53.1	51.5	60.0	60.2
Heavy Trucks:	60.5	60.0	50.9	52.2	60.5	60.7
Vehicle Noise:	68.3	67.3	64.3	59.5	68.1	68.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	100	215	464
CNEL:	50	107	231	499

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Campus Drive  
 Road Segment: MacArthur Boulevard to Martin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,566 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,202 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.61	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.85	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.80	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0
Heavy Trucks:	60.3	59.7	50.7	52.0	60.3	60.4
Vehicle Noise:	68.0	67.1	64.1	59.3	67.8	68.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	97	208	449
CNEL:	48	104	224	482

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Campus Drive  
 Road Segment: Teller Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,374 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,021 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.51	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.6	62.8	56.8	65.4	66.0
Medium Trucks:	59.2	58.5	52.2	50.6	59.1	59.3
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7
Vehicle Noise:	67.3	66.4	63.4	58.6	67.1	67.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	87	187	403
CNEL:	43	93	201	433

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Carlson Avenue  
 Road Segment: Michelson Drive to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,352 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,102 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.99	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.18	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.1	57.1	65.7	66.3
Medium Trucks:	59.5	58.9	52.5	51.0	59.4	59.6
Heavy Trucks:	59.9	59.4	50.3	51.6	59.9	60.1
Vehicle Noise:	67.7	66.7	63.7	58.9	67.5	67.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	91	197	424
CNEL:	46	98	211	455

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Chinon  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,475 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 369 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-3.73	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-20.96	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-24.92	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.6	54.6	52.8	46.8	55.4	56.0
Medium Trucks:	50.5	49.8	43.5	41.9	50.4	50.6
Heavy Trucks:	53.7	53.1	44.1	45.3	53.7	53.8
Vehicle Noise:	58.5	57.7	53.8	49.9	58.4	58.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	14	29	63
CNEL:	7	14	31	67



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Creek Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,892 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 404 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-3.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-20.58	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-24.53	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	53.1	52.1	50.3	44.3	52.9	53.5	
Medium Trucks:	48.0	47.3	40.9	39.4	47.9	48.1	
Heavy Trucks:	51.2	50.6	41.6	42.8	51.2	51.3	
Vehicle Noise:	56.0	55.2	51.3	47.4	55.9	56.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	15	33	71
CNEL:	8	16	35	76

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 61,019 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,034 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.20	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.04	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.00	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.1	71.0	69.3	63.2	71.8	72.4	
Medium Trucks:	65.5	64.8	58.4	56.9	65.4	65.6	
Heavy Trucks:	65.5	64.9	55.9	57.1	65.5	65.6	
Vehicle Noise:	73.7	72.7	69.8	64.9	73.5	73.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	308	663	1,428
CNEL:	154	331	713	1,536

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 59,692 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,925 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.10	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.14	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.09	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.0	70.9	69.2	63.1	71.7	72.3	
Medium Trucks:	65.4	64.7	58.3	56.8	65.3	65.5	
Heavy Trucks:	65.4	64.8	55.8	57.0	65.4	65.5	
Vehicle Noise:	73.6	72.6	69.7	64.8	73.4	73.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	141	303	653	1,407
CNEL:	151	326	703	1,514

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 61,103 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,041 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.20	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.04	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-16.99	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.1	71.0	69.3	63.2	71.8	72.4
Medium Trucks:	65.5	64.8	58.4	56.9	65.4	65.6
Heavy Trucks:	65.5	64.9	55.9	57.1	65.5	65.6
Vehicle Noise:	73.7	72.7	69.8	64.9	73.5	73.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	308	663	1,429
CNEL:	154	331	714	1,538

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Scottsdale Drive to I-5 SB Off- Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 59,478 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,907 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.09	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.15	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.11	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.0	70.9	69.1	63.1	71.7	72.3
Medium Trucks:	65.4	64.7	58.3	56.8	65.2	65.5
Heavy Trucks:	65.4	64.8	55.8	57.0	65.4	65.5
Vehicle Noise:	73.5	72.6	69.7	64.8	73.3	73.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	140	302	652	1,404
CNEL:	151	325	701	1,510

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: I-405 NB Off-Ramp to San Leandro

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 56,681 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,676 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.88	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.36	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.32	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.8	70.7	68.9	62.9	71.5	72.1
Medium Trucks:	65.1	64.5	58.1	56.6	65.0	65.3
Heavy Trucks:	65.2	64.6	55.6	56.8	65.2	65.3
Vehicle Noise:	73.3	72.4	69.5	64.6	73.1	73.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	136	293	631	1,359
CNEL:	146	315	679	1,462

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: San Leandro to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 52,972 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,370 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.58	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.66	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.61	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.4	68.6	62.6	71.2	71.8
Medium Trucks:	64.9	64.2	57.8	56.3	64.7	65.0
Heavy Trucks:	64.9	64.3	55.3	56.5	64.9	65.0
Vehicle Noise:	73.0	72.1	69.2	64.3	72.8	73.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	130	280	603	1,299
CNEL:	140	301	649	1,398

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Harvard Avenue to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 53,363 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,402 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.61	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.62	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.58	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.5	70.4	68.7	62.6	71.2	71.8	
Medium Trucks:	64.9	64.2	57.9	56.3	64.8	65.0	
Heavy Trucks:	64.9	64.3	55.3	56.5	64.9	65.0	
Vehicle Noise:	73.1	72.1	69.2	64.3	72.9	73.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	131	281	606	1,306
CNEL:	140	303	652	1,405



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Trabuco Road to Farwell Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 59,139 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,879 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.06	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.18	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.13	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.4	71.3	69.5	63.5	72.1	72.7	
Medium Trucks:	65.7	65.1	58.7	57.2	65.6	65.9	
Heavy Trucks:	65.8	65.2	56.2	57.4	65.8	65.9	
Vehicle Noise:	73.9	73.0	70.1	65.2	73.7	74.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	142	306	658	1,418
CNEL:	153	329	708	1,526

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 51,467 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,246 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.46	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.78	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.74	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.3	70.3	68.5	62.5	71.1	71.7	
Medium Trucks:	64.7	64.1	57.7	56.2	64.6	64.8	
Heavy Trucks:	64.8	64.2	55.1	56.4	64.7	64.9	
Vehicle Noise:	72.9	72.0	69.0	64.2	72.7	73.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	127	275	592	1,275
CNEL:	137	295	637	1,371

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Main Street to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 50,023 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,127 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.33	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.90	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.86	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.2	70.2	68.4	62.3	71.0	71.6
Medium Trucks:	64.6	63.9	57.6	56.0	64.5	64.7
Heavy Trucks:	64.6	64.1	55.0	56.3	64.6	64.7
Vehicle Noise:	72.8	71.9	68.9	64.0	72.6	73.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	125	269	581	1,251
CNEL:	135	290	625	1,346

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Warner Avenue to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 49,242 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,063 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.27	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.97	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.93	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	70.1	68.3	62.3	70.9	71.5
Medium Trucks:	64.5	63.9	57.5	56.0	64.4	64.7
Heavy Trucks:	64.6	64.0	54.9	56.2	64.6	64.7
Vehicle Noise:	72.7	71.8	68.8	64.0	72.5	73.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	124	267	574	1,238
CNEL:	133	287	618	1,332

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Walnut Avenue to Scottsdale Dive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 47,556 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,923 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.11	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.12	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.08	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.0	69.9	68.2	62.1	70.7	71.3
Medium Trucks:	64.4	63.7	57.4	55.8	64.3	64.5
Heavy Trucks:	64.4	63.8	54.8	56.0	64.4	64.5
Vehicle Noise:	72.6	71.6	68.7	63.8	72.4	72.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	261	561	1,209
CNEL:	130	280	604	1,301

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,883 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,950 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.14	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.05	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.0	70.0	68.2	62.1	70.8	71.4
Medium Trucks:	64.4	63.7	57.4	55.8	64.3	64.5
Heavy Trucks:	64.4	63.9	54.8	56.1	64.4	64.6
Vehicle Noise:	72.6	71.7	68.7	63.9	72.4	72.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	262	564	1,215
CNEL:	131	282	607	1,307

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Shady Canyon Drive to Palo Verde

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,477 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,184 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.67	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.62	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.0	67.3	61.2	69.8	70.4
Medium Trucks:	63.5	62.8	56.5	54.9	63.4	63.6
Heavy Trucks:	63.5	62.9	53.9	55.2	63.5	63.6
Vehicle Noise:	71.7	70.8	67.8	62.9	71.5	72.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	169	364	785
CNEL:	84	182	392	844

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Deerfield Avenue to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,131 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,641 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.79	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.45	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.40	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.6	67.8	61.8	70.4	71.0
Medium Trucks:	64.1	63.4	57.0	55.5	63.9	64.2
Heavy Trucks:	64.1	63.5	54.5	55.7	64.1	64.2
Vehicle Noise:	72.3	71.3	68.4	63.5	72.0	72.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	248	534	1,150
CNEL:	124	267	574	1,238



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Sandburg Way to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,162 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,643 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.79	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.45	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.40	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.6	67.8	61.8	70.4	71.0
Medium Trucks:	64.1	63.4	57.0	55.5	63.9	64.2
Heavy Trucks:	64.1	63.5	54.5	55.7	64.1	64.2
Vehicle Noise:	72.3	71.3	68.4	63.5	72.1	72.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	248	534	1,151
CNEL:	124	267	575	1,238

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 43,318 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,574 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.49	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.6	69.5	67.8	61.7	70.3	70.9	
Medium Trucks:	64.0	63.3	56.9	55.4	63.9	64.1	
Heavy Trucks:	64.0	63.4	54.4	55.6	64.0	64.1	
Vehicle Noise:	72.2	71.2	68.3	63.4	72.0	72.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	245	527	1,136
CNEL:	122	263	567	1,222

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Palo Verde to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,255 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,001 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.00	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.7	66.9	60.8	69.5	70.1
Medium Trucks:	63.1	62.4	56.1	54.5	63.0	63.2
Heavy Trucks:	63.1	62.6	53.5	54.8	63.1	63.3
Vehicle Noise:	71.3	70.4	67.4	62.5	71.1	71.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	344	740
CNEL:	80	172	370	796

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: University Drive to Sandburg Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,821 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,368 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.45	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.79	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.74	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.3	67.5	61.5	70.1	70.7
Medium Trucks:	63.7	63.1	56.7	55.1	63.6	63.8
Heavy Trucks:	63.8	63.2	54.1	55.4	63.7	63.9
Vehicle Noise:	71.9	71.0	68.0	63.2	71.7	72.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	109	235	507	1,092
CNEL:	118	253	545	1,175

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Farwell Avenue to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 46,846 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,865 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.05	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.19	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.15	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.3	70.3	68.5	62.5	71.1	71.7	
Medium Trucks:	64.7	64.1	57.7	56.2	64.6	64.8	
Heavy Trucks:	64.8	64.2	55.1	56.4	64.7	64.9	
Vehicle Noise:	72.9	72.0	69.0	64.2	72.7	73.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	262	564	1,214
CNEL:	131	281	606	1,306

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Campus Drive to High School

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 40,099 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,308 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.37	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.86	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.82	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.3	69.2	67.4	61.4	70.0	70.6	
Medium Trucks:	63.6	63.0	56.6	55.1	63.5	63.8	
Heavy Trucks:	63.7	63.1	54.1	55.3	63.7	63.8	
Vehicle Noise:	71.8	70.9	68.0	63.1	71.6	72.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	108	233	501	1,079
CNEL:	116	250	539	1,161

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: High School to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,155 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,230 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.27	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.97	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.92	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	69.1	67.3	61.3	69.9	70.5
Medium Trucks:	63.5	62.9	56.5	55.0	63.4	63.7
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7
Vehicle Noise:	71.7	70.8	67.9	63.0	71.5	72.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	229	493	1,062
CNEL:	114	246	530	1,143

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Bryan Avenue to Florence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,248 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,073 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.05	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.19	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.14	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.9	68.9	67.1	61.1	69.7	70.3	
Medium Trucks:	63.3	62.7	56.3	54.7	63.2	63.4	
Heavy Trucks:	63.4	62.8	53.7	55.0	63.3	63.5	
Vehicle Noise:	71.5	70.6	67.6	62.8	71.3	71.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	103	221	477	1,028
CNEL:	111	238	513	1,105



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Portola Parkway to Settlers

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,400 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,848 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.16	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.35	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.4	68.3	66.5	60.5	69.1	69.7	
Medium Trucks:	62.8	62.1	55.7	54.2	62.7	62.9	
Heavy Trucks:	62.8	62.2	53.2	54.4	62.8	62.9	
Vehicle Noise:	71.0	70.0	67.1	62.2	70.8	71.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	151	326	702
CNEL:	76	163	350	755

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Florence to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 36,395 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,003 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.95	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.29	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.24	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.8	67.0	61.0	69.6	70.2
Medium Trucks:	63.2	62.6	56.2	54.6	63.1	63.3
Heavy Trucks:	63.3	62.7	53.6	54.9	63.2	63.4
Vehicle Noise:	71.4	70.5	67.5	62.7	71.2	71.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	218	470	1,012
CNEL:	109	235	505	1,088

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Irvine Boulevard to Viewpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,820 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,295 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.79	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.45	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.41	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.8	59.8	68.4	69.0	
Medium Trucks:	62.1	61.4	55.0	53.5	61.9	62.2	
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2	
Vehicle Noise:	70.2	69.3	66.4	61.5	70.0	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	182	393	846
CNEL:	91	196	422	910

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Viewpark to Meadowood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,773 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,209 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.62	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.62	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.58	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.7	59.6	68.2	68.8
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0
Heavy Trucks:	61.9	61.3	52.3	53.6	61.9	62.0
Vehicle Noise:	70.1	69.2	66.2	61.3	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	178	383	824
CNEL:	89	191	412	887

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Settlers to Furrow

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,153 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,003 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-20.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-24.01	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.8	66.5	67.1
Medium Trucks:	60.1	59.4	53.1	51.5	60.0	60.2
Heavy Trucks:	60.1	59.6	50.5	51.8	60.1	60.3
Vehicle Noise:	68.3	67.4	64.4	59.5	68.1	68.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	101	217	467
CNEL:	50	108	233	502

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Culver Drive  
 Road Segment: Meadowood to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,447 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,604 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.77	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-18.01	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.96	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.1	64.3	58.2	66.9	67.5
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	60.5	59.9	50.9	52.2	60.5	60.6
Vehicle Noise:	68.7	67.8	64.8	59.9	68.5	69.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	309	666
CNEL:	72	154	333	717

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Discovery Drive  
 Road Segment: Irvine Center Drive to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,351 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,101 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.21	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.2	62.2	60.4	54.4	63.0	63.6
Medium Trucks:	57.2	56.5	50.2	48.6	57.1	57.3
Heavy Trucks:	58.5	57.9	48.9	50.2	58.5	58.6
Vehicle Noise:	65.3	64.4	61.1	56.5	65.1	65.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	136	293
CNEL:	31	68	146	314

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Discovery Drive  
 Road Segment: Waterworks Way to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,669 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 715 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
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FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.90	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.09	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.4	60.3	58.5	52.5	61.1	61.7	
Medium Trucks:	55.3	54.7	48.3	46.8	55.2	55.5	
Heavy Trucks:	56.7	56.1	47.0	48.3	56.6	56.8	
Vehicle Noise:	63.4	62.5	59.2	54.7	63.2	63.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	102	220
CNEL:	24	51	109	235



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: East Yale Loop  
 Road Segment: Alton Parkway to Witherspoon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,632 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,125 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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Autos:	77.5%	12.9%	9.6%	97.42%																	
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	<b>Noise Source Elevations (in feet)</b>																				
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	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.93	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.17	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.12	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.3	62.3	60.5	54.5	63.1	63.7	
Medium Trucks:	57.3	56.6	50.3	48.7	57.2	57.4	
Heavy Trucks:	58.6	58.0	49.0	50.3	58.6	58.7	
Vehicle Noise:	65.3	64.4	61.2	56.6	65.2	65.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	297
CNEL:	32	69	148	318

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: East Yale Loop  
 Road Segment: Osborn Street to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,986 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,071 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.33	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.1	62.1	60.3	54.2	62.9	63.5
Medium Trucks:	57.1	56.4	50.1	48.5	57.0	57.2
Heavy Trucks:	58.4	57.8	48.8	50.0	58.4	58.5
Vehicle Noise:	65.1	64.2	61.0	56.4	64.9	65.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	62	134	288
CNEL:	31	66	143	308

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: East Yale Loop  
 Road Segment: Yale Avenue to Springbrook South

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,997 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 990 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.48	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.68	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.8	61.7	60.0	53.9	62.5	63.1	
Medium Trucks:	56.8	56.1	49.7	48.2	56.6	56.9	
Heavy Trucks:	58.1	57.5	48.4	49.7	58.1	58.2	
Vehicle Noise:	64.8	63.9	60.6	56.1	64.6	65.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	59	127	273
CNEL:	29	63	136	292

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: East Yale Loop  
 Road Segment: Springbrook North to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,626 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 712 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.92	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.16	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.11	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.3	60.3	58.5	52.5	61.1	61.7	
Medium Trucks:	55.3	54.6	48.3	46.7	55.2	55.4	
Heavy Trucks:	56.6	56.1	47.0	48.3	56.6	56.7	
Vehicle Noise:	63.4	62.5	59.2	54.6	63.2	63.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	102	219
CNEL:	23	51	109	235

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: East Yale Loop  
 Road Segment: Woodspring to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,261 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 599 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.67	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.86	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.6	59.5	57.8	51.7	60.3	60.9	
Medium Trucks:	54.6	53.9	47.5	46.0	54.5	54.7	
Heavy Trucks:	55.9	55.3	46.3	47.5	55.9	56.0	
Vehicle Noise:	62.6	61.7	58.4	53.9	62.4	62.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	42	91	195
CNEL:	21	45	97	209

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: East Yale Loop  
 Road Segment: Barranca Parkway to Eastshore

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,685 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	552 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.22	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.2	59.2	57.4	51.4	60.0	60.6
Medium Trucks:	54.2	53.5	47.2	45.6	54.1	54.3
Heavy Trucks:	55.5	54.9	45.9	47.2	55.5	55.6
Vehicle Noise:	62.2	61.4	58.1	53.5	62.1	62.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	40	86	185
CNEL:	20	43	92	198

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Eastwood  
 Road Segment: Bryan Avenue to Monticello

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,260 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 269 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-6.56	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-23.80	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-27.76	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	58.4	57.3	55.5	49.5	58.1	58.7	
Medium Trucks:	52.6	51.9	45.6	44.0	52.5	52.7	
Heavy Trucks:	54.4	53.9	44.8	46.1	54.4	54.6	
Vehicle Noise:	60.6	59.7	56.3	51.9	60.4	60.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	40	86
CNEL:	9	20	43	92

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Eastwood  
 Road Segment: Columbus to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,057 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	170 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-8.56	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-25.80	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-29.76	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.4	55.3	53.5	47.5	56.1	56.7
Medium Trucks:	50.6	49.9	43.6	42.0	50.5	50.7
Heavy Trucks:	52.4	51.9	42.8	44.1	52.4	52.6
Vehicle Noise:	58.6	57.7	54.3	49.9	58.4	58.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	14	29	63
CNEL:	7	15	31	68



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: El Camino Real  
 Road Segment: Jamboree Road to Alliance (SR-261 Bridge)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,548 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,613 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.64	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.60	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.56	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.9	63.8	62.1	56.0	64.6	65.2	
Medium Trucks:	58.9	58.2	51.8	50.3	58.8	59.0	
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3	
Vehicle Noise:	66.9	66.0	62.7	58.2	66.7	67.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	175	378
CNEL:	40	87	188	405

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: El Camino Real North  
 Road Segment: El Camino Real to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,459 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	533 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.41	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.37	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.1	59.0	57.3	51.2	59.8	60.4
Medium Trucks:	54.1	53.4	47.0	45.5	53.9	54.2
Heavy Trucks:	55.4	54.8	45.8	47.0	55.4	55.5
Vehicle Noise:	62.1	61.2	57.9	53.4	61.9	62.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	84	181
CNEL:	19	42	90	193

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Fairbanks  
 Road Segment: Alton Parkway to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,795 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,551 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 37.138				
Road Grade: 0.0%		Medium Trucks: 37.030				
Left View: -90.0 degrees		Heavy Trucks: 37.139				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.47	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-16.77	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-20.73	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.5	64.8	58.7	67.3	68.0
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0
Vehicle Noise:	69.6	68.7	65.4	60.9	69.4	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	160	344
CNEL:	37	79	171	368

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Fairbanks  
 Road Segment: Irvine Boulevard to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,507 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 784 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.49	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-19.73	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-23.69	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.7	63.6	61.8	55.8	64.4	65.0	
Medium Trucks:	58.6	58.0	51.6	50.1	58.5	58.7	
Heavy Trucks:	59.9	59.4	50.3	51.6	59.9	60.0	
Vehicle Noise:	66.7	65.8	62.5	57.9	66.5	66.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	101	218
CNEL:	23	50	108	234

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Fairchild Road  
 Road Segment: MacArthur Boulevard to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,094 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 585 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.47	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.9	60.9	59.1	53.1	61.7	62.3	
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8	
Heavy Trucks:	56.5	55.9	46.9	48.2	56.5	56.6	
Vehicle Noise:	63.8	62.9	59.7	55.0	63.6	64.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	233
CNEL:	25	54	116	250

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Gateway Boulevard  
 Road Segment: Alton Parkway to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,817 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,387 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	1.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-16.01	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-19.96	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.7	59.7	57.9	51.9	60.5	61.1
Medium Trucks:	55.2	54.6	48.2	46.7	55.1	55.3
Heavy Trucks:	57.7	57.1	48.1	49.3	57.7	57.8
Vehicle Noise:	63.2	62.4	58.7	54.6	63.1	63.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	46	100	216
CNEL:	23	50	107	230

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative Project Name: Irvine GP  
 Road Name: Gateway Boulevard Job Number: 15937  
 Road Segment: Spectrum Center Drive (Fortune Drive) to Alton Parkway

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,537 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,034 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.04	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.28	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.24	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.5	58.4	56.6	50.6	59.2	59.8
Medium Trucks:	54.0	53.3	46.9	45.4	53.8	54.1
Heavy Trucks:	56.4	55.9	46.8	48.1	56.4	56.5
Vehicle Noise:	62.0	61.1	57.5	53.3	61.8	62.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	38	82	177
CNEL:	19	41	88	189

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Gateway Boulevard  
 Road Segment: Irvine Center Drive to Meridian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,264 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 517 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-3.06	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-20.30	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-24.25	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	56.4	55.4	53.6	47.6	56.2	56.8	
Medium Trucks:	50.9	50.3	43.9	42.4	50.8	51.1	
Heavy Trucks:	53.4	52.8	43.8	45.1	53.4	53.5	
Vehicle Noise:	59.0	58.1	54.5	50.3	58.8	59.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	112
CNEL:	12	26	55	119



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Great Park Boulevard  
 Road Segment: Sand Canyon to Ridge Valley

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,662 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,767 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.35	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-13.89	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.84	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.6	71.5	69.8	63.7	72.3	73.0	
Medium Trucks:	66.2	65.5	59.1	57.6	66.1	66.3	
Heavy Trucks:	66.6	66.0	57.0	58.2	66.6	66.7	
Vehicle Noise:	74.3	73.4	70.3	65.6	74.1	74.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	243	523	1,127
CNEL:	121	261	562	1,211

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Great Park Boulevard  
 Road Segment: Ridge Valley (O Street) to Bosque (LY Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,409 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,931 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.45	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.79	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.74	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.8
Medium Trucks:	62.0	61.3	54.9	53.4	61.9	62.1
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	70.1	69.2	66.1	61.4	69.9	70.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	286	616
CNEL:	66	143	307	662

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Great Park Boulevard (EB)  
 Road Segment: Bosque to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,050 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 747 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.68	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-20.92	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-24.87	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.1	64.3	58.3	66.9	67.5
Medium Trucks:	60.7	60.1	53.7	52.2	60.6	60.9
Heavy Trucks:	61.1	60.6	51.5	52.8	61.1	61.2
Vehicle Noise:	68.9	67.9	64.9	60.1	68.7	69.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	66	142	305
CNEL:	33	71	152	328

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Great Park Boulevard (WB)  
 Road Segment: Bosque to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,680 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 634 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.39	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-21.63	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-25.58	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.4	65.4	63.6	57.6	66.2	66.8	
Medium Trucks:	60.0	59.4	53.0	51.4	59.9	60.1	
Heavy Trucks:	60.4	59.8	50.8	52.1	60.4	60.5	
Vehicle Noise:	68.1	67.2	64.2	59.4	67.9	68.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	59	127	274
CNEL:	29	63	136	294

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: University Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,172 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,912 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 37.138				
Road Grade: 0.0%		Medium Trucks: 37.030				
Left View: -90.0 degrees		Heavy Trucks: 37.139				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.86	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-16.38	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-20.33	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	68.9	67.1	61.1	69.7	70.3
Medium Trucks:	63.7	63.1	56.7	55.1	63.6	63.8
Heavy Trucks:	64.6	64.0	54.9	56.2	64.5	64.7
Vehicle Noise:	71.8	70.9	67.7	63.1	71.6	72.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	223	480
CNEL:	51	111	239	514

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Michelson Drive to Coronado

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,339 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,585 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.02	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	62.1	61.5	55.1	53.6	62.0	62.3
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	70.2	69.3	66.2	61.5	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	135	292	628
CNEL:	67	145	313	674

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: San Marino to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,801 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,459 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.96	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.28	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.24	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.1	65.3	59.3	67.9	68.5
Medium Trucks:	61.9	61.3	54.9	53.3	61.8	62.0
Heavy Trucks:	62.8	62.2	53.1	54.4	62.8	62.9
Vehicle Noise:	70.0	69.1	65.9	61.3	69.8	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	282	607
CNEL:	65	140	302	651

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Coronado to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,155 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,405 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.86	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.33	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.2	59.2	67.8	68.4
Medium Trucks:	61.8	61.2	54.8	53.3	61.7	61.9
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	69.9	69.0	65.9	61.2	69.7	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	278	599
CNEL:	64	138	298	642



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: San Carlo to San Marino

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,022 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,394 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.84	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.40	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.35	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.2	59.2	67.8	68.4
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	62.7	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	69.9	69.0	65.8	61.2	69.7	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	277	597
CNEL:	64	138	297	640

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Main Street to San Carlo

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,489 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,350 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.76	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.43	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	66.9	65.1	59.1	67.7	68.3
Medium Trucks:	61.7	61.1	54.7	53.2	61.6	61.8
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	69.8	68.9	65.8	61.1	69.6	70.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	274	589
CNEL:	63	136	293	632

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Alton Parkway to San Leon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,284 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,673 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.91	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.4	63.7	57.6	66.2	66.8
Medium Trucks:	60.3	59.6	53.2	51.7	60.1	60.4
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2
Vehicle Noise:	68.3	67.4	64.3	59.6	68.1	68.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	101	218	470
CNEL:	50	109	234	504

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: San Juan to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,554 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,696 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.85	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.5	63.7	57.7	66.3	66.9
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4
Heavy Trucks:	61.2	60.6	51.5	52.8	61.1	61.3
Vehicle Noise:	68.4	67.5	64.3	59.7	68.2	68.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	102	220	474
CNEL:	51	110	236	509

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: San Leon to San Juan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,160 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,663 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.94	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.5	65.4	63.6	57.6	66.2	66.8	
Medium Trucks:	60.2	59.6	53.2	51.7	60.1	60.3	
Heavy Trucks:	61.1	60.5	51.4	52.7	61.1	61.2	
Vehicle Noise:	68.3	67.4	64.3	59.6	68.1	68.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	101	217	468
CNEL:	50	108	233	502

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	15,703 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	1,296 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.83	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.02	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.4	64.3	62.6	56.5	65.1	65.7
Medium Trucks:	59.1	58.5	52.1	50.6	59.0	59.3
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1
Vehicle Noise:	67.2	66.3	63.2	58.5	67.0	67.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	85	184	396
CNEL:	43	92	197	425

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Deerfield Avenue to Poplar Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,436 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,273 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.90	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.14	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.10	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.3	64.3	62.5	56.4	65.1	65.7	
Medium Trucks:	59.1	58.4	52.0	50.5	59.0	59.2	
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0	
Vehicle Noise:	67.1	66.2	63.1	58.4	67.0	67.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	182	392
CNEL:	42	91	195	420

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,252 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,423 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.42	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.66	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.61	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.8	64.7	63.0	56.9	65.5	66.1
Medium Trucks:	59.6	58.9	52.5	51.0	59.4	59.7
Heavy Trucks:	60.4	59.8	50.8	52.0	60.4	60.5
Vehicle Noise:	67.6	66.7	63.6	58.9	67.4	67.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	91	196	422
CNEL:	45	97	210	453



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Bridge Road to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,993 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,402 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.48	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.68	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.7	62.9	56.8	65.5	66.1
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6
Heavy Trucks:	60.3	59.7	50.7	52.0	60.3	60.4
Vehicle Noise:	67.6	66.7	63.5	58.8	67.4	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	90	194	418
CNEL:	45	97	208	448

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Paseo Westpark to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 16,907 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,395 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.51	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.74	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.70	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.7	64.6	62.9	56.8	65.4	66.1	
Medium Trucks:	59.5	58.8	52.4	50.9	59.3	59.6	
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4	
Vehicle Noise:	67.5	66.6	63.5	58.8	67.4	67.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	90	193	416
CNEL:	45	96	207	446

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Poplar Street to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,736 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,133 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 42.814				
Road Grade: 0.0%		Medium Trucks: 42.720				
Left View: -90.0 degrees		Heavy Trucks: 42.814				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.41	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	79.45	-18.65	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	84.25	-22.60	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.5	59.9	53.5	51.9	60.4	60.6
Heavy Trucks:	61.4	60.8	51.7	53.0	61.3	61.5
Vehicle Noise:	68.6	67.7	64.5	59.9	68.4	68.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	182	391
CNEL:	42	90	195	420

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: California Avenue to Berkeley Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,147 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,250 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.98	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.22	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.18	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.2	62.4	56.3	65.0	65.6
Medium Trucks:	59.0	58.3	52.0	50.4	58.9	59.1
Heavy Trucks:	59.8	59.2	50.2	51.5	59.8	59.9
Vehicle Noise:	67.1	66.2	63.0	58.3	66.9	67.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	83	180	387
CNEL:	41	89	193	415

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Culver Drive to California Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,914 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,230 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.05	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.29	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.24	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.1	62.3	56.3	64.9	65.5
Medium Trucks:	58.9	58.2	51.9	50.3	58.8	59.0
Heavy Trucks:	59.8	59.2	50.1	51.4	59.7	59.9
Vehicle Noise:	67.0	66.1	62.9	58.3	66.8	67.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	178	383
CNEL:	41	88	191	411

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Berkeley to Bridge Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,559 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,201 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.16	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.35	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.0	62.2	56.2	64.8	65.4
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9
Heavy Trucks:	59.7	59.1	50.0	51.3	59.6	59.8
Vehicle Noise:	66.9	66.0	62.8	58.2	66.7	67.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	175	377
CNEL:	40	87	188	404

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Harvard Avenue  
 Road Segment: Warner Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,284 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,096 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.55	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.79	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.75	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.7	63.6	61.8	55.8	64.4	65.0	
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5	
Heavy Trucks:	59.3	58.7	49.6	50.9	59.2	59.4	
Vehicle Noise:	66.5	65.6	62.4	57.8	66.3	66.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	164	354
CNEL:	38	82	176	380

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Hicks Canyon Drive  
 Road Segment: Delamesa to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,212 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	182 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	50.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 42.814				
Road Grade:	0.0%	Medium Trucks: 42.720				
Left View:	-90.0 degrees	Heavy Trucks: 42.814				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-8.25	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	75.75	-25.49	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	81.57	-29.44	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.8	54.7	52.9	46.9	55.5	56.1
Medium Trucks:	50.0	49.3	43.0	41.4	49.9	50.1
Heavy Trucks:	51.8	51.2	42.2	43.5	51.8	51.9
Vehicle Noise:	58.0	57.1	53.7	49.3	57.8	58.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	36	77
CNEL:	8	18	38	82



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Hornet (5th St)  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,323 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 274 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-5.02	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-22.26	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-26.21	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	54.4	53.3	51.5	45.5	54.1	54.7	
Medium Trucks:	49.2	48.5	42.2	40.6	49.1	49.3	
Heavy Trucks:	52.4	51.8	42.8	44.0	52.4	52.5	
Vehicle Noise:	57.2	56.4	52.5	48.6	57.1	57.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	11	24	52
CNEL:	5	12	25	55

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Hubble  
 Road Segment: Irvine Center Drive to Bunsen

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,420 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 200 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-6.40	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-23.63	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-27.59	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	53.0	51.9	50.1	44.1	52.7	53.3	
Medium Trucks:	47.8	47.1	40.8	39.2	47.7	47.9	
Heavy Trucks:	51.0	50.4	41.4	42.6	51.0	51.1	
Vehicle Noise:	55.9	55.0	51.1	47.2	55.7	56.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	19	42
CNEL:	4	10	21	44

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

**Scenario:** Cumulative Conservative  
**Road Name:** Irvine Boulevard  
**Road Segment:** SR-133 NB Off- Ramp to Ridge Valley (O Street)

**Project Name:** Irvine GP  
**Job Number:** 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 41,517 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,425 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.52	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.71	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.67	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	69.3	67.6	61.5	70.1	70.8
Medium Trucks:	63.8	63.1	56.8	55.2	63.7	63.9
Heavy Trucks:	63.8	63.2	54.2	55.5	63.8	63.9
Vehicle Noise:	72.0	71.1	68.1	63.2	71.8	72.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	238	513	1,105
CNEL:	119	256	552	1,188

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: SR-133 SB Off-Ramp to SR-133 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 41,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,382 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.47	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.77	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.72	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.4	69.3	67.5	61.5	70.1	70.7	
Medium Trucks:	63.7	63.1	56.7	55.2	63.6	63.9	
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9	
Vehicle Noise:	71.9	71.0	68.1	63.2	71.7	72.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	236	508	1,095
CNEL:	118	254	547	1,178

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Sand Canyon to SR-133 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,181 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,727 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.89	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.35	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.30	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.2	70.1	68.4	62.3	70.9	71.5
Medium Trucks:	64.6	63.9	57.5	56.0	64.5	64.7
Heavy Trucks:	64.6	64.0	55.0	56.2	64.6	64.7
Vehicle Noise:	72.8	71.8	68.9	64.0	72.6	73.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	119	255	550	1,185
CNEL:	128	275	592	1,275

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Merit to Alton

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 35,805 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,954 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.88	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.36	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.31	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	66.9	60.9	69.5	70.1
Medium Trucks:	63.2	62.5	56.1	54.6	63.0	63.3
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3
Vehicle Noise:	71.3	70.4	67.5	62.6	71.1	71.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	465	1,001
CNEL:	108	232	500	1,077

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Journey to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 36,637 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,023 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.98	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.26	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.21	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.9	68.8	67.0	61.0	69.6	70.2	
Medium Trucks:	63.3	62.6	56.2	54.7	63.1	63.4	
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4	
Vehicle Noise:	71.4	70.5	67.6	62.7	71.2	71.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	102	219	472	1,016
CNEL:	109	236	507	1,093

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Ridge Valley (O Street) to Bosque (LY Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,240 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,660 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos:	77.5%	12.9%	9.6%	97.42%
	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
	<b>Noise Source Elevations (in feet)</b>				
	Autos:	2.000			
	Medium Trucks:	4.000			
	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos:	74.458			
	Medium Trucks:	74.404			
	Heavy Trucks:	74.458			

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.43	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.81	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.77	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.3	68.2	66.5	60.4	69.0	69.7	
Medium Trucks:	62.7	62.0	55.7	54.1	62.6	62.8	
Heavy Trucks:	62.7	62.1	53.1	54.4	62.7	62.8	
Vehicle Noise:	70.9	70.0	67.0	62.1	70.7	71.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	201	433	933
CNEL:	100	216	466	1,004



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Pusan Way to Chinon (B Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,080 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,564 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.27	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.97	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.93	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.1	66.3	60.3	68.9	69.5
Medium Trucks:	62.5	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	62.6	62.0	52.9	54.2	62.6	62.7
Vehicle Noise:	70.7	69.8	66.8	62.0	70.5	71.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	196	423	911
CNEL:	98	211	455	980

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Palo Lado to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,664 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,777 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.61	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.62	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.58	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.5	68.4	66.7	60.6	69.2	69.8	
Medium Trucks:	62.9	62.2	55.9	54.3	62.8	63.0	
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0	
Vehicle Noise:	71.1	70.1	67.2	62.3	70.9	71.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	96	207	446	960
CNEL:	103	223	480	1,033

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Culver Drive to Palo Lado

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,323 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,749 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.57	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.67	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.62	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.5	68.4	66.6	60.6	69.2	69.8	
Medium Trucks:	62.8	62.2	55.8	54.3	62.7	63.0	
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0	
Vehicle Noise:	71.0	70.1	67.1	62.3	70.8	71.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	95	206	443	954
CNEL:	103	221	476	1,026

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: SR-261 SB Off-Ramp to SR-261 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,007 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,641 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.39	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.84	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.80	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.3	68.2	66.4	60.4	69.0	69.6	
Medium Trucks:	62.7	62.0	55.6	54.1	62.5	62.8	
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8	
Vehicle Noise:	70.9	69.9	67.0	62.1	70.7	71.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	200	431	929
CNEL:	100	215	464	999

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Old Myford Road to Market Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,352 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,669 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.44	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.80	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.75	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.3	66.5	60.4	69.1	69.7
Medium Trucks:	62.7	62.0	55.7	54.1	62.6	62.8
Heavy Trucks:	62.7	62.2	53.1	54.4	62.7	62.9
Vehicle Noise:	70.9	70.0	67.0	62.1	70.7	71.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	94	202	434	935
CNEL:	101	217	467	1,006

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Bosque (LY Street) to Modjeska

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,429 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,675 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.45	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.79	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.74	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.3	66.5	60.5	69.1	69.7
Medium Trucks:	62.7	62.1	55.7	54.1	62.6	62.8
Heavy Trucks:	62.8	62.2	53.1	54.4	62.7	62.9
Vehicle Noise:	70.9	70.0	67.0	62.2	70.7	71.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	94	202	435	937
CNEL:	101	217	468	1,008

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Jamboree Road to Old Myford Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,680 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,614 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.35	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.89	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.84	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.2	68.2	66.4	60.3	69.0	69.6	
Medium Trucks:	62.6	62.0	55.6	54.0	62.5	62.7	
Heavy Trucks:	62.7	62.1	53.0	54.3	62.6	62.8	
Vehicle Noise:	70.8	69.9	66.9	62.1	70.6	71.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	199	428	922
CNEL:	99	214	461	992

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Market Place to SR-261 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,554 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,603 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.33	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.91	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.86	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.2	66.4	60.3	69.0	69.6
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	62.6	62.1	53.0	54.3	62.6	62.7
Vehicle Noise:	70.8	69.9	66.9	62.0	70.6	71.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	427	920
CNEL:	99	213	459	990



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Jeffrey Road to Groveland

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,022 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,642 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.40	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.84	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.80	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.2	66.5	60.4	69.0	69.6
Medium Trucks:	62.7	62.0	55.6	54.1	62.6	62.8
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.9	69.9	67.0	62.1	70.7	71.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	200	431	929
CNEL:	100	215	464	999

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Bake Parkway to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,197 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,326 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.84	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.39	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.35	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.7	65.9	59.8	68.5	69.1
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2
Heavy Trucks:	62.1	61.6	52.5	53.8	62.1	62.3
Vehicle Noise:	70.3	69.4	66.4	61.6	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	184	396	853
CNEL:	92	198	426	918

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative      Project Name: Irvine GP  
 Road Name: Irvine Boulevard      Job Number: 15937  
 Road Segment: Independence Way (The Groves)/The Groves to Jeffrey Road

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,427 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,428 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.21	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.16	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.8	66.1	60.0	68.7	69.3
Medium Trucks:	62.3	61.6	55.3	53.7	62.2	62.4
Heavy Trucks:	62.3	61.7	52.7	54.0	62.3	62.4
Vehicle Noise:	70.5	69.6	66.6	61.7	70.3	70.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	189	408	878
CNEL:	94	204	438	945

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Chinon (B Street) to Merit

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,405 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,261 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.72	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.52	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.47	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	68.9
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.0	61.4	52.4	53.7	62.0	62.1
Vehicle Noise:	70.2	69.3	66.3	61.4	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	180	389	837
CNEL:	90	194	418	901

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: SR-261 NB Off-Ramp to Central Park

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,707 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,368 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.92	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.32	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.27	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	66.0	59.9	68.5	69.1
Medium Trucks:	62.2	61.5	55.2	53.6	62.1	62.3
Heavy Trucks:	62.2	61.6	52.6	53.9	62.2	62.3
Vehicle Noise:	70.4	69.5	66.5	61.6	70.2	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	186	401	864
CNEL:	93	200	431	929

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative Project Name: Irvine GP  
 Road Name: Irvine Boulevard Job Number: 15937  
 Road Segment: Pueblo Norte to Independence Way (The Groves)/ Parkwood

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,114 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,319 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.83	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.41	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.36	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.7	65.9	59.8	68.5	69.1
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2
Heavy Trucks:	62.1	61.5	52.5	53.8	62.1	62.2
Vehicle Noise:	70.3	69.4	66.4	61.5	70.1	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	184	395	852
CNEL:	92	197	425	916

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Yale Avenue to Pueblo Norte

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,924 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,304 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.80	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.44	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.39	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.9	59.8	68.4	69.0	
Medium Trucks:	62.1	61.4	55.0	53.5	62.0	62.2	
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2	
Vehicle Noise:	70.3	69.3	66.4	61.5	70.1	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	183	394	848
CNEL:	91	197	423	912

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Modjeska to Pusan Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,040 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,148 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.50	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.74	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.70	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.3	65.6	59.5	68.1	68.7	
Medium Trucks:	61.8	61.1	54.7	53.2	61.7	61.9	
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9	
Vehicle Noise:	70.0	69.0	66.1	61.2	69.8	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	376	809
CNEL:	87	188	404	871



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Central Park Avenue to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,842 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,049 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos:	77.5%	12.9%	9.6%	97.42%
	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
	<b>Noise Source Elevations (in feet)</b>				
	Autos:	2.000			
	Medium Trucks:	4.000			
	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos:	74.458			
	Medium Trucks:	74.404			
	Heavy Trucks:	74.458			

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.29	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.94	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.90	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.1	65.3	59.3	67.9	68.5
Medium Trucks:	61.6	60.9	54.5	53.0	61.4	61.7
Heavy Trucks:	61.6	61.0	52.0	53.2	61.6	61.7
Vehicle Noise:	69.8	68.8	65.9	61.0	69.6	70.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	169	364	784
CNEL:	84	182	392	844

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Parker to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,962 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,894 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.05	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.29	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.24	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.8	65.0	59.0	67.6	68.2
Medium Trucks:	61.2	60.6	54.2	52.6	61.1	61.3
Heavy Trucks:	61.3	60.7	51.6	52.9	61.2	61.4
Vehicle Noise:	69.4	68.5	65.5	60.7	69.2	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	345	744
CNEL:	80	173	372	801

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Boulevard  
 Road Segment: Alton Parkway to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,955 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,481 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-18.35	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-22.31	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.2	59.5	53.1	51.6	60.0	60.3
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3
Vehicle Noise:	68.3	67.4	64.5	59.6	68.1	68.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	293	632
CNEL:	68	146	315	680

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative Project Name: Irvine GP  
 Road Name: Irvine Center Drive Job Number: 15937  
 Road Segment: Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 53,953 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,451 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.08	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.16	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.12	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.7	68.0	61.9	70.5	71.1
Medium Trucks:	64.4	63.7	57.3	55.8	64.2	64.5
Heavy Trucks:	64.8	64.2	55.2	56.4	64.8	64.9
Vehicle Noise:	72.5	71.6	68.5	63.7	72.3	72.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	245	528	1,137
CNEL:	122	263	567	1,222

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Orange Tree to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 50,142 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,137 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.76	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.48	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.44	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.1	69.0	67.2	61.2	69.8	70.4	
Medium Trucks:	63.6	63.0	56.6	55.0	63.5	63.7	
Heavy Trucks:	64.0	63.5	54.4	55.7	64.0	64.2	
Vehicle Noise:	71.8	70.8	67.8	63.0	71.6	72.0	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	107	230	495	1,067
CNEL:	115	247	532	1,147

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: I-405 SB Off-Ramp to Research

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 48,675 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,016 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.63	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.61	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.57	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.3	67.5	61.5	70.1	70.7
Medium Trucks:	63.9	63.2	56.9	55.3	63.8	64.0
Heavy Trucks:	64.3	63.7	54.7	56.0	64.3	64.4
Vehicle Noise:	72.0	71.1	68.1	63.3	71.8	72.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	229	493	1,062
CNEL:	114	246	529	1,141

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Irvine Valley College to Orange Tree

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 49,177 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,057 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.56	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.52	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.0	68.9	67.2	61.1	69.7	70.3	
Medium Trucks:	63.5	62.9	56.5	55.0	63.4	63.7	
Heavy Trucks:	64.0	63.4	54.3	55.6	63.9	64.1	
Vehicle Noise:	71.7	70.8	67.7	62.9	71.5	71.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	105	227	489	1,054
CNEL:	113	244	525	1,132

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Fontaine Avenue to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,660 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,849 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.45	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.79	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.75	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	66.9	60.9	69.5	70.1
Medium Trucks:	63.3	62.6	56.3	54.7	63.2	63.4
Heavy Trucks:	63.7	63.1	54.1	55.4	63.7	63.8
Vehicle Noise:	71.4	70.5	67.5	62.7	71.2	71.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	102	219	472	1,017
CNEL:	109	236	507	1,093



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Culver Drive to Deerwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,919 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,788 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.38	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.86	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.82	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.7	68.6	66.9	60.8	69.4	70.0	
Medium Trucks:	63.2	62.6	56.2	54.7	63.1	63.4	
Heavy Trucks:	63.7	63.1	54.0	55.3	63.6	63.8	
Vehicle Noise:	71.4	70.5	67.4	62.6	71.2	71.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	217	467	1,007
CNEL:	108	233	502	1,082

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Deerwood to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,516 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,755 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.34	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.90	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.86	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.6	66.8	60.8	69.4	70.0
Medium Trucks:	63.2	62.5	56.2	54.6	63.1	63.3
Heavy Trucks:	63.6	63.0	54.0	55.3	63.6	63.7
Vehicle Noise:	71.3	70.4	67.4	62.6	71.1	71.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	465	1,001
CNEL:	108	232	499	1,075

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Yale Avenue to Fontaine Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,236 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,814 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.41	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.83	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.79	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.9	60.8	69.5	70.1
Medium Trucks:	63.3	62.6	56.2	54.7	63.2	63.4
Heavy Trucks:	63.7	63.1	54.1	55.3	63.7	63.8
Vehicle Noise:	71.4	70.5	67.4	62.7	71.2	71.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	218	469	1,011
CNEL:	109	234	504	1,087

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Jeffrey Road to Irvine Valley College

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,688 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,687 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.26	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.98	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.94	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.7	60.7	69.3	69.9
Medium Trucks:	63.1	62.5	56.1	54.5	63.0	63.2
Heavy Trucks:	63.5	63.0	53.9	55.2	63.5	63.7
Vehicle Noise:	71.3	70.3	67.3	62.5	71.1	71.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	99	213	459	989
CNEL:	106	229	493	1,062

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Alton Parkway to Spectrum

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 42,966 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,545 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.09	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.15	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.11	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.4	68.3	66.6	60.5	69.1	69.7
Medium Trucks:	63.0	62.3	55.9	54.4	62.8	63.1
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	71.1	70.2	67.1	62.3	70.9	71.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	96	207	447	963
CNEL:	103	223	480	1,035

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Spectrum to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 42,370 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,496 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.21	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.17	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.3	66.5	60.4	69.1	69.7
Medium Trucks:	62.9	62.2	55.9	54.3	62.8	63.0
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4
Vehicle Noise:	71.0	70.1	67.1	62.3	70.8	71.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	95	206	443	954
CNEL:	103	221	476	1,025

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Hearthstone to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,645 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,271 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.74	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.50	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.46	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	68.0	66.2	60.2	68.8	69.4
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	63.0	62.4	53.4	54.7	63.0	63.1
Vehicle Noise:	70.7	69.8	66.8	62.0	70.5	71.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	197	424	913
CNEL:	98	211	455	981

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Charter to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,266 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,239 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.70	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.54	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.50	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	67.9	66.2	60.1	68.7	69.3
Medium Trucks:	62.6	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	70.7	69.8	66.7	62.0	70.5	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	195	421	907
CNEL:	97	210	452	974



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Jamboree Road to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,938 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,965 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.31	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.93	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.88	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.6	65.8	59.7	68.4	69.0
Medium Trucks:	62.2	61.5	55.1	53.6	62.1	62.3
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	70.3	69.4	66.4	61.6	70.1	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	184	397	855
CNEL:	92	198	426	919

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Pacifica to Entertainment (Enterprise/Fortune)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 37,251 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,073 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.47	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.77	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.73	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.3	61.7	55.3	53.8	62.2	62.5
Heavy Trucks:	62.8	62.2	53.1	54.4	62.7	62.9
Vehicle Noise:	70.5	69.6	66.5	61.7	70.3	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	189	406	876
CNEL:	94	203	437	941

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 37,095 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,060 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.45	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.79	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.75	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.3	61.6	55.3	53.7	62.2	62.4
Heavy Trucks:	62.7	62.1	53.1	54.4	62.7	62.8
Vehicle Noise:	70.4	69.5	66.5	61.7	70.3	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	188	405	873
CNEL:	94	202	435	938

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Harvard Avenue to Hearthstone

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 34,007 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,806 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.07	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.17	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.12	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.1
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5
Vehicle Noise:	70.1	69.2	66.1	61.3	69.9	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	178	382	824
CNEL:	89	191	411	885

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Research to Hubble

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,287 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,581 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.48	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	67.0	65.2	59.1	67.8	68.4
Medium Trucks:	61.6	60.9	54.5	53.0	61.5	61.7
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	69.7	68.8	65.8	61.0	69.5	70.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	168	362	779
CNEL:	84	180	389	837

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Barranca Parkway to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,542 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,685 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.88	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.36	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.31	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.1	65.4	59.3	67.9	68.5
Medium Trucks:	61.7	61.1	54.7	53.2	61.6	61.9
Heavy Trucks:	62.2	61.6	52.5	53.8	62.1	62.3
Vehicle Noise:	69.9	69.0	65.9	61.1	69.7	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	172	371	800
CNEL:	86	185	399	860

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Bake Parkway to Muller

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,258 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,496 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.56	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.67	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.63	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.8	65.0	59.0	67.6	68.2
Medium Trucks:	61.4	60.8	54.4	52.9	61.3	61.5
Heavy Trucks:	61.9	61.3	52.2	53.5	61.8	62.0
Vehicle Noise:	69.6	68.6	65.6	60.8	69.4	69.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	164	354	762
CNEL:	82	176	380	819

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Discovery to Charter

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,253 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,743 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.97	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.26	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.22	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.2	65.5	59.4	68.0	68.6
Medium Trucks:	61.8	61.2	54.8	53.3	61.7	62.0
Heavy Trucks:	62.3	61.7	52.6	53.9	62.2	62.4
Vehicle Noise:	70.0	69.1	66.0	61.2	69.8	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	175	377	812
CNEL:	87	188	405	872



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Hubble to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,520 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,353 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.31	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.93	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.89	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.6	66.6	64.8	58.7	67.4	68.0	
Medium Trucks:	61.2	60.5	54.1	52.6	61.1	61.3	
Heavy Trucks:	61.6	61.0	52.0	53.2	61.6	61.7	
Vehicle Noise:	69.3	68.4	65.3	60.6	69.1	69.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	158	340	733
CNEL:	79	170	365	787

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Muller to Tesla

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,303 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,252 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.12	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.08	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.4	64.6	58.5	67.2	67.8
Medium Trucks:	61.0	60.3	54.0	52.4	60.9	61.1
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5
Vehicle Noise:	69.1	68.2	65.2	60.4	68.9	69.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	153	330	712
CNEL:	76	165	355	765

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Sand Canyon Avenue to Odyssey

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,449 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,265 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.14	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.10	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.05	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.4	64.6	58.6	67.2	67.8
Medium Trucks:	61.0	60.3	54.0	52.4	60.9	61.1
Heavy Trucks:	61.4	60.8	51.8	53.1	61.4	61.5
Vehicle Noise:	69.1	68.2	65.2	60.4	68.9	69.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	154	332	714
CNEL:	77	165	356	768

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Tesla to Scientific Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,259 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,084 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.78	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.46	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.41	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.1	66.0	64.3	58.2	66.8	67.4	
Medium Trucks:	60.6	60.0	53.6	52.1	60.5	60.8	
Heavy Trucks:	61.1	60.5	51.4	52.7	61.0	61.2	
Vehicle Noise:	68.8	67.9	64.8	60.0	68.6	69.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	146	314	676
CNEL:	73	156	337	726

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Scientific Way to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,211 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,997 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.60	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.64	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.60	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.9	65.8	64.1	58.0	66.6	67.2	
Medium Trucks:	60.5	59.8	53.4	51.9	60.3	60.6	
Heavy Trucks:	60.9	60.3	51.3	52.5	60.9	61.0	
Vehicle Noise:	68.6	67.7	64.6	59.9	68.4	68.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	142	305	657
CNEL:	71	152	328	706

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Gateway Boulevard to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,509 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,022 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.65	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.59	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.54	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	65.9	64.1	58.1	66.7	67.3
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	60.9	60.3	51.3	52.6	60.9	61.0
Vehicle Noise:	68.7	67.7	64.7	59.9	68.5	68.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	143	307	662
CNEL:	71	153	330	712

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Laguna Canyon Road to Discovery

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,356 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,009 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.62	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.62	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.57	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.9	65.9	64.1	58.0	66.7	67.3
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	60.9	60.3	51.3	52.5	60.9	61.0
Vehicle Noise:	68.6	67.7	64.7	59.9	68.4	68.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	142	306	660
CNEL:	71	153	329	709

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive  
 Road Segment: Odyssey to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,191 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,996 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.59	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.65	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.60	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.9	65.8	64.1	58.0	66.6	67.2
Medium Trucks:	60.5	59.8	53.4	51.9	60.3	60.6
Heavy Trucks:	60.9	60.3	51.3	52.5	60.9	61.0
Vehicle Noise:	68.6	67.7	64.6	59.8	68.4	68.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	141	305	657
CNEL:	71	152	327	705



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Irvine Center Drive (Edinger)  
 Road Segment: Redhill Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 40,036 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,303 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.78	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.46	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.41	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.3	60.2	68.8	69.4
Medium Trucks:	62.6	62.0	55.6	54.1	62.5	62.8
Heavy Trucks:	63.1	62.5	53.4	54.7	63.0	63.2
Vehicle Noise:	70.8	69.9	66.8	62.0	70.6	71.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	426	919
CNEL:	99	213	458	987

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: I-5 SB Off-Ramp to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 69,825 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,761 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.78	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-12.46	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-16.41	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.7	71.6	69.8	63.8	72.4	73.0
Medium Trucks:	66.1	65.4	59.0	57.5	65.9	66.2
Heavy Trucks:	66.1	65.5	56.5	57.7	66.1	66.2
Vehicle Noise:	74.2	73.3	70.4	65.5	74.0	74.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	156	337	725	1,562
CNEL:	168	362	780	1,681

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 82,589 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 6,814 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.51	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-11.73	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-15.68	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.8	72.7	71.0	64.9	73.5	74.1
Medium Trucks:	67.2	66.5	60.2	58.6	67.1	67.3
Heavy Trucks:	67.2	66.6	57.6	58.9	67.2	67.3
Vehicle Noise:	75.4	74.5	71.5	66.6	75.2	75.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	177	382	823	1,772
CNEL:	191	411	885	1,906

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Walnut Avenue to Michelle Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 60,520 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,993 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.16	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.08	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.03	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.0	71.0	69.2	63.2	71.8	72.4
Medium Trucks:	65.4	64.8	58.4	56.9	65.3	65.5
Heavy Trucks:	65.5	64.9	55.8	57.1	65.4	65.6
Vehicle Noise:	73.6	72.7	69.7	64.9	73.4	73.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	142	306	659	1,420
CNEL:	153	329	709	1,528

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: I-405 NB Off-Ramp to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 82,134 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 6,776 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.49	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-11.75	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-15.71	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	75.2	74.1	72.3	66.3	74.9	75.5	
Medium Trucks:	68.6	67.9	61.5	60.0	68.4	68.7	
Heavy Trucks:	68.6	68.0	59.0	60.2	68.6	68.7	
Vehicle Noise:	76.7	75.8	72.9	68.0	76.5	77.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	273	587	1,266	2,727
CNEL:	293	632	1,362	2,933

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Michelle Drive to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 56,389 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,652 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.85	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.38	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.34	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.7	70.7	68.9	62.9	71.5	72.1	
Medium Trucks:	65.1	64.5	58.1	56.5	65.0	65.2	
Heavy Trucks:	65.2	64.6	55.5	56.8	65.1	65.3	
Vehicle Noise:	73.3	72.4	69.4	64.6	73.1	73.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	135	292	629	1,355
CNEL:	146	314	676	1,457

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Main Street to Kelvin Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 71,714 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,916 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.90	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.34	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.30	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.6	73.5	71.7	65.7	74.3	74.9
Medium Trucks:	68.0	67.3	60.9	59.4	67.8	68.1
Heavy Trucks:	68.0	67.4	58.4	59.6	68.0	68.1
Vehicle Noise:	76.1	75.2	72.3	67.4	75.9	76.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	249	537	1,156	2,491
CNEL:	268	577	1,244	2,680

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 88,960 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 7,339 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 130 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 88.792 Medium Trucks: 88.747 Heavy Trucks: 88.792																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.83	-3.84	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-11.40	-3.84	-1.20	-4.96	0.000	0.000
Heavy Trucks:	86.40	-15.36	-3.84	-1.20	-5.14	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.6	71.5	69.7	63.7	72.3	72.9
Medium Trucks:	66.0	65.3	58.9	57.4	65.8	66.1
Heavy Trucks:	66.0	65.4	56.4	57.6	66.0	66.1
Vehicle Noise:	74.1	73.2	70.3	65.4	73.9	74.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	202	434	936	2,016
CNEL:	217	467	1,007	2,169



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Kelvin Avenue to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 66,488 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,485 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.57	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.67	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.62	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.2	73.2	71.4	65.4	74.0	74.6
Medium Trucks:	67.6	67.0	60.6	59.1	67.5	67.7
Heavy Trucks:	67.7	67.1	58.0	59.3	67.6	67.8
Vehicle Noise:	75.8	74.9	71.9	67.1	75.6	76.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	237	510	1,099	2,368
CNEL:	255	549	1,183	2,548

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 65,760 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,425 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.52	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.72	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.67	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.2	73.1	71.4	65.3	73.9	74.5
Medium Trucks:	67.6	66.9	60.6	59.0	67.5	67.7
Heavy Trucks:	67.6	67.0	58.0	59.2	67.6	67.7
Vehicle Noise:	75.8	74.8	71.9	67.0	75.6	76.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	235	507	1,091	2,351
CNEL:	253	545	1,174	2,529

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Birch Street to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 50,222 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,143 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.35	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.89	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.84	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.2	70.2	68.4	62.4	71.0	71.6
Medium Trucks:	64.6	64.0	57.6	56.0	64.5	64.7
Heavy Trucks:	64.7	64.1	55.0	56.3	64.6	64.8
Vehicle Noise:	72.8	71.9	68.9	64.1	72.6	73.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	125	270	582	1,254
CNEL:	135	291	626	1,349

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Dupont Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 56,292 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,644 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.85	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.39	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.35	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.1	71.1	69.3	63.3	71.9	72.5
Medium Trucks:	65.5	64.9	58.5	57.0	65.4	65.6
Heavy Trucks:	65.6	65.0	55.9	57.2	65.5	65.7
Vehicle Noise:	73.7	72.8	69.8	65.0	73.5	74.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	137	296	637	1,372
CNEL:	148	318	685	1,477

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Alton Parkway to Beckman

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 60,116 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,960 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.13	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.11	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.06	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.8	72.7	71.0	64.9	73.5	74.1	
Medium Trucks:	67.2	66.5	60.2	58.6	67.1	67.3	
Heavy Trucks:	67.2	66.6	57.6	58.9	67.2	67.3	
Vehicle Noise:	75.4	74.5	71.5	66.6	75.2	75.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	221	477	1,028	2,215
CNEL:	238	513	1,106	2,382

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Fairchild Road to Birch Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 51,524 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,251 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.46	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.78	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.73	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.8	70.7	68.9	62.9	71.5	72.1
Medium Trucks:	65.1	64.5	58.1	56.6	65.0	65.3
Heavy Trucks:	65.2	64.6	55.6	56.8	65.2	65.3
Vehicle Noise:	73.3	72.4	69.5	64.6	73.1	73.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	129	279	601	1,294
CNEL:	139	300	646	1,392

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Beckman to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 55,530 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,581 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.79	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.45	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.41	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.5	72.4	70.6	64.6	73.2	73.8
Medium Trucks:	66.9	66.2	59.8	58.3	66.7	67.0
Heavy Trucks:	66.9	66.3	57.3	58.5	66.9	67.0
Vehicle Noise:	75.0	74.1	71.2	66.3	74.8	75.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	210	453	975	2,100
CNEL:	226	487	1,049	2,260

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: I-5 NB Off-Ramp to El Camino Real

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 52,710 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,349 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 56.593				
Road Grade: 0.0%	Medium Trucks: 56.522				
Left View: -90.0 degrees	Heavy Trucks: 56.593				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.56	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.68	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.63	-0.91	-1.20	-5.16	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.2	72.2	70.4	64.3	73.0	73.6	
Medium Trucks:	66.6	66.0	59.6	58.0	66.5	66.7	
Heavy Trucks:	66.7	66.1	57.0	58.3	66.6	66.8	
Vehicle Noise:	74.8	73.9	70.9	66.1	74.6	75.1	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	203	437	942	2,029
CNEL:	218	470	1,013	2,182



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Campus Drive to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 47,220 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,896 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
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### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.08	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.16	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.11	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.4	70.3	68.5	62.5	71.1	71.7
Medium Trucks:	64.8	64.1	57.7	56.2	64.6	64.9
Heavy Trucks:	64.8	64.2	55.2	56.4	64.8	64.9
Vehicle Noise:	73.0	72.0	69.1	64.2	72.8	73.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	122	263	567	1,221
CNEL:	131	283	610	1,313

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: El Camino Real to West Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 50,741 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,186 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.40	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.84	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.80	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.1	72.0	70.2	64.2	72.8	73.4
Medium Trucks:	66.5	65.8	59.4	57.9	66.3	66.6
Heavy Trucks:	66.5	65.9	56.9	58.1	66.5	66.6
Vehicle Noise:	74.6	73.7	70.8	65.9	74.4	74.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	198	426	918	1,978
CNEL:	213	458	988	2,128

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: West Drive to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 50,973 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,205 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.42	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.82	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.78	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.1	72.0	70.3	64.2	72.8	73.4
Medium Trucks:	66.5	65.8	59.4	57.9	66.4	66.6
Heavy Trucks:	66.5	65.9	56.9	58.1	66.5	66.6
Vehicle Noise:	74.7	73.7	70.8	65.9	74.5	74.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	198	427	921	1,984
CNEL:	213	460	991	2,134

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Bryan Avenue to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,016 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,879 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.06	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-14.17	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-18.13	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.7	71.7	69.9	63.9	72.5	73.1
Medium Trucks:	66.1	65.5	59.1	57.5	66.0	66.2
Heavy Trucks:	66.2	65.6	56.5	57.8	66.1	66.3
Vehicle Noise:	74.3	73.4	70.4	65.6	74.1	74.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	188	405	873	1,880
CNEL:	202	436	939	2,022

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Koll Center to Fairchild Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 43,783 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,612 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.76	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.48	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.44	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.0	70.0	68.2	62.2	70.8	71.4
Medium Trucks:	64.4	63.8	57.4	55.9	64.3	64.6
Heavy Trucks:	64.5	63.9	54.8	56.1	64.5	64.6
Vehicle Noise:	72.6	71.7	68.7	63.9	72.4	72.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	116	250	539	1,161
CNEL:	125	269	580	1,249

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: MacArthur Boulevard to Koll Center

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 43,209 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,565 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.70	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.54	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.50	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.0	69.9	68.2	62.1	70.7	71.3
Medium Trucks:	64.4	63.7	57.3	55.8	64.3	64.5
Heavy Trucks:	64.4	63.8	54.8	56.0	64.4	64.5
Vehicle Noise:	72.6	71.6	68.7	63.8	72.4	72.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	248	534	1,151
CNEL:	124	267	575	1,238

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Irvine Boulevard to Portola Pakway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,920 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,386 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.95	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.28	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.24	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	62.2	61.6	55.2	53.6	62.1	62.3
Heavy Trucks:	62.3	61.7	52.6	53.9	62.2	62.4
Vehicle Noise:	70.4	69.5	66.5	61.7	70.2	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	187	403	868
CNEL:	93	201	433	934

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Warner Avenue to Edinger Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 87,609 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 7,228 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 96 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.438 Medium Trucks: 42.344 Heavy Trucks: 42.439																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.77	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-11.47	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-15.43	0.96	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	77.3	76.3	74.5	68.4	77.1	77.7	
Medium Trucks:	70.7	70.0	63.7	62.1	70.6	70.8	
Heavy Trucks:	70.7	70.1	61.1	62.4	70.7	70.8	
Vehicle Noise:	78.9	78.0	75.0	70.1	78.7	79.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	243	523	1,128	2,430
CNEL:	261	563	1,213	2,614



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 72,728 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 6,000 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 96 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 64.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 64.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	42.438			
Road Grade: 0.0%	Medium Trucks:	42.344			
Left View: -90.0 degrees	Heavy Trucks:	42.439			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.96	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-12.28	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-16.24	0.96	-1.20	-5.31	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.5	75.4	73.7	67.6	76.2	76.8
Medium Trucks:	69.9	69.2	62.9	61.3	69.8	70.0
Heavy Trucks:	69.9	69.3	60.3	61.6	69.9	70.0
Vehicle Noise:	78.1	77.2	74.2	69.3	77.9	78.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	215	462	996	2,146
CNEL:	231	497	1,072	2,309

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jamboree Road  
 Road Segment: Edinger Avenue to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 66,731 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,505 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 96 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 64.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 64.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 42.438				
Road Grade: 0.0%	Medium Trucks: 42.344				
Left View: -90.0 degrees	Heavy Trucks: 42.439				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.59	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-12.65	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-16.61	0.96	-1.20	-5.31	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.1	75.1	73.3	67.2	75.9	76.5
Medium Trucks:	69.5	68.9	62.5	61.0	69.4	69.6
Heavy Trucks:	69.6	69.0	59.9	61.2	69.5	69.7
Vehicle Noise:	77.7	76.8	73.8	69.0	77.5	78.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	203	437	941	2,027
CNEL:	218	470	1,012	2,180

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Walnut Avenue to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 56,825 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,688 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.76	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.48	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.44	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.3	66.5	60.4	69.1	69.7
Medium Trucks:	63.1	62.4	56.0	54.5	63.0	63.2
Heavy Trucks:	63.9	63.3	54.3	55.5	63.9	64.0
Vehicle Noise:	71.2	70.2	67.1	62.4	71.0	71.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	210	452	974
CNEL:	104	225	485	1,045

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jeffrey Road  
 Road Segment: I-5 NB Off-Ramp to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 63,919 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,273 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	5.27	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-11.97	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-15.92	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	69.2	67.4	61.4	70.0	70.6
Medium Trucks:	64.0	63.3	57.0	55.4	63.9	64.1
Heavy Trucks:	64.8	64.3	55.2	56.5	64.8	65.0
Vehicle Noise:	72.1	71.2	68.0	63.3	71.9	72.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	107	230	496	1,069
CNEL:	115	247	532	1,146

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Poplar (Meadows) to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 51,048 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,211 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.29	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.95	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.90	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	63.5	62.9	53.8	55.1	63.4	63.6
Vehicle Noise:	70.7	69.8	66.6	62.0	70.5	71.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	195	421	907
CNEL:	97	210	452	973

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 50,925 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,201 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.28	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.96	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.91	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	63.4	62.9	53.8	55.1	63.4	63.6
Vehicle Noise:	70.7	69.8	66.6	61.9	70.5	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	195	420	905
CNEL:	97	209	451	971

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Center Drive to Poplar (Meadows)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 48,837 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,029 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.10	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.14	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.09	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5
Heavy Trucks:	63.3	62.7	53.6	54.9	63.2	63.4
Vehicle Noise:	70.5	69.6	66.4	61.8	70.3	70.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	190	409	880
CNEL:	94	203	438	944

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jeffrey Road  
 Road Segment: I-405 NB Off-Ramp to Quail Creek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 51,159 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,221 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.30	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.94	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.89	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.9	67.8	66.0	60.0	68.6	69.2	
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7	
Heavy Trucks:	63.5	62.9	53.8	55.1	63.4	63.6	
Vehicle Noise:	70.7	69.8	66.6	62.0	70.5	71.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	196	422	908
CNEL:	97	210	452	974



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Barranca Parkway to Irvine Valley College

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 48,058 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,965 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.21	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.16	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	68.9
Medium Trucks:	62.3	61.7	55.3	53.8	62.2	62.5
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3
Vehicle Noise:	70.4	69.5	66.4	61.7	70.2	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	188	404	871
CNEL:	93	201	434	934

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Quail Creek to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 49,376 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,073 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.05	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.9	59.8	68.4	69.1
Medium Trucks:	62.5	61.8	55.4	53.9	62.3	62.6
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4
Vehicle Noise:	70.5	69.6	66.5	61.8	70.4	70.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	191	412	887
CNEL:	95	205	442	951

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Valley College to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,568 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,759 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.80	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.44	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.39	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2
Heavy Trucks:	63.0	62.4	53.3	54.6	62.9	63.1
Vehicle Noise:	70.2	69.3	66.1	61.5	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	390	841
CNEL:	90	194	419	902

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Trabuco Road to Hideaway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 38,141 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,147 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.21	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.17	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.5	64.8	58.7	67.3	67.9
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	69.4	68.5	65.4	60.7	69.2	69.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	347	747
CNEL:	80	173	372	801

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Hideaway to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 38,123 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,145 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.21	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.17	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.5	64.8	58.7	67.3	67.9
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	69.4	68.5	65.4	60.7	69.2	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	346	746
CNEL:	80	173	372	801

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Roosevelt to Grove

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 41,043 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,386 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.35	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.89	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.85	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.3	65.5	59.4	68.1	68.7
Medium Trucks:	62.1	61.4	55.0	53.5	62.0	62.2
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0
Vehicle Noise:	70.2	69.2	66.1	61.4	70.0	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	171	369	795
CNEL:	85	184	396	853

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Grove to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 38,887 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,208 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.11	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.13	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.08	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.3	59.2	67.8	68.4
Medium Trucks:	61.8	61.2	54.8	53.3	61.7	62.0
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	69.9	69.0	65.9	61.2	69.7	70.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	356	767
CNEL:	82	177	382	823

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Bryan Avenue to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,374 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,423 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">VehicleType</th> <th style="text-align: center;">Day</th> <th style="text-align: center;">Evening</th> <th style="text-align: center;">Night</th> <th style="text-align: center;">Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td style="text-align: center;">77.5%</td> <td style="text-align: center;">12.9%</td> <td style="text-align: center;">9.6%</td> <td style="text-align: center;">97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td style="text-align: center;">84.8%</td> <td style="text-align: center;">4.9%</td> <td style="text-align: center;">10.3%</td> <td style="text-align: center;">1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td style="text-align: center;">86.5%</td> <td style="text-align: center;">2.7%</td> <td style="text-align: center;">10.8%</td> <td style="text-align: center;">0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.89	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.35	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.30	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.5	65.4	63.6	57.6	66.2	66.8	
Medium Trucks:	60.2	59.5	53.2	51.6	60.1	60.3	
Heavy Trucks:	61.1	60.5	51.4	52.7	61.0	61.2	
Vehicle Noise:	68.3	67.4	64.2	59.6	68.1	68.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	135	291	627
CNEL:	67	145	312	673



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Encore to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,548 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,200 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.16	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-18.40	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-22.35	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.4	62.3	60.6	54.5	63.1	63.7
Medium Trucks:	57.2	56.5	50.1	48.6	57.0	57.3
Heavy Trucks:	58.0	57.4	48.4	49.6	58.0	58.1
Vehicle Noise:	65.2	64.3	61.2	56.5	65.0	65.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	85	182	393
CNEL:	42	91	196	421

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Boulevard to Encore

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,094 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,163 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.30	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-18.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-22.49	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.3	62.2	60.4	54.4	63.0	63.6	
Medium Trucks:	57.0	56.3	50.0	48.4	56.9	57.1	
Heavy Trucks:	57.9	57.3	48.2	49.5	57.8	58.0	
Vehicle Noise:	65.1	64.2	61.0	56.4	64.9	65.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	83	178	384
CNEL:	41	89	191	412

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Jeronimo Road  
 Road Segment: Goodyear to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,085 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	667 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.71	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.90	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.5	61.4	59.7	53.6	62.2	62.8
Medium Trucks:	56.3	55.6	49.2	47.7	56.1	56.4
Heavy Trucks:	57.1	56.5	47.5	48.7	57.1	57.2
Vehicle Noise:	64.3	63.4	60.3	55.6	64.1	64.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	55	118	255
CNEL:	27	59	127	273

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Jeronimo Road  
 Road Segment: Alton Parkway to Goodyear

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 7,560 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 624 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.20	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.2	61.1	59.4	53.3	62.0	62.6
Medium Trucks:	56.0	55.3	48.9	47.4	55.9	56.1
Heavy Trucks:	56.8	56.2	47.2	48.4	56.8	56.9
Vehicle Noise:	64.0	63.1	60.0	55.3	63.9	64.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	113	243
CNEL:	26	56	121	261

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Old Laguna Canyon Road to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 53,702 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,430 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.64	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.60	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.55	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.5	68.7	62.6	71.3	71.9
Medium Trucks:	64.9	64.2	57.9	56.3	64.8	65.0
Heavy Trucks:	64.9	64.4	55.3	56.6	64.9	65.1
Vehicle Noise:	73.1	72.2	69.2	64.3	72.9	73.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	131	283	609	1,311
CNEL:	141	304	655	1,411

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Laguna Canyon Freeway to Quail Hill Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,770 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,384 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.41	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.61	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.1	67.1	65.3	59.2	67.9	68.5	
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6	
Heavy Trucks:	61.5	61.0	51.9	53.2	61.5	61.7	
Vehicle Noise:	69.7	68.8	65.8	60.9	69.5	70.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	269	579
CNEL:	62	134	289	623

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Discovery to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,177 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,252 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.85	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.08	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.04	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.6	64.9	58.8	67.4	68.0
Medium Trucks:	61.1	60.4	54.0	52.5	61.0	61.2
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2
Vehicle Noise:	69.3	68.3	65.4	60.5	69.1	69.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	117	251	541
CNEL:	58	125	270	583

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: I-405 Overcrossing to Pasteur

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,634 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	712 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	50.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 42.814				
Road Grade:	0.0%	Medium Trucks: 42.720				
Left View:	-90.0 degrees	Heavy Trucks: 42.814				
Right View:	90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.88	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-21.12	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.08	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.0	65.0	63.2	57.1	65.8	66.4	
Medium Trucks:	59.6	58.9	52.6	51.0	59.5	59.7	
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1	
Vehicle Noise:	67.7	66.8	63.8	59.0	67.5	68.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	342
CNEL:	37	79	171	368



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Irvine Center Drive to Discovery

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,313 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,098 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.42	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.61	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.1	66.1	64.3	58.2	66.9	67.5	
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6	
Heavy Trucks:	60.5	60.0	50.9	52.2	60.5	60.7	
Vehicle Noise:	68.7	67.8	64.8	59.9	68.5	69.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	107	230	496
CNEL:	53	115	248	534

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Quail Hill Parkway to I-405 Overcrossing

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,634 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 712 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.88	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-21.12	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.08	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	65.0	63.2	57.1	65.8	66.4
Medium Trucks:	59.6	58.9	52.6	51.0	59.5	59.7
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1
Vehicle Noise:	67.7	66.8	63.8	59.0	67.5	68.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	342
CNEL:	37	79	171	368

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Pasteur to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,608 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 710 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-4.31	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-21.55	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-25.50	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.2	64.2	62.4	56.3	65.0	65.6	
Medium Trucks:	58.6	57.9	51.6	50.0	58.5	58.7	
Heavy Trucks:	58.6	58.1	49.0	50.3	58.6	58.8	
Vehicle Noise:	66.8	65.9	62.9	58.0	66.6	67.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	80	172	371
CNEL:	40	86	185	399

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Waterworks to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,469 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	781 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-3.90	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-21.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-25.09	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.6	62.8	56.8	65.4	66.0
Medium Trucks:	59.0	58.4	52.0	50.5	58.9	59.1
Heavy Trucks:	59.1	58.5	49.4	50.7	59.0	59.2
Vehicle Noise:	67.2	66.3	63.3	58.5	67.0	67.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	85	183	395
CNEL:	43	92	197	425

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,308 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 603 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-5.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-22.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-26.21	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.5	63.5	61.7	55.6	64.3	64.9	
Medium Trucks:	57.9	57.2	50.9	49.3	57.8	58.0	
Heavy Trucks:	57.9	57.3	48.3	49.6	57.9	58.0	
Vehicle Noise:	66.1	65.2	62.2	57.3	65.9	66.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	72	154	333
CNEL:	36	77	166	358

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Laguna Canyon Road  
 Road Segment: Barranca Parkway to Waterworks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,148 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 590 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-5.12	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-22.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-26.31	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.4	63.4	61.6	55.5	64.2	64.8	
Medium Trucks:	57.8	57.1	50.8	49.2	57.7	57.9	
Heavy Trucks:	57.8	57.3	48.2	49.5	57.8	57.9	
Vehicle Noise:	66.0	65.1	62.1	57.2	65.8	66.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	152	328
CNEL:	35	76	164	353

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Lake Forest Drive  
 Road Segment: Hidden Canyon to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,408 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,601 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.36	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.60	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.56	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.6	66.5	64.8	58.7	67.3	67.9	
Medium Trucks:	61.2	60.5	54.1	52.6	61.0	61.3	
Heavy Trucks:	61.6	61.0	52.0	53.2	61.6	61.7	
Vehicle Noise:	69.3	68.4	65.3	60.5	69.1	69.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	117	252	544
CNEL:	58	126	271	584

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Lake Forest Drive  
 Road Segment: Bake Parkway to Hidden Canyon (Romano)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,213 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,585 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos: 77.5% 12.9% 9.6% 97.42%				
	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
	<b>Noise Source Elevations (in feet)</b>				
	Autos: 2.000				
	Medium Trucks: 4.000				
	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos: 57.786				
	Medium Trucks: 57.717				
	Heavy Trucks: 57.787				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.41	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.60	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.5	66.5	64.7	58.7	67.3	67.9	
Medium Trucks:	61.1	60.4	54.1	52.5	61.0	61.2	
Heavy Trucks:	61.5	60.9	51.9	53.2	61.5	61.6	
Vehicle Noise:	69.2	68.3	65.3	60.5	69.0	69.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	251	540
CNEL:	58	125	269	580



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Lake Forest Drive  
 Road Segment: Tesla to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,514 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,197 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.63	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-18.86	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-22.82	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.7	63.6	61.9	55.8	64.4	65.0
Medium Trucks:	58.2	57.6	51.2	49.7	58.1	58.4
Heavy Trucks:	58.7	58.1	49.0	50.3	58.6	58.8
Vehicle Noise:	66.4	65.5	62.4	57.6	66.2	66.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	101	217	467
CNEL:	50	108	233	502

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Lake Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,204 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 512 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-2.31	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	70.80	-19.55	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	77.97	-23.50	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.1	55.1	53.3	47.3	55.9	56.5
Medium Trucks:	51.0	50.3	43.9	42.4	50.9	51.1
Heavy Trucks:	54.2	53.6	44.6	45.8	54.2	54.3
Vehicle Noise:	59.0	58.2	54.3	50.4	58.9	59.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	42	90
CNEL:	10	21	45	96

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Lynx  
 Road Segment: Irvine Boulevard to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1,244 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	103 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-9.28	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-26.52	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-30.48	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	50.1	49.0	47.3	41.2	49.8	50.4
Medium Trucks:	44.9	44.3	37.9	36.3	44.8	45.0
Heavy Trucks:	48.1	47.5	38.5	39.8	48.1	48.2
Vehicle Noise:	53.0	52.1	48.2	44.3	52.8	53.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	3	6	12	27
CNEL:	3	6	13	28

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: I-405 SB Off-Ramp to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 62,587 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,163 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.93	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-13.31	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-17.27	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	75.0	74.0	72.2	66.2	74.8	75.4
Medium Trucks:	68.3	67.6	61.2	59.7	68.2	68.4
Heavy Trucks:	68.0	67.4	58.3	59.6	67.9	68.1
Vehicle Noise:	76.5	75.6	72.7	67.8	76.3	76.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	264	568	1,223	2,636
CNEL:	284	612	1,318	2,839

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Main Street to I-405 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 61,233 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,052 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 60 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.83	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-13.40	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-17.36	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.9	73.9	72.1	66.1	74.7	75.3
Medium Trucks:	68.2	67.5	61.1	59.6	68.1	68.3
Heavy Trucks:	67.9	67.3	58.2	59.5	67.8	68.0
Vehicle Noise:	76.4	75.5	72.6	67.7	76.2	76.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	260	560	1,206	2,598
CNEL:	280	603	1,299	2,798

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: I-405 NB Off-Ramp and I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 60,411 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,984 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.78	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-13.46	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-17.42	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.9	73.8	72.1	66.0	74.6	75.2
Medium Trucks:	68.1	67.4	61.1	59.5	68.0	68.2
Heavy Trucks:	67.8	67.2	58.2	59.4	67.8	67.9
Vehicle Noise:	76.4	75.4	72.6	67.6	76.2	76.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	257	555	1,195	2,574
CNEL:	277	597	1,287	2,773

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Jamboree Road to Fairchild Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,795 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,283 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.03	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.98	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	66.7	64.9	58.9	67.5	68.1	
Medium Trucks:	61.5	60.9	54.5	53.0	61.4	61.6	
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5	
Vehicle Noise:	69.6	68.7	65.6	60.9	69.4	69.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	357	768
CNEL:	82	178	382	824

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Fairchild Road to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,243 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,238 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.04	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.7	64.9	58.8	67.5	68.1
Medium Trucks:	61.5	60.8	54.4	52.9	61.4	61.6
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	69.5	68.6	65.5	60.8	69.4	69.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	164	353	761
CNEL:	82	176	379	816



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Fitch to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 42,124 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,475 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.46	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.78	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.74	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.4	65.6	59.5	68.2	68.8
Medium Trucks:	62.2	61.5	55.2	53.6	62.1	62.3
Heavy Trucks:	63.0	62.4	53.4	54.7	63.0	63.1
Vehicle Noise:	70.3	69.4	66.2	61.5	70.1	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	376	809
CNEL:	87	187	403	868

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Michelson Drive to Douglas

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 46,388 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,827 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.88	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-13.36	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-17.32	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	69.2	67.4	61.3	70.0	70.6
Medium Trucks:	64.0	63.3	57.0	55.4	63.9	64.1
Heavy Trucks:	64.8	64.2	55.2	56.5	64.8	64.9
Vehicle Noise:	72.1	71.2	68.0	63.3	71.9	72.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	133	287	619	1,333
CNEL:	143	308	664	1,430

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Douglas to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,645 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,766 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.81	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-13.43	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-17.39	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	69.1	67.3	61.3	69.9	70.5
Medium Trucks:	63.9	63.2	56.9	55.3	63.8	64.0
Heavy Trucks:	64.8	64.2	55.1	56.4	64.7	64.9
Vehicle Noise:	72.0	71.1	67.9	63.3	71.8	72.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	132	284	612	1,318
CNEL:	141	305	656	1,414

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Skypark to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,482 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,762 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.46	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.78	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.73	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.4	64.6	58.6	67.2	67.8
Medium Trucks:	61.2	60.5	54.2	52.6	61.1	61.3
Heavy Trucks:	62.0	61.4	52.4	53.7	62.0	62.1
Vehicle Noise:	69.3	68.4	65.2	60.5	69.1	69.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	150	322	694
CNEL:	74	160	346	745

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Redhill Avenue to Skypark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,170 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,324 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.48	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.2	63.4	57.4	66.0	66.6
Medium Trucks:	60.0	59.4	53.0	51.5	59.9	60.1
Heavy Trucks:	60.9	60.3	51.3	52.5	60.9	61.0
Vehicle Noise:	68.1	67.2	64.1	59.4	67.9	68.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	283	610
CNEL:	65	141	304	654

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Birch Street to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,485 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,773 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.53	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.70	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.66	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.0	62.3	56.2	64.8	65.4
Medium Trucks:	58.9	58.2	51.8	50.3	58.7	59.0
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8
Vehicle Noise:	66.9	66.0	62.9	58.2	66.7	67.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	110	236	509
CNEL:	55	118	254	546

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: MacArthur Boulevard  
 Road Segment: Campus Drive to Birch Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,205 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,997 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.05	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-16.19	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-20.14	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.3	64.6	58.5	67.1	67.7
Medium Trucks:	61.2	60.5	54.1	52.6	61.0	61.3
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	69.2	68.3	65.2	60.5	69.0	69.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	186	401	864
CNEL:	93	200	430	927

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Main Street  
 Road Segment: Gillette Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,084 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,802 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.85	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.39	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.35	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.8	66.0	59.9	68.6	69.2
Medium Trucks:	62.6	61.9	55.5	54.0	62.5	62.7
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	70.7	69.7	66.6	61.9	70.5	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	399	859
CNEL:	92	199	428	922



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Main Street  
 Road Segment: MacArthur Boulevard to Mercantile

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,229 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,319 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.26	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.98	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.94	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.2	65.4	59.3	68.0	68.6
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.8	62.2	53.2	54.5	62.8	62.9
Vehicle Noise:	70.1	69.2	66.0	61.3	69.9	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	169	364	785
CNEL:	84	181	391	842

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Main Street  
 Road Segment: Executive Park to MacArthur Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,777 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,374 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.80	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.43	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.39	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	60.1	59.4	53.1	51.5	60.0	60.2
Heavy Trucks:	61.0	60.4	51.3	52.6	60.9	61.1
Vehicle Noise:	68.2	67.3	64.1	59.5	68.0	68.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	287	619
CNEL:	66	143	308	664

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Main Street  
 Road Segment: Von Karman Avenue to Cartwright

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,808 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,377 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.81	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.43	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.39	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	60.1	59.5	53.1	51.5	60.0	60.2
Heavy Trucks:	61.0	60.4	51.3	52.6	61.0	61.1
Vehicle Noise:	68.2	67.3	64.2	59.5	68.0	68.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	287	619
CNEL:	66	143	308	664

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Main Street  
 Road Segment: McDermott to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,518 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,188 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.45	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.79	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.75	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.0	64.9	63.2	57.1	65.8	66.4	
Medium Trucks:	59.8	59.1	52.7	51.2	59.6	59.9	
Heavy Trucks:	60.6	60.0	51.0	52.2	60.6	60.7	
Vehicle Noise:	67.8	66.9	63.8	59.1	67.7	68.1	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	126	272	586
CNEL:	63	135	292	629

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Main Street  
 Road Segment: Red Hill Avenue to Executive Circle

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,974 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,143 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.36	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.88	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.84	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.9	63.1	57.0	65.7	66.3
Medium Trucks:	59.7	59.0	52.6	51.1	59.6	59.8
Heavy Trucks:	60.5	59.9	50.9	52.1	60.5	60.6
Vehicle Noise:	67.8	66.8	63.7	59.0	67.6	68.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	268	578
CNEL:	62	134	288	620

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Main Street  
 Road Segment: Jamboree Road to Union

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,130 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,073 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.22	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.02	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.98	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.8	64.7	62.9	56.9	65.5	66.1
Medium Trucks:	59.5	58.9	52.5	51.0	59.4	59.6
Heavy Trucks:	60.4	59.8	50.8	52.0	60.4	60.5
Vehicle Noise:	67.6	66.7	63.6	58.9	67.4	67.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	122	262	565
CNEL:	61	131	282	606

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Main Street  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,660 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,209 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.12	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.36	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.32	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.0	62.3	56.2	64.8	65.4
Medium Trucks:	58.8	58.2	51.8	50.3	58.7	59.0
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8
Vehicle Noise:	66.9	66.0	62.9	58.2	66.7	67.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	176	378
CNEL:	41	87	188	406

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Main Street  
 Road Segment: Siglo to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,322 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,007 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.07	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.16	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.12	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.6	64.6	62.8	56.8	65.4	66.0	
Medium Trucks:	59.4	58.7	52.4	50.8	59.3	59.5	
Heavy Trucks:	60.2	59.6	50.6	51.9	60.2	60.3	
Vehicle Noise:	67.5	66.6	63.4	58.7	67.3	67.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	119	257	553
CNEL:	59	128	275	593



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Main Street  
 Road Segment: Veneto to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,421 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,932 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.91	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.33	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.28	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.5	64.4	62.6	56.6	65.2	65.8
Medium Trucks:	59.2	58.6	52.2	50.6	59.1	59.3
Heavy Trucks:	60.1	59.5	50.4	51.7	60.1	60.2
Vehicle Noise:	67.3	66.4	63.3	58.6	67.1	67.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	250	539
CNEL:	58	125	269	579

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Main Street  
 Road Segment: Paseo Westpark to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,129 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,001 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.95	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.19	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.14	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.2	61.4	55.4	64.0	64.6
Medium Trucks:	58.0	57.4	51.0	49.4	57.9	58.1
Heavy Trucks:	58.9	58.3	49.2	50.5	58.8	59.0
Vehicle Noise:	66.1	65.2	62.0	57.4	65.9	66.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	72	155	334
CNEL:	36	77	166	358

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Main Street  
 Road Segment: Harvard Avenue to San Mateo

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,988 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 989 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.19	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.2	61.4	55.3	64.0	64.6
Medium Trucks:	58.0	57.3	50.9	49.4	57.9	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.1	65.1	62.0	57.3	65.9	66.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	154	331
CNEL:	36	76	165	355

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Marine Way  
 Road Segment: Sand Canyon Avenue to Ridge Valley (O Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,977 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,381 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 42.814				
Road Grade: 0.0%		Medium Trucks: 42.720				
Left View: -90.0 degrees		Heavy Trucks: 42.814				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.85	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	77.72	-13.39	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	82.99	-17.34	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.0	67.2	61.2	69.8	70.4
Medium Trucks:	64.0	63.4	57.0	55.5	63.9	64.2
Heavy Trucks:	65.4	64.8	55.7	57.0	65.3	65.5
Vehicle Noise:	72.1	71.2	67.9	63.4	71.9	72.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	310	668
CNEL:	72	154	332	716

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Marine Way  
 Road Segment: Alton Parkway to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,132 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,733 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.93	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-14.31	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-18.27	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.1	64.4	58.3	66.9	67.5
Medium Trucks:	61.2	60.5	54.1	52.6	61.0	61.3
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	69.2	68.3	65.0	60.5	69.0	69.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	249	537
CNEL:	58	124	267	575

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Marine Way  
 Road Segment: Lynx to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,174 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,654 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.80	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-14.44	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-18.39	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.0	64.2	58.2	66.8	67.4
Medium Trucks:	61.0	60.4	54.0	52.5	60.9	61.2
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5
Vehicle Noise:	69.1	68.2	64.9	60.4	68.9	69.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	113	245	527
CNEL:	56	122	262	564

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Marine Way  
 Road Segment: County Access to Treble

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,495 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,186 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.96	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.28	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.24	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.2	65.2	63.4	57.3	66.0	66.6	
Medium Trucks:	60.2	59.5	53.2	51.6	60.1	60.3	
Heavy Trucks:	61.5	60.9	51.9	53.1	61.5	61.6	
Vehicle Noise:	68.2	67.3	64.1	59.5	68.0	68.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	100	215	463
CNEL:	50	107	230	496

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Marine Way  
 Road Segment: Ridge Valley (O Street) to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,478 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,102 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.79	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.41	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.1	65.0	63.2	57.2	65.8	66.4	
Medium Trucks:	60.0	59.4	53.0	51.4	59.9	60.1	
Heavy Trucks:	61.3	60.8	51.7	53.0	61.3	61.4	
Vehicle Noise:	68.1	67.2	63.9	59.3	67.9	68.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	97	209	451
CNEL:	48	104	224	483



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Marine Way  
 Road Segment: Skyhawk to County Access

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,553 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,696 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.85	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.34	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.1	62.3	56.2	64.9	65.5
Medium Trucks:	59.1	58.4	52.1	50.5	59.0	59.2
Heavy Trucks:	60.4	59.8	50.8	52.0	60.4	60.5
Vehicle Noise:	67.1	66.2	63.0	58.4	66.9	67.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	181	391
CNEL:	42	90	194	418

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Marine Way  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,922 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,479 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.94	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.5	63.5	61.7	55.6	64.3	64.9	
Medium Trucks:	58.5	57.8	51.5	49.9	58.4	58.6	
Heavy Trucks:	59.8	59.2	50.2	51.4	59.8	59.9	
Vehicle Noise:	66.5	65.6	62.4	57.8	66.3	66.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	166	357
CNEL:	38	82	177	382

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Marine Way  
 Road Segment: Treble to Lynx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,993 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,402 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.03	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.21	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.17	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.2	61.5	55.4	64.0	64.6
Medium Trucks:	58.3	57.6	51.2	49.7	58.1	58.4
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7
Vehicle Noise:	66.3	65.4	62.1	57.6	66.1	66.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	160	344
CNEL:	37	79	171	369

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: McGaw Avenue  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,638 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,208 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-0.04	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-17.28	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-21.23	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.0	61.0	59.2	53.1	61.8	62.4	
Medium Trucks:	56.2	55.6	49.2	47.7	56.1	56.3	
Heavy Trucks:	58.1	57.5	48.5	49.7	58.1	58.2	
Vehicle Noise:	64.2	63.4	59.9	55.5	64.1	64.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	117	251
CNEL:	27	58	125	268

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: McGaw Avenue  
 Road Segment: Red Hill Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,434 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,191 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 35 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-0.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-17.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-21.30	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.0	60.9	59.1	53.1	61.7	62.3
Medium Trucks:	56.2	55.5	49.1	47.6	56.1	56.3
Heavy Trucks:	58.0	57.4	48.4	49.7	58.0	58.1
Vehicle Noise:	64.2	63.3	59.9	55.5	64.0	64.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	115	249
CNEL:	27	57	123	266

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: McGaw Avenue  
 Road Segment: Daimler to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,107 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	751 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-2.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-19.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-23.30	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.0	58.9	57.1	51.1	59.7	60.3
Medium Trucks:	54.2	53.5	47.1	45.6	54.1	54.3
Heavy Trucks:	56.0	55.4	46.4	47.7	56.0	56.1
Vehicle Noise:	62.2	61.3	57.9	53.5	62.0	62.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	85	183
CNEL:	20	42	91	196

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: McGaw Avenue  
 Road Segment: Jamboree Road to Murphy Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,648 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 383 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-22.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-26.22	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	57.0	56.0	54.2	48.1	56.8	57.4	
Medium Trucks:	51.3	50.6	44.2	42.7	51.1	51.4	
Heavy Trucks:	53.1	52.5	43.5	44.7	53.1	53.2	
Vehicle Noise:	59.3	58.4	54.9	50.6	59.1	59.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	25	54	117
CNEL:	12	27	58	125

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Meadowood  
 Road Segment: Culver Drive to Canyonwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	10,668 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	880 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	0.05	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-17.19	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-21.15	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.5	55.5	53.7	47.7	56.3	56.9
Medium Trucks:	51.4	50.7	44.3	42.8	51.2	51.5
Heavy Trucks:	54.6	54.0	45.0	46.2	54.6	54.7
Vehicle Noise:	59.4	58.6	54.7	50.8	59.3	59.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	26	56	120
CNEL:	13	27	59	128



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Meridian  
 Road Segment: Spectrum to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,808 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 232 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-6.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-23.78	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-27.74	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	53.0	51.9	50.1	44.1	52.7	53.3	
Medium Trucks:	47.5	46.8	40.4	38.9	47.3	47.6	
Heavy Trucks:	49.9	49.4	40.3	41.6	49.9	50.0	
Vehicle Noise:	55.5	54.6	51.0	46.8	55.3	55.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	14	30	65
CNEL:	7	15	32	70

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Meridian  
 Road Segment: Alton Parkway to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,259 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 186 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-7.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-24.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-28.68	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	52.0	51.0	49.2	43.1	51.8	52.4	
Medium Trucks:	46.5	45.8	39.5	37.9	46.4	46.6	
Heavy Trucks:	49.0	48.4	39.4	40.6	49.0	49.1	
Vehicle Noise:	54.5	53.7	50.0	45.8	54.4	54.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	12	26	57
CNEL:	6	13	28	60

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Merit  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,772 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 311 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-4.47	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-21.71	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-25.66	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.9	53.8	52.1	46.0	54.6	55.2
Medium Trucks:	49.7	49.1	42.7	41.2	49.6	49.9
Heavy Trucks:	52.9	52.4	43.3	44.6	52.9	53.1
Vehicle Noise:	57.8	56.9	53.0	49.1	57.6	58.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	12	26	56
CNEL:	6	13	28	60

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Michelson Drive  
 Road Segment: Riparian to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,376 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,094 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.77	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.47	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.42	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	65.0	63.2	57.2	65.8	66.4
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1
Heavy Trucks:	61.3	60.7	51.7	53.0	61.3	61.4
Vehicle Noise:	68.0	67.1	63.9	59.3	67.9	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	97	209	450
CNEL:	48	104	224	482

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Michelson Drive  
 Road Segment: Almond Tree Lane to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,160 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 838 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 37.138				
Road Grade: 0.0%	Medium Trucks: 37.030				
Left View: -90.0 degrees	Heavy Trucks: 37.139				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.21	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-19.44	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-23.40	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.9	63.9	62.1	56.1	64.7	65.3	
Medium Trucks:	58.9	58.3	51.9	50.3	58.8	59.0	
Heavy Trucks:	60.2	59.6	50.6	51.9	60.2	60.3	
Vehicle Noise:	66.9	66.1	62.8	58.2	66.8	67.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	49	106	228
CNEL:	24	53	113	244

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Michelson Drive  
 Road Segment: Von Karman Avenue to Obsidian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,498 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,021 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.62	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.62	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.58	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.9	64.8	63.1	57.0	65.6	66.2	
Medium Trucks:	59.9	59.2	52.8	51.3	59.7	60.0	
Heavy Trucks:	61.2	60.6	51.5	52.8	61.2	61.3	
Vehicle Noise:	67.9	67.0	63.7	59.2	67.7	68.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	95	204	439
CNEL:	47	101	218	470

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Michelson Drive  
 Road Segment: Parkside to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,511 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,857 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.99	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.95	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.5	64.5	62.7	56.6	65.3	65.9
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6
Heavy Trucks:	60.8	60.2	51.2	52.4	60.8	60.9
Vehicle Noise:	67.5	66.6	63.4	58.8	67.3	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	89	193	415
CNEL:	44	96	206	445

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Michelson Drive  
 Road Segment: Gillman to Seton/Sandburg Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,500 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 784 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.50	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-19.74	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-23.69	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.6	63.6	61.8	55.8	64.4	65.0	
Medium Trucks:	58.6	58.0	51.6	50.1	58.5	58.7	
Heavy Trucks:	59.9	59.3	50.3	51.6	59.9	60.0	
Vehicle Noise:	66.7	65.8	62.5	57.9	66.5	66.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	101	218
CNEL:	23	50	108	234



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Michelson Drive  
 Road Segment: Carlson to Prince

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,204 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,244 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.07	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	77.72	-15.17	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	82.99	-19.12	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.0	64.0	62.2	56.2	64.8	65.4
Medium Trucks:	59.0	58.3	52.0	50.4	58.9	59.1
Heavy Trucks:	60.3	59.8	50.7	52.0	60.3	60.4
Vehicle Noise:	67.1	66.2	62.9	58.3	66.9	67.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	100	215	464
CNEL:	50	107	231	497

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Michelson Drive  
 Road Segment: MacArthur Boulevard to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,112 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,742 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.97	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.27	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.22	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.2	62.4	56.4	65.0	65.6
Medium Trucks:	59.2	58.5	52.2	50.6	59.1	59.3
Heavy Trucks:	60.5	59.9	50.9	52.2	60.5	60.6
Vehicle Noise:	67.2	66.3	63.1	58.5	67.1	67.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	86	185	398
CNEL:	43	92	198	426

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Michelson Drive  
 Road Segment: Harvard Avenue to Parkside

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,076 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,491 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.30	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.94	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.90	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.5	61.7	55.7	64.3	64.9
Medium Trucks:	58.5	57.9	51.5	50.0	58.4	58.6
Heavy Trucks:	59.8	59.3	50.2	51.5	59.8	60.0
Vehicle Noise:	66.6	65.7	62.4	57.8	66.4	66.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	166	359
CNEL:	38	83	178	384

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Michelson Drive  
 Road Segment: Bixby to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 18,256 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,506 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.86	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.5	61.8	55.7	64.3	64.9
Medium Trucks:	58.6	57.9	51.5	50.0	58.5	58.7
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0
Vehicle Noise:	66.6	65.7	62.4	57.9	66.4	66.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	168	361
CNEL:	39	83	179	387

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Michelson Drive  
 Road Segment: Jamboree Road to Carlson

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,363 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,092 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.77	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.47	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.43	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.3	64.5	58.4	67.1	67.7
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	69.3	68.4	65.2	60.6	69.2	69.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	245	527
CNEL:	56	122	262	564

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Michelson Drive  
 Road Segment: Teller to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,464 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,101 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.78	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.45	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.41	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.3	64.5	58.5	67.1	67.7
Medium Trucks:	61.3	60.7	54.3	52.7	61.2	61.4
Heavy Trucks:	62.6	62.1	53.0	54.3	62.6	62.7
Vehicle Noise:	69.4	68.5	65.2	60.6	69.2	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	245	528
CNEL:	57	122	263	566

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Michelson Drive  
 Road Segment: Jordan East to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,991 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 577 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 29.547 Medium Trucks: 29.411 Heavy Trucks: 29.547																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.83	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	77.72	-21.07	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	82.99	-25.02	3.32	-1.20	-5.77	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.8	63.7	62.0	55.9	64.5	65.1
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2
Vehicle Noise:	66.8	65.9	62.6	58.1	66.6	67.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	83	179
CNEL:	19	41	89	192

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Michelson Drive  
 Road Segment: Culver Drive to Angell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,947 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 738 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 16 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 39.306 Medium Trucks: 39.205 Heavy Trucks: 39.307																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.76	1.46	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-20.00	1.48	-1.20	-5.08	0.000	0.000
Heavy Trucks:	82.99	-23.95	1.46	-1.20	-5.56	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.0	63.0	61.2	55.1	63.8	64.4
Medium Trucks:	58.0	57.3	51.0	49.4	57.9	58.1
Heavy Trucks:	59.3	58.7	49.7	50.9	59.3	59.4
Vehicle Noise:	66.0	65.1	61.9	57.3	65.8	66.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	46	98	211
CNEL:	23	49	105	226



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Modjeska (A Street)  
 Road Segment: Portola Springs to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,789 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,138 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 24 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 27.659 Medium Trucks: 27.514 Heavy Trucks: 27.659																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.39	3.75	-1.20	-4.81	0.000	0.000
Medium Trucks:	79.45	-18.63	3.79	-1.20	-5.14	0.000	0.000
Heavy Trucks:	84.25	-22.59	3.75	-1.20	-5.77	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.6	68.6	66.8	60.7	69.4	70.0	
Medium Trucks:	63.4	62.7	56.4	54.8	63.3	63.5	
Heavy Trucks:	64.2	63.6	54.6	55.8	64.2	64.3	
Vehicle Noise:	71.5	70.6	67.4	62.7	71.3	71.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	79	169	365
CNEL:	39	84	182	391

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Modjeska (A Street)  
 Road Segment: South of Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1,833 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	151 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-10.15	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-27.39	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-31.35	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.9	57.9	56.1	50.1	58.7	59.3
Medium Trucks:	52.7	52.0	45.7	44.1	52.6	52.8
Heavy Trucks:	53.5	53.0	43.9	45.2	53.5	53.6
Vehicle Noise:	60.8	59.9	56.7	52.0	60.6	61.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	41	88
CNEL:	9	20	44	95

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Muirlands Boulevard  
 Road Segment: Bake Parkway to City Limits

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,023 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,239 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.21	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.1	62.4	56.3	64.9	65.5
Medium Trucks:	59.0	58.3	51.9	50.4	58.8	59.1
Heavy Trucks:	59.8	59.2	50.2	51.4	59.8	59.9
Vehicle Noise:	67.0	66.1	63.0	58.3	66.8	67.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	83	179	385
CNEL:	41	89	192	413

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Muirlands Boulevard  
 Road Segment: Alton Parkway to Sterling

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,701 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 965 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.30	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.1	63.0	61.3	55.2	63.8	64.5
Medium Trucks:	57.9	57.2	50.8	49.3	57.8	58.0
Heavy Trucks:	58.7	58.1	49.1	50.3	58.7	58.8
Vehicle Noise:	65.9	65.0	61.9	57.2	65.8	66.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	70	151	326
CNEL:	35	75	162	349

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Muirlands Boulevard  
 Road Segment: Wrigley to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,970 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 988 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.20	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.1	61.4	55.3	63.9	64.6
Medium Trucks:	58.0	57.3	50.9	49.4	57.8	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.0	65.1	62.0	57.3	65.9	66.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	331
CNEL:	35	76	165	355

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Newport Coast Drive  
 Road Segment: SR-73 NB Off-Ramp to Turtle Ridge

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,365 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,433 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.12	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.12	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.07	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.3	61.6	55.5	64.1	64.7
Medium Trucks:	58.4	57.7	51.3	49.8	58.2	58.5
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8
Vehicle Noise:	66.4	65.5	62.2	57.7	66.2	66.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	75	162	349
CNEL:	37	81	174	374

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Newport Coast Drive  
 Road Segment: Turtle Crest to Bonita Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,158 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,003 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.43	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.66	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.62	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.8	61.8	60.0	54.0	62.6	63.2	
Medium Trucks:	56.8	56.1	49.8	48.2	56.7	56.9	
Heavy Trucks:	58.1	57.5	48.5	49.8	58.1	58.2	
Vehicle Noise:	64.8	64.0	60.7	56.1	64.7	65.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	59	128	275
CNEL:	29	64	137	295

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Nightmist  
 Road Segment: Sand Canyon Avenue to Tulip (Road C)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,178 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 922 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.78	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.74	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.0	57.9	56.1	50.1	58.7	59.3
Medium Trucks:	53.5	52.8	46.4	44.9	53.3	53.6
Heavy Trucks:	55.9	55.4	46.3	47.6	55.9	56.0
Vehicle Noise:	61.5	60.6	57.0	52.8	61.3	61.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	16	35	76	164
CNEL:	18	38	81	175



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Northwood  
 Road Segment: Yale Avenue to Savannah

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,798 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	396 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-4.88	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-22.12	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-26.08	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.1	59.0	57.2	51.2	59.8	60.4
Medium Trucks:	54.3	53.6	47.2	45.7	54.2	54.4
Heavy Trucks:	56.1	55.5	46.5	47.8	56.1	56.2
Vehicle Noise:	62.3	61.4	58.0	53.6	62.1	62.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	111
CNEL:	12	26	55	119

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Northwood  
 Road Segment: Goldrush to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,833 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	316 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.86	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-23.10	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-27.05	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.1	58.0	56.2	50.2	58.8	59.4
Medium Trucks:	53.3	52.6	46.3	44.7	53.2	53.4
Heavy Trucks:	55.1	54.6	45.5	46.8	55.1	55.3
Vehicle Noise:	61.3	60.4	57.0	52.6	61.1	61.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	10	21	45	96
CNEL:	10	22	48	103

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Oak Canyon Drive  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,331 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,100 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 37.138				
Road Grade: 0.0%	Medium Trucks: 37.030				
Left View: -90.0 degrees	Heavy Trucks: 37.139				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.54	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-18.78	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-22.73	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.6	66.5	64.7	58.7	67.3	67.9	
Medium Trucks:	61.3	60.7	54.3	52.7	61.2	61.4	
Heavy Trucks:	62.2	61.6	52.5	53.8	62.1	62.3	
Vehicle Noise:	69.4	68.5	65.3	60.7	69.2	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	154	332
CNEL:	36	77	165	356

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Pacifica  
 Road Segment: Gateway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,784 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,055 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.40	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.1	62.0	60.2	54.2	62.8	63.4
Medium Trucks:	57.0	56.4	50.0	48.5	56.9	57.1
Heavy Trucks:	58.3	57.8	48.7	50.0	58.3	58.5
Vehicle Noise:	65.1	64.2	60.9	56.3	64.9	65.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	132	285
CNEL:	30	66	142	305

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Pacifica  
 Road Segment: Alton Parkway to Gateway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,769 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	806 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.38	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.61	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.57	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	60.8	59.1	53.0	61.6	62.2
Medium Trucks:	55.9	55.2	48.8	47.3	55.7	56.0
Heavy Trucks:	57.2	56.6	47.6	48.8	57.2	57.3
Vehicle Noise:	63.9	63.0	59.7	55.2	63.7	64.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	51	110	238
CNEL:	25	55	118	255

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative      Project Name: Irvine GP  
 Road Name: Pacifica      Job Number: 15937  
 Road Segment: Irvine Center Drive to Fortune Drive (Spectrum Center Drive)

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,054 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	582 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.79	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.03	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.98	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.5	59.4	57.6	51.6	60.2	60.8
Medium Trucks:	54.4	53.8	47.4	45.9	54.3	54.6
Heavy Trucks:	55.8	55.2	46.1	47.4	55.7	55.9
Vehicle Noise:	62.5	61.6	58.3	53.8	62.3	62.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	41	89	192
CNEL:	21	44	95	205

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Pacifica  
 Road Segment: Meridian to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,576 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 377 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.67	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-22.91	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-26.86	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	58.6	57.5	55.8	49.7	58.3	58.9	
Medium Trucks:	52.6	51.9	45.5	44.0	52.5	52.7	
Heavy Trucks:	53.9	53.3	44.3	45.5	53.9	54.0	
Vehicle Noise:	60.6	59.7	56.4	51.9	60.4	60.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	31	67	144
CNEL:	15	33	71	154

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Park Place  
 Road Segment: Christamon South to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,737 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 308 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-5.30	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-22.54	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-26.49	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.2	53.1	51.4	45.3	53.9	54.5
Medium Trucks:	48.7	48.0	41.7	40.1	48.6	48.8
Heavy Trucks:	51.2	50.6	41.6	42.8	51.2	51.3
Vehicle Noise:	56.7	55.8	52.2	48.0	56.5	57.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	79
CNEL:	8	18	39	84



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative Project Name: Irvine GP  
 Road Name: Portola Parkway Job Number: 15937  
 Road Segment: Bee Canyon Access Road to Sand Canyon Avenue

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>  Average Daily Traffic (Adt): 25,814 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,130 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	<b>Site Conditions (Hard = 10, Soft = 15)</b>  Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>  Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<b>Vehicle Mix</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table> <b>Noise Source Elevations (in feet)</b> Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Lane Equivalent Distance (in feet)</b> Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.46	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.78	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.73	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	68.9	67.2	61.1	69.7	70.3
Medium Trucks:	63.4	62.7	56.4	54.8	63.3	63.5
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	71.6	70.6	67.7	62.8	71.4	71.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	358	772
CNEL:	83	179	385	830

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Portola Parkway  
 Road Segment: Jeffrey Road to Bee Canyon Access Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,724 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,122 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.45	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.79	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.75	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	68.9	67.2	61.1	69.7	70.3
Medium Trucks:	63.4	62.7	56.3	54.8	63.3	63.5
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	71.6	70.6	67.7	62.8	71.4	71.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	357	770
CNEL:	83	178	384	828

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Portola Parkway  
 Road Segment: Arrowhead to Ridge Valley Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,934 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,975 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.13	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.06	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.8	60.8	69.4	70.0
Medium Trucks:	63.1	62.4	56.0	54.5	62.9	63.2
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	71.2	70.3	67.4	62.5	71.0	71.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	158	340	734
CNEL:	79	170	366	789

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Portola Parkway  
 Road Segment: Sand Canyon Avenue to Arrowhead

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,926 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,809 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.49	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.44	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.2	66.5	60.4	69.0	69.6
Medium Trucks:	62.7	62.0	55.6	54.1	62.6	62.8
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.9	69.9	67.0	62.1	70.7	71.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	149	321	692
CNEL:	74	160	346	744

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Portola Parkway  
 Road Segment: Portola Springs to SR-241 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,392 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,435 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.49	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.45	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.2	65.5	59.4	68.0	68.6	
Medium Trucks:	61.7	61.0	54.6	53.1	61.6	61.8	
Heavy Trucks:	61.7	61.1	52.1	53.3	61.7	61.8	
Vehicle Noise:	69.9	68.9	66.0	61.1	69.7	70.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	128	275	593
CNEL:	64	137	296	638

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Portola Parkway  
 Road Segment: Gatepark to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,092 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,483 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.13	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.11	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.07	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	67.9	66.2	60.1	68.7	69.4
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5
Heavy Trucks:	62.4	61.8	52.8	54.1	62.4	62.5
Vehicle Noise:	70.6	69.7	66.7	61.8	70.4	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	192	414	891
CNEL:	96	207	445	959

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Portola Parkway  
 Road Segment: ETC-6 (SR-261) NB Off-Ramp to Gatepark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,669 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,448 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.07	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.17	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.13	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.9	66.1	60.1	68.7	69.3
Medium Trucks:	62.3	61.7	55.3	53.8	62.2	62.5
Heavy Trucks:	62.4	61.8	52.7	54.0	62.4	62.5
Vehicle Noise:	70.5	69.6	66.6	61.8	70.3	70.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	190	410	883
CNEL:	95	205	441	950

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Portola Parkway  
 Road Segment: SR-261 SB Off-Ramp to SR-261 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,810 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,377 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.94	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.30	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.26	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.8	66.0	59.9	68.6	69.2
Medium Trucks:	62.2	61.5	55.2	53.6	62.1	62.3
Heavy Trucks:	62.2	61.7	52.6	53.9	62.2	62.4
Vehicle Noise:	70.4	69.5	66.5	61.6	70.2	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	187	402	866
CNEL:	93	201	432	931



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Portola Parkway  
 Road Segment: Jamboree Road to Bellevue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,532 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,354 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
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Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.90	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.34	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.30	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.2	61.5	55.1	53.6	62.1	62.3
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	70.4	69.4	66.5	61.6	70.2	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	399	860
CNEL:	93	199	430	925

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Portola Parkway  
 Road Segment: Bellevue to ETC-6 (SR-261) SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,239 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,330 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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Autos:	77.5%	12.9%	9.6%	97.42%																	
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Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.85	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.39	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.34	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.7	65.9	59.8	68.5	69.1
Medium Trucks:	62.1	61.5	55.1	53.5	62.0	62.2
Heavy Trucks:	62.2	61.6	52.5	53.8	62.1	62.3
Vehicle Noise:	70.3	69.4	66.4	61.6	70.1	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	184	397	854
CNEL:	92	198	427	919

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Portola Parkway  
 Road Segment: Yale Avenue to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,075 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,234 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.57	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.53	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.6	67.5	65.7	59.7	68.3	68.9	
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.1	
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1	
Vehicle Noise:	70.1	69.2	66.2	61.4	69.9	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	179	386	831
CNEL:	89	193	415	894

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Portola Parkway  
 Road Segment: Culver Drive to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,470 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,936 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.05	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.19	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.15	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.9	65.1	59.0	67.7	68.3
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4
Heavy Trucks:	61.4	60.8	51.7	53.0	61.3	61.5
Vehicle Noise:	69.5	68.6	65.6	60.8	69.3	69.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	163	351	755
CNEL:	81	175	377	812

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Portola Parkway  
 Road Segment: Silverado to Portola Springs

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,381 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,021 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.73	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.97	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.92	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	64.0	57.9	66.5	67.1
Medium Trucks:	60.2	59.5	53.2	51.6	60.1	60.3
Heavy Trucks:	60.2	59.6	50.6	51.9	60.2	60.3
Vehicle Noise:	68.4	67.5	64.5	59.6	68.2	68.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	102	219	473
CNEL:	51	110	236	509

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Pusan  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,449 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 202 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-6.34	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-23.58	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-27.54	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	53.0	52.0	50.2	44.1	52.8	53.4	
Medium Trucks:	47.9	47.2	40.8	39.3	47.7	48.0	
Heavy Trucks:	51.1	50.5	41.4	42.7	51.1	51.2	
Vehicle Noise:	55.9	55.1	51.2	47.2	55.8	56.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	20	42
CNEL:	4	10	21	45

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Quail Hill Parkway  
 Road Segment: Shady Canyon Drive to Passage

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,772 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,301 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.00	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.4	64.3	62.6	56.5	65.1	65.8
Medium Trucks:	59.2	58.5	52.1	50.6	59.0	59.3
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1
Vehicle Noise:	67.2	66.3	63.2	58.5	67.0	67.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	86	184	397
CNEL:	43	92	198	426

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Quail Hill Parkway  
 Road Segment: East Knollcrest to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,762 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 805 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 45 mph																					
Near/Far Lane Distance: 48 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 62.5 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 62.5 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 57.786																				
Left View: -90.0 degrees	Medium Trucks: 57.717																				
Right View: 90.0 degrees	Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.89	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.09	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.3	62.3	60.5	54.4	63.1	63.7
Medium Trucks:	57.1	56.4	50.0	48.5	57.0	57.2
Heavy Trucks:	57.9	57.3	48.3	49.5	57.9	58.0
Vehicle Noise:	65.2	64.3	61.1	56.4	65.0	65.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	62	134	289
CNEL:	31	67	144	310



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative      Project Name: Irvine GP  
 Road Name: Quassar Drive (Spectrum)      Job Number: 15937  
 Road Segment: Irvine Center Drive to Spectrum Center Drive (Fortune)

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,051 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	169 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	16 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	40.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	40.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 39.306				
Road Grade:	0.0%	Medium Trucks: 39.205				
Left View:	-90.0 degrees	Heavy Trucks: 39.307				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-7.11	1.46	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-24.35	1.48	-1.20	-5.08	0.000	0.000
Heavy Trucks:	77.97	-28.31	1.46	-1.20	-5.56	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	51.9	50.8	49.1	43.0	51.6	52.2
Medium Trucks:	46.7	46.1	39.7	38.1	46.6	46.8
Heavy Trucks:	49.9	49.3	40.3	41.6	49.9	50.0
Vehicle Noise:	54.8	53.9	50.0	46.1	54.6	55.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	8	17	38
CNEL:	4	9	19	40

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Red Hill Avenue  
 Road Segment: MacArthur Boulevard to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,998 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,795 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.38	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.85	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.81	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.9	60.8	69.4	70.0
Medium Trucks:	63.3	62.6	56.2	54.7	63.1	63.4
Heavy Trucks:	63.7	63.1	54.0	55.3	63.7	63.8
Vehicle Noise:	71.4	70.5	67.4	62.6	71.2	71.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	217	468	1,008
CNEL:	108	233	503	1,083

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Red Hill Avenue  
 Road Segment: I-405 Over Crossing to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,980 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,896 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.82	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.3	65.5	59.4	68.1	68.7	
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0	
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4	
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	282	608
CNEL:	65	141	303	654

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Red Hill Avenue  
 Road Segment: Alton Parkway to Deere Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,372 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,671 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.86	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.38	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.34	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.1	65.3	59.3	67.9	68.5
Medium Trucks:	61.7	61.1	54.7	53.1	61.6	61.8
Heavy Trucks:	62.1	61.6	52.5	53.8	62.1	62.3
Vehicle Noise:	69.9	68.9	65.9	61.1	69.7	70.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	172	370	797
CNEL:	86	185	398	857

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Red Hill Avenue  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,871 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,629 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.79	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.45	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.40	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.1	67.0	65.3	59.2	67.8	68.4	
Medium Trucks:	61.7	61.0	54.6	53.1	61.5	61.8	
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2	
Vehicle Noise:	69.8	68.9	65.8	61.0	69.6	70.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	170	366	789
CNEL:	85	183	394	848

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Red Hill Avenue  
 Road Segment: Deere Avenue to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 30,440 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,511 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.59	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.65	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.60	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.9	66.8	65.1	59.0	67.6	68.2	
Medium Trucks:	61.5	60.8	54.4	52.9	61.3	61.6	
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0	
Vehicle Noise:	69.6	68.7	65.6	60.8	69.4	69.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	355	765
CNEL:	82	177	382	822

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Red Hill Avenue  
 Road Segment: Skypark East to MacArthur Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,585 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,863 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.29	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.94	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.90	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.7	60.7	69.3	69.9
Medium Trucks:	63.1	62.4	56.1	54.5	63.0	63.2
Heavy Trucks:	63.5	62.9	53.9	55.2	63.5	63.6
Vehicle Noise:	71.2	70.3	67.3	62.5	71.1	71.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	152	327	705
CNEL:	76	163	352	757

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Red Hill Avenue  
 Road Segment: Main Street to Skypark East

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,603 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,617 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 47.329				
Road Grade: 0.0%	Medium Trucks: 47.244				
Left View: -90.0 degrees	Heavy Trucks: 47.329				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.32	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.56	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.52	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.9	66.1	60.1	68.7	69.3
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0
Vehicle Noise:	70.6	69.7	66.7	61.9	70.4	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	138	298	641
CNEL:	69	148	320	689



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Research Drive  
 Road Segment: Hubble to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,920 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,138 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.35	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.89	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.84	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.6	66.5	64.7	58.7	67.3	67.9	
Medium Trucks:	61.3	60.7	54.3	52.7	61.2	61.4	
Heavy Trucks:	62.2	61.6	52.5	53.8	62.1	62.3	
Vehicle Noise:	69.4	68.5	65.3	60.7	69.2	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	119	257	553
CNEL:	59	128	276	594

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Research Drive  
 Road Segment: Scientific to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 16,713 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,379 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.79	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.75	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.7	64.6	62.8	56.8	65.4	66.0	
Medium Trucks:	59.4	58.7	52.4	50.8	59.3	59.5	
Heavy Trucks:	60.3	59.7	50.6	51.9	60.2	60.4	
Vehicle Noise:	67.5	66.6	63.4	58.8	67.3	67.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	89	192	413
CNEL:	44	95	206	443

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Research Drive  
 Road Segment: Bake Parkway to Muller

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,395 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,105 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.52	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.76	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.71	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.7	63.6	61.9	55.8	64.4	65.0	
Medium Trucks:	58.5	57.8	51.4	49.9	58.3	58.6	
Heavy Trucks:	59.3	58.7	49.7	50.9	59.3	59.4	
Vehicle Noise:	66.5	65.6	62.5	57.8	66.3	66.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	165	356
CNEL:	38	82	177	382

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Research Drive  
 Road Segment: Irvine Center Drive to Bunsen

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	10,553 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	871 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.55	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.79	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.75	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.7	62.6	60.8	54.8	63.4	64.0
Medium Trucks:	57.4	56.7	50.4	48.8	57.3	57.5
Heavy Trucks:	58.3	57.7	48.6	49.9	58.2	58.4
Vehicle Noise:	65.5	64.6	61.4	56.8	65.3	65.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	141	304
CNEL:	33	70	151	326

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative	Project Name: Irvine GP
Road Name: Ridge Valley (O Street)	Job Number: 15937
Road Segment: Irvine Boulevard to Trabuco Road (Great Park Boulevard)	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,991 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,237 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.03	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.27	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.22	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.1	62.4	56.3	64.9	65.5
Medium Trucks:	58.9	58.3	51.9	50.4	58.8	59.1
Heavy Trucks:	59.8	59.2	50.2	51.4	59.8	59.9
Vehicle Noise:	67.0	66.1	63.0	58.3	66.8	67.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	83	178	384
CNEL:	41	89	191	412

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Ridge Valley (O Street)  
 Road Segment: Portola Parkway to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,229 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,009 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.91	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.15	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.11	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.3	63.2	61.5	55.4	64.0	64.6	
Medium Trucks:	58.1	57.4	51.0	49.5	57.9	58.2	
Heavy Trucks:	58.9	58.3	49.3	50.5	58.9	59.0	
Vehicle Noise:	66.1	65.2	62.1	57.4	65.9	66.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	72	156	335
CNEL:	36	78	167	360

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative      Project Name: Irvine GP  
 Road Name: Ridge Valley (O Street)      Job Number: 15937  
 Road Segment: Trabuco Road (Great Park Boulevard) to Marine Way

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,130 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 918 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.52	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.9	62.8	61.1	55.0	63.6	64.2
Medium Trucks:	57.7	57.0	50.6	49.1	57.5	57.8
Heavy Trucks:	58.5	57.9	48.9	50.1	58.5	58.6
Vehicle Noise:	65.7	64.8	61.7	57.0	65.5	66.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	68	146	315
CNEL:	34	73	157	338

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Ridge Valley (O Street)  
 Road Segment: Ranchland to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 931 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 77 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-13.10	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-30.33	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-34.29	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	56.0	54.9	53.2	47.1	55.7	56.3	
Medium Trucks:	49.8	49.1	42.7	41.2	49.6	49.9	
Heavy Trucks:	50.6	50.0	41.0	42.2	50.6	50.7	
Vehicle Noise:	57.8	56.9	53.8	49.1	57.6	58.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	12	26	56
CNEL:	6	13	28	60



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Ridgeline Drive  
 Road Segment: Concordia East to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 16,267 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,342 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 32.140 Medium Trucks: 32.016 Heavy Trucks: 32.141																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	0.42	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-16.82	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	81.57	-20.78	2.78	-1.20	-5.56	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.3	65.2	63.5	57.4	66.0	66.6	
Medium Trucks:	60.5	59.9	53.5	52.0	60.4	60.6	
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5	
Vehicle Noise:	68.5	67.6	64.2	59.8	68.3	68.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	144	310
CNEL:	33	71	154	331

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Ridgeline Drive  
 Road Segment: Turtle Rock Drive to San Simeon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,191 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,253 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 35 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 40.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 40.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 32.140				
Road Grade: 0.0%		Medium Trucks: 32.016				
Left View: -90.0 degrees		Heavy Trucks: 32.141				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	0.12	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-17.12	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	81.57	-21.07	2.78	-1.20	-5.56	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.2	57.1	65.7	66.3
Medium Trucks:	60.2	59.6	53.2	51.7	60.1	60.3
Heavy Trucks:	62.1	61.5	52.4	53.7	62.1	62.2
Vehicle Noise:	68.2	67.3	63.9	59.5	68.0	68.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	296
CNEL:	32	68	147	317

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Rockfield Avenue  
 Road Segment: Whatney to McLaren

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,792 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,385 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.73	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.6	62.8	56.8	65.4	66.0
Medium Trucks:	59.4	58.8	52.4	50.9	59.3	59.6
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	67.5	66.6	63.5	58.8	67.3	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	89	192	414
CNEL:	44	96	206	444

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Rockfield Avenue  
 Road Segment: Bake Parkway to Whatney

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,636 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 630 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.96	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.20	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.15	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.3	61.2	59.4	53.4	62.0	62.6	
Medium Trucks:	56.0	55.3	49.0	47.4	55.9	56.1	
Heavy Trucks:	56.9	56.3	47.2	48.5	56.8	57.0	
Vehicle Noise:	64.1	63.2	60.0	55.4	63.9	64.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	53	114	245
CNEL:	26	57	122	263

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Rockfield Avenue  
 Road Segment: Thomas to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,795 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 478 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-5.16	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-22.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-26.35	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.1	60.0	58.2	52.2	60.8	61.4
Medium Trucks:	54.8	54.1	47.8	46.2	54.7	54.9
Heavy Trucks:	55.7	55.1	46.0	47.3	55.6	55.8
Vehicle Noise:	62.9	62.0	58.8	54.2	62.7	63.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	44	95	204
CNEL:	22	47	101	219

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Roosevelt  
 Road Segment: Jeffrey Road to Vision

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,577 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,450 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.02	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.4	61.6	55.6	64.2	64.8
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5
Heavy Trucks:	59.7	59.1	50.1	51.4	59.7	59.8
Vehicle Noise:	66.4	65.6	62.3	57.7	66.3	66.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	163	352
CNEL:	38	81	175	377

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Roosevelt  
 Road Segment: Yale Avenue to Van Buren

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,343 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 771 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 29.547 Medium Trucks: 29.411 Heavy Trucks: 29.547																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.57	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	77.72	-19.81	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	82.99	-23.76	3.32	-1.20	-5.77	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	65.0	63.2	57.2	65.8	66.4
Medium Trucks:	60.1	59.4	53.0	51.5	59.9	60.2
Heavy Trucks:	61.4	60.8	51.7	53.0	61.3	61.5
Vehicle Noise:	68.1	67.2	63.9	59.4	67.9	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	101	217
CNEL:	23	50	108	232

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Roosevelt  
 Road Segment: Vision to Bay Tree

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,893 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,394 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.19	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.2	61.4	55.4	64.0	64.6
Medium Trucks:	58.2	57.6	51.2	49.7	58.1	58.4
Heavy Trucks:	59.6	59.0	49.9	51.2	59.5	59.7
Vehicle Noise:	66.3	65.4	62.1	57.6	66.1	66.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	343
CNEL:	37	79	170	367



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Roosevelt  
 Road Segment: Nimitz to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,604 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,205 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.63	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.82	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.6	62.6	60.8	54.8	63.4	64.0
Medium Trucks:	57.6	56.9	50.6	49.0	57.5	57.7
Heavy Trucks:	58.9	58.3	49.3	50.6	58.9	59.0
Vehicle Noise:	65.6	64.7	61.5	56.9	65.5	65.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	144	311
CNEL:	33	72	155	333

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Roosevelt  
 Road Segment: Tulip (Road C) to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,013 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,156 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.00	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.5	62.4	60.6	54.6	63.2	63.8	
Medium Trucks:	57.4	56.8	50.4	48.9	57.3	57.5	
Heavy Trucks:	58.7	58.2	49.1	50.4	58.7	58.9	
Vehicle Noise:	65.5	64.6	61.3	56.7	65.3	65.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	141	303
CNEL:	32	70	150	324

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Royal Oak  
 Road Segment: Alton Parkway to Eaglecreek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,830 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 398 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 29.547 Medium Trucks: 29.411 Heavy Trucks: 29.547																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-4.86	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	75.75	-22.09	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	81.57	-26.05	3.32	-1.20	-5.77	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.6	60.5	58.7	52.7	61.3	61.9	
Medium Trucks:	55.8	55.1	48.8	47.2	55.7	55.9	
Heavy Trucks:	57.6	57.1	48.0	49.3	57.6	57.8	
Vehicle Noise:	63.8	62.9	59.5	55.1	63.6	64.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	113
CNEL:	12	26	56	120

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Oak Canyon Drive to Burt Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 52,249 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,311 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.94	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.30	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.26	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	69.2	67.4	61.4	70.0	70.6
Medium Trucks:	63.8	63.1	56.8	55.2	63.7	63.9
Heavy Trucks:	64.2	63.6	54.6	55.9	64.2	64.3
Vehicle Noise:	71.9	71.0	68.0	63.2	71.7	72.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	236	509	1,097
CNEL:	118	254	547	1,179

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Irvine Center Drive to Oak Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 50,129 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,136 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.76	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.48	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.44	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.0	67.2	61.2	69.8	70.4
Medium Trucks:	63.6	63.0	56.6	55.0	63.5	63.7
Heavy Trucks:	64.0	63.5	54.4	55.7	64.0	64.2
Vehicle Noise:	71.8	70.8	67.8	63.0	71.6	72.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	107	230	495	1,067
CNEL:	115	247	532	1,147

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-405 NB Off-Ramp to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,785 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,860 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.46	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-13.78	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.74	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.7	71.7	69.9	63.8	72.5	73.1
Medium Trucks:	66.3	65.6	59.3	57.7	66.2	66.4
Heavy Trucks:	66.7	66.1	57.1	58.3	66.7	66.8
Vehicle Noise:	74.4	73.5	70.4	65.7	74.2	74.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	247	532	1,146
CNEL:	123	265	571	1,231

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Burt Road to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 54,479 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,495 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.12	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.12	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.08	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.8	69.8	68.0	62.0	70.6	71.2	
Medium Trucks:	64.4	63.7	57.4	55.8	64.3	64.5	
Heavy Trucks:	64.8	64.2	55.2	56.4	64.8	64.9	
Vehicle Noise:	72.5	71.6	68.6	63.8	72.3	72.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	247	531	1,144
CNEL:	123	265	571	1,229

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Marine to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 62,427 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,150 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.71	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-12.53	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-16.48	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.8	71.7	70.0	63.9	72.5	73.1	
Medium Trucks:	66.4	65.7	59.3	57.8	66.3	66.5	
Heavy Trucks:	66.8	66.2	57.2	58.4	66.8	66.9	
Vehicle Noise:	74.5	73.6	70.5	65.8	74.3	74.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	194	417	898	1,935
CNEL:	208	448	965	2,079



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Trabuco Road to Towngate

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 41,347 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,411 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.92	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.32	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.27	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.2	68.2	66.4	60.3	69.0	69.6	
Medium Trucks:	62.8	62.1	55.8	54.2	62.7	62.9	
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3	
Vehicle Noise:	70.9	70.0	67.0	62.2	70.7	71.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	94	202	436	939
CNEL:	101	217	468	1,009

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Barranca Parkway to Waterworks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,517 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,260 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.72	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.51	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.47	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.0	68.0	66.2	60.1	68.8	69.4	
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7	
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1	
Vehicle Noise:	70.7	69.8	66.8	62.0	70.5	71.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	196	423	911
CNEL:	98	211	454	979

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-5 SB Off-Ramp to Marine

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 51,956 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,286 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.91	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-13.33	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-17.28	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.0	70.9	69.2	63.1	71.7	72.3
Medium Trucks:	65.6	64.9	58.5	57.0	65.5	65.7
Heavy Trucks:	66.0	65.4	56.4	57.6	66.0	66.1
Vehicle Noise:	73.7	72.8	69.7	65.0	73.5	74.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	171	369	795	1,712
CNEL:	184	396	854	1,840

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Hospital to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 38,333 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,162 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.59	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.65	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.60	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.9	67.8	66.1	60.0	68.6	69.2	
Medium Trucks:	62.5	61.8	55.4	53.9	62.3	62.6	
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0	
Vehicle Noise:	70.6	69.7	66.6	61.8	70.4	70.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	192	414	893
CNEL:	96	207	445	959

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Nightmist to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,225 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,896 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.50	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-13.74	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-17.70	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.6	70.5	68.8	62.7	71.3	71.9
Medium Trucks:	65.2	64.5	58.1	56.6	65.0	65.3
Heavy Trucks:	65.6	65.0	55.9	57.2	65.6	65.7
Vehicle Noise:	73.3	72.4	69.3	64.5	73.1	73.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	161	346	746	1,607
CNEL:	173	372	801	1,726

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 36,420 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,005 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.37	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.87	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.82	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.6	70.6	68.8	62.7	71.4	72.0	
Medium Trucks:	65.2	64.5	58.2	56.6	65.1	65.3	
Heavy Trucks:	65.6	65.0	56.0	57.2	65.6	65.7	
Vehicle Noise:	73.3	72.4	69.4	64.6	73.1	73.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	209	450	969
CNEL:	104	224	483	1,042

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-5 NB Off-Ramp to Nightmist

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 47,804 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,944 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.55	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-13.69	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-17.64	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.6	70.6	68.8	62.8	71.4	72.0
Medium Trucks:	65.2	64.5	58.2	56.6	65.1	65.3
Heavy Trucks:	65.6	65.0	56.0	57.3	65.6	65.7
Vehicle Noise:	73.3	72.4	69.4	64.6	73.1	73.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	162	349	752	1,620
CNEL:	174	375	808	1,740

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Towngate to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,276 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,993 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.35	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.89	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.84	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.2	61.5	55.2	53.6	62.1	62.3
Heavy Trucks:	62.6	62.1	53.0	54.3	62.6	62.7
Vehicle Noise:	70.4	69.4	66.4	61.6	70.2	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	399	860
CNEL:	92	199	429	924



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Waterworks to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,662 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,777 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.03	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.21	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.17	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.3	65.5	59.4	68.1	68.7
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	176	380	818
CNEL:	88	189	408	879

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Irvine Boulevard to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,085 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,904 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.39	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.85	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.80	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0
Heavy Trucks:	62.3	61.7	52.7	54.0	62.3	62.4
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	283	610
CNEL:	66	141	304	656

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Roosevelt to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,585 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,266 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.73	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-14.51	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-18.46	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.8	68.0	61.9	70.6	71.2
Medium Trucks:	64.4	63.7	57.4	55.8	64.3	64.5
Heavy Trucks:	64.8	64.2	55.2	56.4	64.8	64.9
Vehicle Noise:	72.5	71.6	68.6	63.8	72.3	72.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	308	663	1,428
CNEL:	153	331	712	1,535

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon Avenue  
 Road Segment: Alton Parkway to Hospital

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,877 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,877 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.18	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.06	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.01	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.8	66.1	60.0	68.6	69.2
Medium Trucks:	62.5	61.8	55.4	53.9	62.3	62.6
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0
Vehicle Noise:	70.6	69.7	66.6	61.8	70.4	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	183	395	850
CNEL:	91	197	424	913

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Sand Canyon/Shady Canyon  
 Road Segment: Quail Hill Parkway to I-405 SB Ramps

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,017 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,981 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.56	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.68	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.63	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.8	67.0	60.9	69.6	70.2
Medium Trucks:	63.4	62.7	56.4	54.8	63.3	63.5
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9
Vehicle Noise:	71.5	70.6	67.6	62.8	71.3	71.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	158	341	734
CNEL:	79	170	366	789

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Scientific Way  
 Road Segment: Irvine Center Drive to Wald

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,634 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 135 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-9.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-26.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-30.76	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	52.5	51.4	49.7	43.6	52.2	52.8	
Medium Trucks:	46.7	46.0	39.7	38.1	46.6	46.8	
Heavy Trucks:	48.6	48.0	38.9	40.2	48.5	48.7	
Vehicle Noise:	54.7	53.8	50.4	46.0	54.5	55.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	13	27	58
CNEL:	6	13	29	62

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Shady Canyon Drive  
 Road Segment: Culver Drive/Bonita Canyon Drive to Cloverfield

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,541 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 787 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.45	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-20.69	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-24.64	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.3	64.6	58.5	67.1	67.7
Medium Trucks:	61.0	60.3	53.9	52.4	60.8	61.1
Heavy Trucks:	61.4	60.8	51.7	53.0	61.4	61.5
Vehicle Noise:	69.1	68.2	65.1	60.3	68.9	69.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	68	147	316
CNEL:	34	73	158	340

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Shady Canyon Drive  
 Road Segment: Bommer Canyon Road to Sunnyhill

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,202 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 677 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.11	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-21.34	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.30	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.8	64.7	63.0	56.9	65.5	66.1	
Medium Trucks:	59.4	58.7	52.3	50.8	59.3	59.5	
Heavy Trucks:	59.8	59.2	50.2	51.4	59.8	59.9	
Vehicle Noise:	67.5	66.6	63.5	58.8	67.3	67.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	331
CNEL:	36	77	165	355



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Skyhawk  
 Road Segment: Great Park Boulevard to Marine Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,359 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 855 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 25 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-0.08	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-17.32	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-21.27	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.4	55.3	53.6	47.5	56.1	56.8
Medium Trucks:	51.2	50.6	44.2	42.7	51.1	51.4
Heavy Trucks:	54.5	53.9	44.8	46.1	54.4	54.6
Vehicle Noise:	59.3	58.4	54.5	50.6	59.1	59.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	25	55	118
CNEL:	13	27	58	125

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Southwood  
 Road Segment: Yale Avenue to Colt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,070 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 253 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-6.82	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-24.06	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-28.02	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	58.1	57.0	55.3	49.2	57.8	58.5	
Medium Trucks:	52.3	51.7	45.3	43.8	52.2	52.5	
Heavy Trucks:	54.2	53.6	44.6	45.8	54.2	54.3	
Vehicle Noise:	60.3	59.5	56.0	51.6	60.2	60.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	18	38	83
CNEL:	9	19	41	88

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Southwood  
 Road Segment: Challenger to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,909 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	240 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-7.06	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-24.30	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-28.25	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.9	56.8	55.0	49.0	57.6	58.2
Medium Trucks:	52.1	51.4	45.1	43.5	52.0	52.2
Heavy Trucks:	53.9	53.4	44.3	45.6	53.9	54.1
Vehicle Noise:	60.1	59.2	55.8	51.4	59.9	60.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	80
CNEL:	9	18	40	85

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Spectrum Center Drive (Fortune)  
 Road Segment: Pacifica to Quassar Drive (Spectrum )

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,720 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 967 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.57	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.53	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.2	58.1	56.3	50.3	58.9	59.5
Medium Trucks:	53.7	53.0	46.6	45.1	53.5	53.8
Heavy Trucks:	56.1	55.6	46.5	47.8	56.1	56.3
Vehicle Noise:	61.7	60.8	57.2	53.0	61.5	61.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	79	170
CNEL:	18	39	84	181

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Spectrum Center Drive (Fortune)  
 Road Segment: Quassar Drive (Spectrum ) to Gatewayb

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,355 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,102 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	0.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.01	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-20.96	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.7	58.7	56.9	50.9	59.5	60.1
Medium Trucks:	54.2	53.6	47.2	45.7	54.1	54.3
Heavy Trucks:	56.7	56.1	47.1	48.3	56.7	56.8
Vehicle Noise:	62.2	61.4	57.7	53.6	62.1	62.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	40	86	185
CNEL:	20	42	92	197

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Sunnyhill  
 Road Segment: Shady Canyon Drive to Turtle Rock Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,895 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	569 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-1.85	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-19.09	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-23.04	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.6	53.6	51.8	45.8	54.4	55.0
Medium Trucks:	49.5	48.8	42.4	40.9	49.4	49.6
Heavy Trucks:	52.7	52.1	43.1	44.3	52.7	52.8
Vehicle Noise:	57.5	56.7	52.8	48.9	57.4	57.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	42	90
CNEL:	10	21	44	95

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Technology Drive  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,560 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,769 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.47	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.72	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.9	59.8	68.4	69.0	
Medium Trucks:	62.4	61.8	55.4	53.9	62.3	62.6	
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4	
Vehicle Noise:	70.5	69.6	66.5	61.8	70.3	70.8	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	142	305	657
CNEL:	71	152	327	705

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative Project Name: Irvine GP  
 Road Name: Technology Drive Job Number: 15937  
 Road Segment: Old Laguna Canyon Road to I-5/SR-133 Undercrossing

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,533 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,106 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.91	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.4	64.7	58.6	67.2	67.8
Medium Trucks:	61.3	60.6	54.2	52.7	61.1	61.4
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	69.3	68.4	65.3	60.6	69.1	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	254	548
CNEL:	59	127	273	588



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Technology Drive  
 Road Segment: I-5/SR-133 to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,552 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,026 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.12	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.08	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.3	64.5	58.4	67.1	67.7
Medium Trucks:	61.1	60.4	54.1	52.5	61.0	61.2
Heavy Trucks:	61.9	61.3	52.3	53.6	61.9	62.0
Vehicle Noise:	69.2	68.3	65.1	60.4	69.0	69.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	115	248	534
CNEL:	57	123	266	573

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Technology Drive  
 Road Segment: Ada to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,603 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 545 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.59	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.83	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.78	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.6	60.6	58.8	52.7	61.4	62.0	
Medium Trucks:	55.4	54.7	48.3	46.8	55.3	55.5	
Heavy Trucks:	56.2	55.6	46.6	47.9	56.2	56.3	
Vehicle Noise:	63.5	62.6	59.4	54.7	63.3	63.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	48	103	222
CNEL:	24	51	111	239

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Toledo Way  
 Road Segment: Bake Parkway to City Limits

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,876 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 650 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-21.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-25.48	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.7	62.6	60.8	54.8	63.4	64.0	
Medium Trucks:	57.2	56.6	50.2	48.7	57.1	57.4	
Heavy Trucks:	57.7	57.1	48.0	49.3	57.6	57.8	
Vehicle Noise:	65.4	64.5	61.4	56.6	65.2	65.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	298
CNEL:	32	69	149	320

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Toledo Way  
 Road Segment: Goodyear to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,405 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 528 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.42	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.37	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.8	61.7	59.9	53.9	62.5	63.1	
Medium Trucks:	56.3	55.7	49.3	47.8	56.2	56.5	
Heavy Trucks:	56.8	56.2	47.1	48.4	56.7	56.9	
Vehicle Noise:	64.5	63.6	60.5	55.7	64.3	64.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	56	120	260
CNEL:	28	60	129	279

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Toledo Way  
 Road Segment: Alton Parkway to Parker

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,030 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 497 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.44	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.68	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.64	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.5	61.5	59.7	53.6	62.3	62.9
Medium Trucks:	56.1	55.4	49.0	47.5	56.0	56.2
Heavy Trucks:	56.5	55.9	46.9	48.1	56.5	56.6
Vehicle Noise:	64.2	63.3	60.3	55.5	64.0	64.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	116	249
CNEL:	27	58	124	268

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Trabuco Road  
 Road Segment: Keystone to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,918 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,231 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.05	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.29	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.24	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.1	62.3	56.3	64.9	65.5
Medium Trucks:	58.9	58.3	51.9	50.3	58.8	59.0
Heavy Trucks:	59.8	59.2	50.1	51.4	59.7	59.9
Vehicle Noise:	67.0	66.1	62.9	58.3	66.8	67.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	178	383
CNEL:	41	88	191	411

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Trabuco Road  
 Road Segment: Jeffrey Road to Keystone

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,426 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,190 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.39	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.0	64.0	62.2	56.1	64.8	65.4
Medium Trucks:	58.8	58.1	51.7	50.2	58.7	58.9
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7
Vehicle Noise:	66.9	65.9	62.8	58.1	66.7	67.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	81	174	374
CNEL:	40	87	186	402

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Trabuco Road  
 Road Segment: Culver Drive to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,569 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,119 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.46	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.70	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.66	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.8	63.7	61.9	55.9	64.5	65.1
Medium Trucks:	58.5	57.8	51.5	49.9	58.4	58.6
Heavy Trucks:	59.4	58.8	49.7	51.0	59.3	59.5
Vehicle Noise:	66.6	65.7	62.5	57.9	66.4	66.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	167	359
CNEL:	39	83	179	386



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Trabuco Road  
 Road Segment: Monroe to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,781 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,137 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.39	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.63	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.59	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.8	63.8	62.0	55.9	64.6	65.2
Medium Trucks:	58.6	57.9	51.5	50.0	58.5	58.7
Heavy Trucks:	59.4	58.8	49.8	51.0	59.4	59.5
Vehicle Noise:	66.7	65.7	62.6	57.9	66.5	66.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	169	363
CNEL:	39	84	181	390

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Trabuco Road  
 Road Segment: I-5 NB Off-Ramp to Monroe

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,404 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,106 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.51	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.75	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.71	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.7	63.6	61.9	55.8	64.4	65.0
Medium Trucks:	58.5	57.8	51.4	49.9	58.3	58.6
Heavy Trucks:	59.3	58.7	49.7	50.9	59.3	59.4
Vehicle Noise:	66.5	65.6	62.5	57.8	66.3	66.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	165	357
CNEL:	38	82	178	382

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Trabuco Road  
 Road Segment: Yale Avenue to Remington

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,594 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,039 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.78	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.02	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.98	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.4	61.6	55.5	64.2	64.8
Medium Trucks:	58.2	57.5	51.2	49.6	58.1	58.3
Heavy Trucks:	59.0	58.4	49.4	50.7	59.0	59.1
Vehicle Noise:	66.3	65.4	62.2	57.5	66.1	66.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	342
CNEL:	37	79	170	367

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Trabuco Road  
 Road Segment: Remington to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	11,786 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	972 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.07	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.31	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.27	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.1	63.1	61.3	55.3	63.9	64.5
Medium Trucks:	57.9	57.2	50.9	49.3	57.8	58.0
Heavy Trucks:	58.7	58.2	49.1	50.4	58.7	58.8
Vehicle Noise:	66.0	65.1	61.9	57.2	65.8	66.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	70	152	327
CNEL:	35	76	163	351

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Turtle Ridge Drive  
 Road Segment: Federation Way to Bonita Canyon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,959 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,729 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.43	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.81	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.77	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.6	63.8	57.8	66.4	67.0
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5
Heavy Trucks:	61.2	60.7	51.6	52.9	61.2	61.3
Vehicle Noise:	68.5	67.6	64.4	59.7	68.3	68.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	223	480
CNEL:	52	111	239	515

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Turtle Rock Drive  
 Road Segment: Ridgeline to Willowleaf

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,839 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	729 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.32	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-20.56	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-24.52	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.8	64.7	62.9	56.9	65.5	66.1
Medium Trucks:	59.5	58.9	52.5	51.0	59.4	59.7
Heavy Trucks:	60.4	59.8	50.7	52.0	60.4	60.5
Vehicle Noise:	67.6	66.7	63.6	58.9	67.4	67.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	117	252
CNEL:	27	58	126	271

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Turtle Rock Drive  
 Road Segment: Silkwood to Sunnyhill

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,790 vehicles	Autos:				15
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):				15
Peak Hour Volume:	725 vehicles	Heavy Trucks (3+ Axles):				15
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.35	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-20.58	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-24.54	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.7	62.9	56.9	65.5	66.1
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6
Heavy Trucks:	60.3	59.8	50.7	52.0	60.3	60.5
Vehicle Noise:	67.6	66.7	63.5	58.8	67.4	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	117	251
CNEL:	27	58	125	270

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Turtle Rock Drive  
 Road Segment: Canyon Park to Ridgeline

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,358 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	607 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.12	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-21.36	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-25.31	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.0	63.9	62.1	56.1	64.7	65.3
Medium Trucks:	58.7	58.1	51.7	50.2	58.6	58.9
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7
Vehicle Noise:	66.8	65.9	62.8	58.1	66.6	67.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	48	104	223
CNEL:	24	52	111	239



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Turtle Rock Drive  
 Road Segment: Sunnyhill to Southernwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,664 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 302 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-7.15	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-24.39	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-28.34	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	60.9	59.1	53.1	61.7	62.3
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8
Heavy Trucks:	56.5	56.0	46.9	48.2	56.5	56.7
Vehicle Noise:	63.8	62.9	59.7	55.0	63.6	64.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	30	65	140
CNEL:	15	32	70	150

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Turtle Rock Drive  
 Road Segment: Campus Drive to Hillgate

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,303 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	602 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.35	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.1	61.0	59.2	53.2	61.8	62.4
Medium Trucks:	55.8	55.1	48.8	47.2	55.7	55.9
Heavy Trucks:	56.7	56.1	47.0	48.3	56.6	56.8
Vehicle Noise:	63.9	63.0	59.8	55.2	63.7	64.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	51	110	238
CNEL:	26	55	118	255

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Turtle Rock Drive  
 Road Segment: Paseo Segovia to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,071 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	336 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	40.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	40.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 32.140				
Road Grade:	0.0%	Medium Trucks: 32.016				
Left View:	-90.0 degrees	Heavy Trucks: 32.141				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-6.69	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-23.93	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	84.25	-27.88	2.78	-1.20	-5.56	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.3	62.3	60.5	54.5	63.1	63.7
Medium Trucks:	57.1	56.5	50.1	48.5	57.0	57.2
Heavy Trucks:	57.9	57.4	48.3	49.6	57.9	58.1
Vehicle Noise:	65.2	64.3	61.1	56.4	65.0	65.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	40	86	185
CNEL:	20	43	92	199

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: University Drive  
 Road Segment: Golden Glow to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 43,486 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,588 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.05	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	70.0	68.3	62.2	70.8	71.4
Medium Trucks:	64.7	64.0	57.6	56.1	64.5	64.8
Heavy Trucks:	65.1	64.5	55.5	56.7	65.1	65.2
Vehicle Noise:	72.8	71.9	68.8	64.0	72.6	73.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	201	432	931
CNEL:	100	215	464	1,000

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: University Drive  
 Road Segment: Ridgeline to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 53,139 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,384 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 70.413				
Road Grade: 0.0%	Medium Trucks: 70.356				
Left View: -90.0 degrees	Heavy Trucks: 70.413				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.01	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.23	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-17.18	-2.33	-1.20	-5.25	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.7	69.6	67.9	61.8	70.4	71.0	
Medium Trucks:	64.2	63.6	57.2	55.7	64.1	64.4	
Heavy Trucks:	64.7	64.1	55.0	56.3	64.6	64.8	
Vehicle Noise:	72.4	71.5	68.4	63.6	72.2	72.6	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	105	226	486	1,048
CNEL:	113	243	522	1,126

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: University Drive  
 Road Segment: Culver Drive to Golden Glow

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 42,225 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,484 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.18	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.0	69.9	68.1	62.1	70.7	71.3	
Medium Trucks:	64.5	63.9	57.5	56.0	64.4	64.7	
Heavy Trucks:	64.9	64.4	55.3	56.6	64.9	65.1	
Vehicle Noise:	72.7	71.7	68.7	63.9	72.5	72.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	197	424	913
CNEL:	98	211	455	981

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: University Drive  
 Road Segment: Yale Avenue to Ridgeline

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 37,727 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,112 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.52	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.67	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.5	69.4	67.7	61.6	70.2	70.8	
Medium Trucks:	64.0	63.4	57.0	55.5	63.9	64.2	
Heavy Trucks:	64.5	63.9	54.8	56.1	64.4	64.6	
Vehicle Noise:	72.2	71.3	68.2	63.4	72.0	72.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	182	393	847
CNEL:	91	196	422	910

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: University Drive  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 59,773 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,931 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.52	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-12.72	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-16.67	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.8	68.0	61.9	70.6	71.2
Medium Trucks:	64.4	63.7	57.4	55.8	64.3	64.5
Heavy Trucks:	64.8	64.2	55.2	56.4	64.8	64.9
Vehicle Noise:	72.5	71.6	68.6	63.8	72.3	72.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	120	259	557	1,200
CNEL:	129	278	599	1,289



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: University Drive  
 Road Segment: Mesa to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 46,258 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,816 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.41	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-13.83	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.79	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.7	71.6	69.8	63.8	72.4	73.0
Medium Trucks:	66.2	65.6	59.2	57.7	66.1	66.4
Heavy Trucks:	66.6	66.1	57.0	58.3	66.6	66.8
Vehicle Noise:	74.4	73.4	70.4	65.6	74.2	74.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	245	528	1,137
CNEL:	122	263	567	1,222

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative	Project Name: Irvine GP
Road Name: University Drive	Job Number: 15937
Road Segment: MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 46,885 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 3,868 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 50 mph																					
Near/Far Lane Distance: 74 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 60.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 60.0 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 47.329																				
Left View: -90.0 degrees	Medium Trucks: 47.244																				
Right View: 90.0 degrees	Heavy Trucks: 47.329																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.47	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-13.77	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.73	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.7	71.7	69.9	63.8	72.5	73.1
Medium Trucks:	66.3	65.6	59.3	57.7	66.2	66.4
Heavy Trucks:	66.7	66.1	57.1	58.3	66.7	66.8
Vehicle Noise:	74.4	73.5	70.5	65.7	74.2	74.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	247	532	1,147
CNEL:	123	266	572	1,233

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: University Drive  
 Road Segment: California Avenue to Mesa

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,113 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,722 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.30	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-13.94	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.90	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.6	71.5	69.7	63.7	72.3	72.9
Medium Trucks:	66.1	65.5	59.1	57.5	66.0	66.2
Heavy Trucks:	66.5	66.0	56.9	58.2	66.5	66.6
Vehicle Noise:	74.3	73.3	70.3	65.5	74.1	74.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	112	241	519	1,118
CNEL:	120	259	558	1,201

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: University Drive  
 Road Segment: Campus Drive to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 38,009 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,136 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.55	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.68	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.64	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.9	67.8	66.0	60.0	68.6	69.2	
Medium Trucks:	62.4	61.8	55.4	53.8	62.3	62.5	
Heavy Trucks:	62.8	62.3	53.2	54.5	62.8	63.0	
Vehicle Noise:	70.6	69.6	66.6	61.8	70.4	70.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	191	412	887
CNEL:	95	205	443	954

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative Project Name: Irvine GP  
 Road Name: University Drive Job Number: 15937  
 Road Segment: SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,520 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,693 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 42.814				
Road Grade: 0.0%	Medium Trucks: 42.720				
Left View: -90.0 degrees	Heavy Trucks: 42.814				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.12	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-17.36	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-21.32	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	67.0	60.9	69.5	70.1
Medium Trucks:	63.4	62.7	56.3	54.8	63.2	63.5
Heavy Trucks:	63.8	63.2	54.1	55.4	63.8	63.9
Vehicle Noise:	71.5	70.6	67.5	62.7	71.3	71.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	283	609
CNEL:	65	141	304	655

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative Project Name: Irvine GP  
 Road Name: University Drive Job Number: 15937  
 Road Segment: SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,513 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,847 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.14	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.10	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.06	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.4	65.6	59.6	68.2	68.8
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	70.1	69.2	66.2	61.4	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	179	386	832
CNEL:	89	193	415	894

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: University Drive  
 Road Segment: San Joaquin to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,679 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,531 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.62	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.61	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.57	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.9	65.1	59.0	67.7	68.3
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	69.6	68.7	65.7	60.9	69.4	69.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	357	769
CNEL:	83	178	384	827

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: University Drive  
 Road Segment: Harvard Avenue to San Joaquin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,550 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,520 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.61	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.63	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.59	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.8	65.1	59.0	67.7	68.3
Medium Trucks:	61.5	60.8	54.4	52.9	61.4	61.6
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	69.6	68.7	65.6	60.9	69.4	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	356	767
CNEL:	82	178	383	824



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Valley Oak Drive  
 Road Segment: Hawkcreek to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,837 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,142 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.83	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.03	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	65.1	63.3	57.2	65.9	66.5
Medium Trucks:	59.7	59.0	52.7	51.1	59.6	59.8
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2
Vehicle Noise:	67.8	66.9	63.9	59.1	67.6	68.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	93	201	434
CNEL:	47	100	216	466

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Valley Oak Drive  
 Road Segment: Irvine Center Drive to Oak Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,291 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,014 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 42.814				
Road Grade: 0.0%		Medium Trucks: 42.720				
Left View: -90.0 degrees		Heavy Trucks: 42.814				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.35	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-19.59	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-23.54	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.5	64.7	58.7	67.3	67.9
Medium Trucks:	61.1	60.5	54.1	52.6	61.0	61.3
Heavy Trucks:	61.5	61.0	51.9	53.2	61.5	61.7
Vehicle Noise:	69.3	68.3	65.3	60.5	69.1	69.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	93	201	433
CNEL:	47	100	216	465

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Valley Oak Drive  
 Road Segment: Barranca Parkway to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,266 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 929 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.73	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.96	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.92	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.2	64.2	62.4	56.3	65.0	65.6	
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9	
Heavy Trucks:	59.2	58.6	49.6	50.8	59.2	59.3	
Vehicle Noise:	66.9	66.0	63.0	58.2	66.7	67.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	176	378
CNEL:	41	88	189	406

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Valley Oak Drive  
 Road Segment: Alton Parkway to Hawkcreek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,590 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	544 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.06	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.29	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.25	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.9	61.8	60.1	54.0	62.6	63.2
Medium Trucks:	56.5	55.8	49.4	47.9	56.4	56.6
Heavy Trucks:	56.9	56.3	47.3	48.5	56.9	57.0
Vehicle Noise:	64.6	63.7	60.6	55.9	64.4	64.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	57	123	265
CNEL:	28	61	132	284

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Marriott to Morse Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 35,487 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,928 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.71	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.48	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.9	66.1	60.0	68.7	69.3
Medium Trucks:	62.7	62.0	55.7	54.1	62.6	62.8
Heavy Trucks:	63.5	62.9	53.9	55.2	63.5	63.6
Vehicle Noise:	70.8	69.9	66.7	62.0	70.6	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	147	317	682
CNEL:	73	158	340	732

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Michelson Drive to Quartz

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,303 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,830 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.67	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.63	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	66.0	59.9	68.5	69.1
Medium Trucks:	62.5	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	70.6	69.7	66.6	61.9	70.4	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	310	667
CNEL:	72	154	332	716

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,736 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,783 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.74	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.70	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.9	59.8	68.4	69.1	
Medium Trucks:	62.5	61.8	55.4	53.9	62.3	62.6	
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4	
Vehicle Noise:	70.5	69.6	66.5	61.8	70.4	70.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	142	306	660
CNEL:	71	152	328	708

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 41,710 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,441 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 75.0 feet Centerline Dist. to Observer: 75.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 70.413 Medium Trucks: 70.356 Heavy Trucks: 70.413																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.42	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.82	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	84.25	-17.78	-2.33	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.3	65.5	59.5	68.1	68.7	
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2	
Heavy Trucks:	62.9	62.4	53.3	54.6	62.9	63.0	
Vehicle Noise:	70.2	69.3	66.1	61.4	70.0	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	347	748
CNEL:	80	173	373	803



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Main Street to Anchor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 33,066 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,728 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.41	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.83	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.79	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.6	65.8	59.7	68.4	69.0
Medium Trucks:	62.4	61.7	55.3	53.8	62.3	62.5
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3
Vehicle Noise:	70.5	69.5	66.4	61.7	70.3	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	140	302	651
CNEL:	70	150	324	698

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Anchor to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,904 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,632 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.99	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.94	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.6	59.6	68.2	68.8
Medium Trucks:	62.2	61.6	55.2	53.6	62.1	62.3
Heavy Trucks:	63.1	62.5	53.4	54.7	63.0	63.2
Vehicle Noise:	70.3	69.4	66.2	61.6	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	137	295	636
CNEL:	68	147	316	682

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Morse to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,079 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,481 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.20	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.1	65.4	59.3	67.9	68.6
Medium Trucks:	62.0	61.3	54.9	53.4	61.9	62.1
Heavy Trucks:	62.8	62.2	53.2	54.4	62.8	62.9
Vehicle Noise:	70.0	69.1	66.0	61.3	69.9	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	284	611
CNEL:	66	141	304	656

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Martin to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,978 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,143 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.36	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.88	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.83	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.5	64.7	58.7	67.3	67.9
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.4
Heavy Trucks:	62.2	61.6	52.5	53.8	62.2	62.3
Vehicle Noise:	69.4	68.5	65.4	60.7	69.2	69.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	119	257	554
CNEL:	59	128	276	595

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Campus Drive to Martin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,324 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,089 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.99	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.95	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.4	64.6	58.6	67.2	67.8
Medium Trucks:	61.2	60.5	54.2	52.6	61.1	61.3
Heavy Trucks:	62.1	61.5	52.4	53.7	62.0	62.2
Vehicle Noise:	69.3	68.4	65.2	60.6	69.1	69.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	117	253	545
CNEL:	58	126	271	584

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Von Karman Avenue  
 Road Segment: Dupont Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,306 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,088 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.99	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.95	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.4	64.6	58.6	67.2	67.8
Medium Trucks:	61.2	60.5	54.2	52.6	61.1	61.3
Heavy Trucks:	62.1	61.5	52.4	53.7	62.0	62.2
Vehicle Noise:	69.3	68.4	65.2	60.6	69.1	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	117	253	545
CNEL:	58	126	271	584

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Jeffrey Road to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 34,873 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,877 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.64	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.60	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.56	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.9	67.8	66.0	60.0	68.6	69.2	
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7	
Heavy Trucks:	63.5	62.9	53.8	55.1	63.4	63.6	
Vehicle Noise:	70.7	69.8	66.6	62.0	70.5	71.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	145	313	674
CNEL:	72	156	336	723

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Myford Road to Jamboree Road SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,422 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,932 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.91	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.33	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.28	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.1	66.1	64.3	58.2	66.9	67.5	
Medium Trucks:	60.9	60.2	53.8	52.3	60.8	61.0	
Heavy Trucks:	61.7	61.1	52.1	53.3	61.7	61.8	
Vehicle Noise:	69.0	68.1	64.9	60.2	68.8	69.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	111	240	517
CNEL:	55	120	258	555



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Walnut Avenue  
 Road Segment: The Mall Street to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,556 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,778 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.55	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.69	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.65	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	61.4	60.8	51.7	53.0	61.3	61.5
Vehicle Noise:	68.6	67.7	64.5	59.9	68.4	68.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	105	227	489
CNEL:	52	113	244	525

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Harvard Avenue to The Mall Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,466 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,771 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.71	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.66	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	61.3	60.8	51.7	53.0	61.3	61.5
Vehicle Noise:	68.6	67.7	64.5	59.8	68.4	68.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	105	227	488
CNEL:	52	113	243	524

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Franciscan Street to Ravenwood Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,217 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,668 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.97	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.92	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.5	65.4	63.7	57.6	66.2	66.8	
Medium Trucks:	60.2	59.6	53.2	51.7	60.1	60.4	
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2	
Vehicle Noise:	68.3	67.4	64.3	59.6	68.1	68.6	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	101	218	469
CNEL:	50	108	233	503

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Ravenwood Street to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,725 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,627 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.16	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.03	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.4	65.3	63.5	57.5	66.1	66.7	
Medium Trucks:	60.1	59.5	53.1	51.6	60.0	60.3	
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1	
Vehicle Noise:	68.2	67.3	64.2	59.5	68.0	68.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	99	214	461
CNEL:	49	107	230	495

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Culver Drive to Franciscan Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,522 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,611 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.12	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.12	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.08	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.3	65.3	63.5	57.4	66.1	66.7	
Medium Trucks:	60.1	59.4	53.1	51.5	60.0	60.2	
Heavy Trucks:	60.9	60.3	51.3	52.6	60.9	61.0	
Vehicle Noise:	68.2	67.3	64.1	59.4	68.0	68.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	99	213	458
CNEL:	49	106	228	491

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Peters Canyon Road to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,432 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,181 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.43	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.80	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.76	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.2	57.1	65.7	66.3
Medium Trucks:	59.8	59.1	52.7	51.2	59.6	59.9
Heavy Trucks:	60.6	60.0	51.0	52.2	60.6	60.7
Vehicle Noise:	67.8	66.9	63.8	59.1	67.6	68.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	126	271	585
CNEL:	63	135	291	627

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative Project Name: Irvine GP  
 Road Name: Walnut Avenue Job Number: 15937  
 Road Segment: Jamboree Road NB Off-Ramp to Peters Canyon Road

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,325 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,089 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.25	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.99	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.95	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.8	64.7	63.0	56.9	65.6	66.2
Medium Trucks:	59.6	58.9	52.5	51.0	59.4	59.7
Heavy Trucks:	60.4	59.8	50.8	52.0	60.4	60.5
Vehicle Noise:	67.6	66.7	63.6	58.9	67.5	67.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	122	264	568
CNEL:	61	131	283	610

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Yale Avenue to Kazan Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,195 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,254 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.97	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.21	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.16	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.2	62.4	56.4	65.0	65.6
Medium Trucks:	59.0	58.3	52.0	50.4	58.9	59.1
Heavy Trucks:	59.8	59.3	50.2	51.5	59.8	60.0
Vehicle Noise:	67.1	66.2	63.0	58.3	66.9	67.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	180	388
CNEL:	42	90	193	416



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Walnut Avenue  
 Road Segment: Wisteria to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,856 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,226 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.07	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.31	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.26	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.1	62.3	56.3	64.9	65.5
Medium Trucks:	58.9	58.2	51.9	50.3	58.8	59.0
Heavy Trucks:	59.7	59.2	50.1	51.4	59.7	59.9
Vehicle Noise:	67.0	66.1	62.9	58.2	66.8	67.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	177	382
CNEL:	41	88	190	410

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative Project Name: Irvine GP  
 Road Name: Warner Avenue Job Number: 15937  
 Road Segment: Jamboree Road SB Off-ramp to Construction North

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,958 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,389 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.83	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.41	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.36	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.0	67.0	65.2	59.2	67.8	68.4	
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9	
Heavy Trucks:	62.6	62.1	53.0	54.3	62.6	62.8	
Vehicle Noise:	69.9	69.0	65.8	61.1	69.7	70.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	128	277	596
CNEL:	64	138	297	639

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Warner Avenue  
 Road Segment: Construction North to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,168 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,664 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.93	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.5	65.4	63.6	57.6	66.2	66.8	
Medium Trucks:	60.2	59.6	53.2	51.7	60.1	60.3	
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2	
Vehicle Noise:	68.3	67.4	64.3	59.6	68.1	68.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	101	217	468
CNEL:	50	108	233	502

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Warner Avenue  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,205 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,172 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.46	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.0	63.9	62.1	56.1	64.7	65.3
Medium Trucks:	58.7	58.0	51.7	50.1	58.6	58.8
Heavy Trucks:	59.6	59.0	49.9	51.2	59.5	59.7
Vehicle Noise:	66.8	65.9	62.7	58.1	66.6	67.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	80	172	371
CNEL:	40	86	185	398

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Warner Avenue  
 Road Segment: Santa Ynez to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,717 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 967 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.29	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.1	63.1	61.3	55.2	63.9	64.5	
Medium Trucks:	57.9	57.2	50.8	49.3	57.8	58.0	
Heavy Trucks:	58.7	58.1	49.1	50.3	58.7	58.8	
Vehicle Noise:	66.0	65.0	61.9	57.2	65.8	66.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	70	151	326
CNEL:	35	75	162	350

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Warner Avenue  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,973 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 905 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.38	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.62	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.58	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.8	62.8	61.0	54.9	63.6	64.2	
Medium Trucks:	57.6	56.9	50.6	49.0	57.5	57.7	
Heavy Trucks:	58.4	57.8	48.8	50.1	58.4	58.5	
Vehicle Noise:	65.7	64.8	61.6	56.9	65.5	65.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	145	312
CNEL:	33	72	155	335

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: West Yale Loop  
 Road Segment: Alton Parkway to Blue Lake North

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,360 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 772 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.76	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.7	60.6	58.9	52.8	61.4	62.0	
Medium Trucks:	55.7	55.0	48.6	47.1	55.6	55.8	
Heavy Trucks:	57.0	56.4	47.4	48.6	57.0	57.1	
Vehicle Noise:	63.7	62.8	59.5	55.0	63.5	64.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	107	231
CNEL:	25	53	115	248

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: West Yale Loop  
 Road Segment: Eagle Run to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,015 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	744 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.73	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.96	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.92	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.5	60.5	58.7	52.7	61.3	61.9
Medium Trucks:	55.5	54.8	48.5	46.9	55.4	55.6
Heavy Trucks:	56.8	56.2	47.2	48.5	56.8	56.9
Vehicle Noise:	63.5	62.7	59.4	54.8	63.4	63.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	49	105	226
CNEL:	24	52	112	242



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: West Yale Loop  
 Road Segment: Thunder Run to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,484 vehicles	Autos:				15
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):				15
Peak Hour Volume:	782 vehicles	Heavy Trucks (3+ Axles):				15
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.51	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.74	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.70	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.8	60.7	58.9	52.9	61.5	62.1
Medium Trucks:	55.7	55.1	48.7	47.2	55.6	55.8
Heavy Trucks:	57.0	56.5	47.4	48.7	57.0	57.2
Vehicle Noise:	63.8	62.9	59.6	55.0	63.6	64.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	233
CNEL:	25	54	116	250

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: West Yale Loop  
 Road Segment: Main Street to Timber Run

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,261 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 599 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.86	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.6	59.5	57.8	51.7	60.3	60.9	
Medium Trucks:	54.6	53.9	47.5	46.0	54.5	54.7	
Heavy Trucks:	55.9	55.3	46.3	47.5	55.9	56.0	
Vehicle Noise:	62.6	61.7	58.4	53.9	62.4	62.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	42	91	195
CNEL:	21	45	97	209

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: West Yale Loop  
 Road Segment: Yale Avenue to Shorebird

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,013 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	661 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.43	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.0	60.0	58.2	52.1	60.8	61.4
Medium Trucks:	55.0	54.3	48.0	46.4	54.9	55.1
Heavy Trucks:	56.3	55.7	46.7	47.9	56.3	56.4
Vehicle Noise:	63.0	62.1	58.9	54.3	62.8	63.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	45	97	209
CNEL:	22	48	104	223

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: West Yale Loop  
 Road Segment: Warner Avenue to Stonecreek South

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,018 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	579 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.01	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.5	59.4	57.6	51.6	60.2	60.8
Medium Trucks:	54.4	53.8	47.4	45.8	54.3	54.5
Heavy Trucks:	55.7	55.2	46.1	47.4	55.7	55.9
Vehicle Noise:	62.5	61.6	58.3	53.7	62.3	62.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	41	89	191
CNEL:	20	44	95	204

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: West Yale Loop  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,549 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 540 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.31	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.2	59.1	57.3	51.3	59.9	60.5	
Medium Trucks:	54.1	53.5	47.1	45.5	54.0	54.2	
Heavy Trucks:	55.4	54.9	45.8	47.1	55.4	55.5	
Vehicle Noise:	62.2	61.3	58.0	53.4	62.0	62.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	85	182
CNEL:	20	42	91	195

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: West Yale Loop  
 Road Segment: Stonecreek North to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,875 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 567 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.90	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.14	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.10	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.4	59.3	57.5	51.5	60.1	60.7	
Medium Trucks:	54.3	53.7	47.3	45.8	54.2	54.5	
Heavy Trucks:	55.7	55.1	46.0	47.3	55.6	55.8	
Vehicle Noise:	62.4	61.5	58.2	53.6	62.2	62.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	41	87	188
CNEL:	20	43	94	202

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: West Yale Loop  
 Road Segment: Birdsong to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,637 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	548 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.06	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.29	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.25	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.2	59.1	57.4	51.3	59.9	60.6
Medium Trucks:	54.2	53.5	47.1	45.6	54.1	54.3
Heavy Trucks:	55.5	54.9	45.9	47.1	55.5	55.6
Vehicle Noise:	62.2	61.3	58.0	53.5	62.0	62.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	40	85	184
CNEL:	20	42	91	197

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Westwood  
 Road Segment: Yorktown to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,031 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 498 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-3.89	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-21.13	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-25.08	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.0	60.0	58.2	52.2	60.8	61.4	
Medium Trucks:	55.3	54.6	48.2	46.7	55.2	55.4	
Heavy Trucks:	57.1	56.5	47.5	48.7	57.1	57.2	
Vehicle Noise:	63.3	62.4	59.0	54.6	63.1	63.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	13	28	60	130
CNEL:	14	30	64	139



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Westwood  
 Road Segment: Bryan Avenue to Leaf

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,919 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	323 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.76	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-23.00	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-26.96	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.2	58.1	56.3	50.3	58.9	59.5
Medium Trucks:	53.4	52.7	46.4	44.8	53.3	53.5
Heavy Trucks:	55.2	54.7	45.6	46.9	55.2	55.4
Vehicle Noise:	61.4	60.5	57.1	52.7	61.2	61.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	10	21	45	97
CNEL:	10	22	48	104

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Yale Avenue  
 Road Segment: Deerfield Avenue to Winvale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,502 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 866 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.57	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-19.81	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-23.77	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.5	65.5	63.7	57.6	66.3	66.9	
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4	
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2	
Vehicle Noise:	68.4	67.5	64.3	59.6	68.2	68.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	131	283
CNEL:	30	65	141	304

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Yale Avenue  
 Road Segment: Hicks Canyon Drive to Meadowood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,828 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 646 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.85	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-21.09	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-25.04	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.2	64.2	62.4	56.4	65.0	65.6	
Medium Trucks:	59.0	58.3	52.0	50.4	58.9	59.1	
Heavy Trucks:	59.8	59.3	50.2	51.5	59.8	60.0	
Vehicle Noise:	67.1	66.2	63.0	58.3	66.9	67.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	233
CNEL:	25	54	116	250

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Yale Avenue  
 Road Segment: Walnut Avenue to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,197 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,254 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 32.140 Medium Trucks: 32.016 Heavy Trucks: 32.141																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.97	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-18.21	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	84.25	-22.16	2.78	-1.20	-5.56	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.2	60.2	68.8	69.4
Medium Trucks:	62.8	62.2	55.8	54.3	62.7	63.0
Heavy Trucks:	63.7	63.1	54.0	55.3	63.6	63.8
Vehicle Noise:	70.9	70.0	66.8	62.2	70.7	71.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	96	207	446
CNEL:	48	103	222	479

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Yale Avenue  
 Road Segment: Roosevelt to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,306 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,180 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.47	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.43	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.0	63.9	62.2	56.1	64.7	65.3	
Medium Trucks:	58.7	58.1	51.7	50.2	58.6	58.9	
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7	
Vehicle Noise:	66.8	65.9	62.8	58.1	66.6	67.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	80	173	372
CNEL:	40	86	185	399

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Yale Avenue  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,416 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,107 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.51	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.75	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.70	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.7	63.6	61.9	55.8	64.4	65.0
Medium Trucks:	58.5	57.8	51.4	49.9	58.3	58.6
Heavy Trucks:	59.3	58.7	49.7	50.9	59.3	59.4
Vehicle Noise:	66.5	65.6	62.5	57.8	66.3	66.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	166	357
CNEL:	38	82	178	383

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Yale Avenue  
 Road Segment: West Yale Loop to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,658 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,044 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.76	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.00	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.96	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.5	63.4	61.6	55.6	64.2	64.8
Medium Trucks:	58.2	57.5	51.2	49.6	58.1	58.3
Heavy Trucks:	59.0	58.5	49.4	50.7	59.0	59.2
Vehicle Noise:	66.3	65.4	62.2	57.6	66.1	66.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	343
CNEL:	37	79	171	368

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Yale Avenue  
 Road Segment: Winvale Avenue to Karen Ann Lane

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,524 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 868 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.76	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.7	62.6	60.8	54.8	63.4	64.0
Medium Trucks:	57.4	56.7	50.4	48.8	57.3	57.5
Heavy Trucks:	58.2	57.7	48.6	49.9	58.2	58.4
Vehicle Noise:	65.5	64.6	61.4	56.8	65.3	65.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	141	303
CNEL:	33	70	151	325



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Yale Avenue  
 Road Segment: Karen Ann Lane to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,524 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 868 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.76	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.7	62.6	60.8	54.8	63.4	64.0	
Medium Trucks:	57.4	56.7	50.4	48.8	57.3	57.5	
Heavy Trucks:	58.2	57.7	48.6	49.9	58.2	58.4	
Vehicle Noise:	65.5	64.6	61.4	56.8	65.3	65.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	141	303
CNEL:	33	70	151	325

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Conservative  
 Road Name: Yale Avenue  
 Road Segment: Trabuco Road to Southwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,332 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 852 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.64	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.88	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.84	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.6	62.5	60.7	54.7	63.3	63.9	
Medium Trucks:	57.3	56.7	50.3	48.7	57.2	57.4	
Heavy Trucks:	58.2	57.6	48.5	49.8	58.1	58.3	
Vehicle Noise:	65.4	64.5	61.3	56.7	65.2	65.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	139	300
CNEL:	32	69	149	322

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Yale Avenue  
 Road Segment: Southwood to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,807 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	809 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.87	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.07	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.3	62.3	60.5	54.5	63.1	63.7
Medium Trucks:	57.1	56.4	50.1	48.5	57.0	57.2
Heavy Trucks:	57.9	57.4	48.3	49.6	57.9	58.1
Vehicle Noise:	65.2	64.3	61.1	56.4	65.0	65.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	62	134	289
CNEL:	31	67	144	311

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Yale Avenue  
 Road Segment: Northwood to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,199 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	759 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.34	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.1	62.0	60.2	54.2	62.8	63.4
Medium Trucks:	56.8	56.2	49.8	48.2	56.7	56.9
Heavy Trucks:	57.7	57.1	48.0	49.3	57.6	57.8
Vehicle Noise:	64.9	64.0	60.8	56.2	64.7	65.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	60	129	277
CNEL:	30	64	138	298

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Yale Avenue  
 Road Segment: Bryan Avenue to Monticello

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,895 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	734 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.53	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.49	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.9	61.9	60.1	54.0	62.7	63.3
Medium Trucks:	56.7	56.0	49.6	48.1	56.6	56.8
Heavy Trucks:	57.5	56.9	47.9	49.1	57.5	57.6
Vehicle Noise:	64.8	63.8	60.7	56.0	64.6	65.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	126	271
CNEL:	29	63	135	291

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Yale Avenue  
 Road Segment: Irvine Boulevard to Park Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,432 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	613 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.08	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.31	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.27	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.1	61.1	59.3	53.3	61.9	62.5
Medium Trucks:	55.9	55.2	48.9	47.3	55.8	56.0
Heavy Trucks:	56.7	56.2	47.1	48.4	56.7	56.8
Vehicle Noise:	64.0	63.1	59.9	55.2	63.8	64.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	112	241
CNEL:	26	56	120	258

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Yale Avenue  
 Road Segment: University Drive to Royce

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,006 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	331 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	50.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 42.814				
Road Grade:	0.0%	Medium Trucks: 42.720				
Left View:	-90.0 degrees	Heavy Trucks: 42.814				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-6.76	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	79.45	-24.00	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	84.25	-27.95	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.4	60.3	58.6	52.5	61.1	61.8
Medium Trucks:	55.2	54.5	48.1	46.6	55.1	55.3
Heavy Trucks:	56.0	55.4	46.4	47.6	56.0	56.1
Vehicle Noise:	63.2	62.3	59.2	54.5	63.1	63.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	80	172
CNEL:	18	40	86	185

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Conservative  
 Road Name: Yale Court  
 Road Segment: Arborwood to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,472 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	534 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-2.12	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-19.36	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-23.32	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.2	56.2	54.4	48.4	57.0	57.6
Medium Trucks:	52.1	51.4	45.1	43.5	52.0	52.2
Heavy Trucks:	55.3	54.7	45.7	46.9	55.3	55.4
Vehicle Noise:	60.1	59.3	55.4	51.5	60.0	60.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	80
CNEL:	9	18	40	85



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Ada  
 Road Segment: Barranca Parway to Marine Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,050 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,902 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.35	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-15.89	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-19.84	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.7	59.6	68.2	68.8
Medium Trucks:	62.5	61.8	55.4	53.9	62.4	62.6
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9
Vehicle Noise:	70.5	69.6	66.3	61.8	70.3	70.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	85	183	394
CNEL:	42	91	196	422

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Ada  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,443 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,594 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.70	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-14.54	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-18.49	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.0	65.9	64.1	58.1	66.7	67.3	
Medium Trucks:	60.9	60.3	53.9	52.4	60.8	61.1	
Heavy Trucks:	62.3	61.7	52.6	53.9	62.2	62.4	
Vehicle Noise:	69.0	68.1	64.8	60.3	68.8	69.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	112	241	519
CNEL:	56	120	258	556

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Enterprise to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 76,615 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 6,321 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	5.60	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-11.64	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-15.60	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.9	70.8	69.1	63.0	71.6	72.2
Medium Trucks:	65.5	64.8	58.4	56.9	65.4	65.6
Heavy Trucks:	65.9	65.3	56.3	57.5	65.9	66.0
Vehicle Noise:	73.6	72.7	69.6	64.9	73.4	73.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	142	305	657	1,416
CNEL:	152	328	706	1,521

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: I-5 NB Off-Ramp to Technology Drive West

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 80,851 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 6,670 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	5.83	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-11.41	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-15.36	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.5	71.5	69.7	63.7	72.3	72.9
Medium Trucks:	66.1	65.4	59.1	57.5	66.0	66.2
Heavy Trucks:	66.5	65.9	56.9	58.2	66.5	66.6
Vehicle Noise:	74.2	73.3	70.3	65.5	74.0	74.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	149	321	691	1,489
CNEL:	160	345	742	1,600

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: East Yale Loop to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,166 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,654 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.83	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.41	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.36	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	67.0	60.9	69.5	70.1
Medium Trucks:	63.4	62.7	56.3	54.8	63.2	63.5
Heavy Trucks:	63.8	63.2	54.1	55.4	63.8	63.9
Vehicle Noise:	71.5	70.6	67.5	62.7	71.3	71.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	164	353	761
CNEL:	82	176	380	818

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Gateway Boulevard to Enterprise

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,610 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,845 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.44	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.80	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.75	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.7	66.9	60.9	69.5	70.1
Medium Trucks:	63.3	62.6	56.3	54.7	63.2	63.4
Heavy Trucks:	63.7	63.1	54.1	55.4	63.7	63.8
Vehicle Noise:	71.4	70.5	67.5	62.7	71.2	71.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	102	219	472	1,017
CNEL:	109	235	507	1,092

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Jeffrey Road to Royal Oak

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,401 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,096 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.80	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.39	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.3	61.7	55.3	53.7	62.2	62.4
Heavy Trucks:	62.7	62.2	53.1	54.4	62.7	62.9
Vehicle Noise:	70.5	69.5	66.5	61.7	70.3	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	140	302	650
CNEL:	70	151	324	699

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Daimler Street to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,851 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,050 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.71	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.53	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.48	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.2	61.6	55.2	53.7	62.1	62.3
Heavy Trucks:	62.6	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	70.4	69.4	66.4	61.6	70.2	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	138	298	641
CNEL:	69	148	320	689



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,627 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,032 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.67	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.57	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.52	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.6	65.8	59.7	68.4	69.0
Medium Trucks:	62.2	61.5	55.2	53.6	62.1	62.3
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	70.3	69.4	66.4	61.6	70.1	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	137	296	637
CNEL:	68	147	318	685

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: West Yale Loop to Lake Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,512 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,022 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.65	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.59	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.54	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	69.0
Medium Trucks:	62.2	61.5	55.1	53.6	62.1	62.3
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	70.3	69.4	66.3	61.6	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	137	295	635
CNEL:	68	147	317	682

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Technology Drive West to Ada

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 49,987 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,124 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.74	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.49	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.45	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	69.4	67.6	61.6	70.2	70.8
Medium Trucks:	64.0	63.4	57.0	55.4	63.9	64.1
Heavy Trucks:	64.4	63.9	54.8	56.1	64.4	64.6
Vehicle Noise:	72.2	71.2	68.2	63.4	72.0	72.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	108	233	502	1,081
CNEL:	116	250	539	1,161

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Creek Road to East Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,159 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,993 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.59	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.61	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.5	65.7	59.7	68.3	68.9	
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2	
Heavy Trucks:	62.5	61.9	52.9	54.2	62.5	62.6	
Vehicle Noise:	70.2	69.3	66.3	61.5	70.0	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	292	629
CNEL:	68	146	314	676

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Red Hill Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,510 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,940 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.47	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.73	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.4	65.6	59.5	68.2	68.8
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	70.1	69.2	66.2	61.4	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	287	618
CNEL:	66	143	308	664

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Lake Road to Creek Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,987 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,896 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.82	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.3	65.5	59.4	68.1	68.7	
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0	
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4	
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	282	609
CNEL:	65	141	303	654

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Telemetry to Banting

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,191 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,913 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.41	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.83	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.78	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.3	65.5	59.5	68.1	68.7	
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.0	
Heavy Trucks:	62.3	61.8	52.7	54.0	62.3	62.5	
Vehicle Noise:	70.1	69.1	66.1	61.3	69.9	70.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	284	612
CNEL:	66	142	305	658

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Irvine Boulevard to Commercentre

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 38,024 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,137 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.56	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.68	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.64	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	62.4	61.8	55.4	53.8	62.3	62.5
Heavy Trucks:	62.8	62.3	53.2	54.5	62.8	63.0
Vehicle Noise:	70.6	69.6	66.6	61.8	70.4	70.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	191	412	888
CNEL:	95	205	443	954



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Jenner to Telemetry

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,846 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,885 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.89	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.85	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.2	65.5	59.4	68.0	68.6	
Medium Trucks:	61.9	61.2	54.8	53.3	61.7	62.0	
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4	
Vehicle Noise:	70.0	69.1	66.0	61.3	69.8	70.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	281	606
CNEL:	65	140	302	651

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Irvine Center Drive to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,281 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,241 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.70	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.54	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.50	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.0	67.9	66.2	60.1	68.7	69.3	
Medium Trucks:	62.6	61.9	55.5	54.0	62.4	62.7	
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1	
Vehicle Noise:	70.7	69.8	66.7	62.0	70.5	71.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	195	421	907
CNEL:	97	210	452	975

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Sand Canyon Avenue to Hospital

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 37,094 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,060 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.45	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.79	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.75	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.7	70.6	68.9	62.8	71.4	72.1
Medium Trucks:	65.3	64.6	58.2	56.7	65.2	65.4
Heavy Trucks:	65.7	65.1	56.1	57.3	65.7	65.8
Vehicle Noise:	73.4	72.5	69.4	64.7	73.2	73.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	211	456	981
CNEL:	105	227	489	1,054

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Laguna Canyon Road to Jenner

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,385 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,847 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.94	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	67.2	65.4	59.3	68.0	68.6	
Medium Trucks:	61.8	61.1	54.7	53.2	61.7	61.9	
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3	
Vehicle Noise:	69.9	69.0	65.9	61.2	69.7	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	277	598
CNEL:	64	138	298	642

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred Project Name: Irvine GP  
 Road Name: Alton Parkway Job Number: 15937  
 Road Segment: Technology Drive East to Barranca Pkwy/Muirlands Blvd

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 37,771 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,116 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
	VehicleType	Day	Evening	Night	Daily
	Autos: 77.5% 12.9% 9.6% 97.42%				
	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<b>Noise Source Elevations (in feet)</b>				
	Autos: 2.000				
	Medium Trucks: 4.000				
	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
	<b>Lane Equivalent Distance (in feet)</b>				
Autos: 74.458					
Medium Trucks: 74.404					
Heavy Trucks: 74.458					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.53	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.71	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.67	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.8	66.0	59.9	68.6	69.2
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5
Heavy Trucks:	62.8	62.2	53.2	54.4	62.8	62.9
Vehicle Noise:	70.5	69.6	66.6	61.8	70.3	70.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	190	410	884
CNEL:	95	205	441	950

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Royal Oak to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,298 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,757 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.04	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.20	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.15	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	66.9	65.2	59.1	67.7	68.3
Medium Trucks:	61.6	60.9	54.5	53.0	61.4	61.7
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	69.7	68.8	65.7	60.9	69.5	70.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	268	578
CNEL:	62	134	288	621

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Banting to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,046 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,736 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.25	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.21	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.9	66.9	65.1	59.1	67.7	68.3	
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6	
Heavy Trucks:	61.9	61.3	52.3	53.6	61.9	62.0	
Vehicle Noise:	69.6	68.7	65.7	60.9	69.4	69.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	124	266	574
CNEL:	62	133	286	616

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred Project Name: Irvine GP  
 Road Name: Alton Parkway Job Number: 15937  
 Road Segment: Barranca Pkwy/Muirlands Blvd to Jeronimo Road

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 33,513 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,765 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.01	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.23	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.19	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.3	65.5	59.4	68.1	68.7
Medium Trucks:	61.9	61.2	54.8	53.3	61.8	62.0
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.0	69.1	66.0	61.3	69.8	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	176	379	816
CNEL:	88	189	407	877



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Ada to Technology Drive East

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,970 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,803 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.07	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.17	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.13	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.1
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5
Vehicle Noise:	70.1	69.2	66.1	61.3	69.9	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	382	823
CNEL:	88	191	411	885

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,636 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,620 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.31	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.55	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.51	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.6	66.6	64.8	58.8	67.4	68.0	
Medium Trucks:	61.2	60.5	54.2	52.6	61.1	61.3	
Heavy Trucks:	61.6	61.0	52.0	53.3	61.6	61.7	
Vehicle Noise:	69.3	68.4	65.4	60.6	69.1	69.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	254	548
CNEL:	59	127	273	589

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Jeronimo Road to Hughes

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,395 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,590 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.72	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.51	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.47	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.0	67.0	65.2	59.1	67.8	68.4	
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7	
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1	
Vehicle Noise:	69.7	68.8	65.8	61.0	69.5	70.0	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	168	363	781
CNEL:	84	181	390	839

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Hughes to Morgan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,715 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,451 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.49	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.75	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.71	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	66.7	65.0	58.9	67.5	68.1	
Medium Trucks:	61.4	60.7	54.3	52.8	61.2	61.5	
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9	
Vehicle Noise:	69.5	68.6	65.5	60.7	69.3	69.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	350	753
CNEL:	81	174	376	809

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Morgan to Toledo Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,095 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,070 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.75	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.49	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.44	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.1	66.0	64.2	58.2	66.8	67.4	
Medium Trucks:	60.6	59.9	53.6	52.0	60.5	60.7	
Heavy Trucks:	61.0	60.5	51.4	52.7	61.0	61.1	
Vehicle Noise:	68.8	67.8	64.8	60.0	68.6	69.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	145	312	673
CNEL:	72	156	336	723

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: San Marino to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,417 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,097 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.81	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.43	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.39	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.1	66.1	64.3	58.2	66.9	67.5	
Medium Trucks:	60.7	60.0	53.6	52.1	60.6	60.8	
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2	
Vehicle Noise:	68.8	67.9	64.8	60.1	68.6	69.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	146	315	679
CNEL:	73	157	338	729

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Jamboree Road to Murphy Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,653 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,034 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.56	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.52	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	65.9	64.2	58.1	66.7	67.3
Medium Trucks:	60.5	59.9	53.5	52.0	60.4	60.7
Heavy Trucks:	61.0	60.4	51.3	52.6	60.9	61.1
Vehicle Noise:	68.7	67.8	64.7	59.9	68.5	68.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	143	309	665
CNEL:	71	154	332	714

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Hospital to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,790 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,045 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.70	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.54	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.50	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.0	68.9	67.1	61.1	69.7	70.3	
Medium Trucks:	63.5	62.9	56.5	54.9	63.4	63.6	
Heavy Trucks:	63.9	63.4	54.3	55.6	63.9	64.0	
Vehicle Noise:	71.7	70.7	67.7	62.9	71.5	71.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	348	750
CNEL:	81	174	374	806



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,843 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,967 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 47.329				
Road Grade: 0.0%	Medium Trucks: 47.244				
Left View: -90.0 degrees	Heavy Trucks: 47.329				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.53	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.71	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.66	0.25	-1.20	-5.34	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.8	68.7	67.0	60.9	69.5	70.1	
Medium Trucks:	63.4	62.7	56.3	54.8	63.2	63.5	
Heavy Trucks:	63.8	63.2	54.1	55.4	63.8	63.9	
Vehicle Noise:	71.5	70.6	67.5	62.7	71.3	71.8	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	339	731
CNEL:	79	169	364	785

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Murphy Avenue to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,566 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,944 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.48	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.76	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.72	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.8	65.7	64.0	57.9	66.5	67.1	
Medium Trucks:	60.3	59.7	53.3	51.8	60.2	60.5	
Heavy Trucks:	60.8	60.2	51.1	52.4	60.7	60.9	
Vehicle Noise:	68.5	67.6	64.5	59.7	68.3	68.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	139	300	645
CNEL:	69	149	322	693

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Foster to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,154 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,910 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.40	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.84	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.79	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.7	65.6	63.9	57.8	66.4	67.1	
Medium Trucks:	60.3	59.6	53.2	51.7	60.2	60.4	
Heavy Trucks:	60.7	60.1	51.1	52.3	60.7	60.8	
Vehicle Noise:	68.4	67.5	64.4	59.7	68.2	68.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	137	296	638
CNEL:	69	148	318	685

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Fairbanks to Foster

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,916 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,808 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.16	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.07	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.03	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.4	63.6	57.6	66.2	66.8
Medium Trucks:	60.0	59.4	53.0	51.5	59.9	60.1
Heavy Trucks:	60.5	59.9	50.8	52.1	60.4	60.6
Vehicle Noise:	68.2	67.2	64.2	59.4	68.0	68.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	285	615
CNEL:	66	142	307	661

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Toledo Way to Bertea

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,840 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,802 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.05	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.4	63.6	57.6	66.2	66.8
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1
Heavy Trucks:	60.4	59.8	50.8	52.1	60.4	60.5
Vehicle Noise:	68.1	67.2	64.2	59.4	68.0	68.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	285	613
CNEL:	66	142	306	659

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Pacifica to Meridian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,678 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,871 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.31	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.93	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.88	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.7	60.7	69.3	69.9
Medium Trucks:	63.1	62.5	56.1	54.6	63.0	63.3
Heavy Trucks:	63.6	63.0	53.9	55.2	63.5	63.7
Vehicle Noise:	71.3	70.3	67.3	62.5	71.1	71.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	152	328	707
CNEL:	76	164	353	759

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Bertea to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,315 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,758 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.04	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.20	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.15	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0
Heavy Trucks:	60.3	59.7	50.7	52.0	60.3	60.4
Vehicle Noise:	68.0	67.1	64.1	59.3	67.8	68.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	280	604
CNEL:	65	140	301	648

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Meridian to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,601 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,700 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.11	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.34	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.30	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.2	65.1	63.4	57.3	65.9	66.5	
Medium Trucks:	59.8	59.1	52.7	51.2	59.6	59.9	
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3	
Vehicle Noise:	67.9	67.0	63.9	59.1	67.7	68.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	274	590
CNEL:	63	137	294	634



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Paseo Westpark to San Marino

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,504 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,692 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.13	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.36	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.32	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.2	65.1	63.4	57.3	65.9	66.5	
Medium Trucks:	59.7	59.1	52.7	51.2	59.6	59.9	
Heavy Trucks:	60.2	59.6	50.5	51.8	60.1	60.3	
Vehicle Noise:	67.9	67.0	63.9	59.1	67.7	68.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	273	588
CNEL:	63	136	293	632

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Alton Parkway  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,861 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,474 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.72	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.96	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.92	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.6	64.5	62.8	56.7	65.3	65.9	
Medium Trucks:	59.1	58.5	52.1	50.6	59.0	59.3	
Heavy Trucks:	59.6	59.0	49.9	51.2	59.5	59.7	
Vehicle Noise:	67.3	66.4	63.3	58.5	67.1	67.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	249	536
CNEL:	58	124	268	576

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Astor  
 Road Segment: Lynx to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,393 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,600 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	1.85	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-15.39	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-19.34	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.2	63.2	61.4	55.4	64.0	64.6	
Medium Trucks:	58.7	58.1	51.7	50.2	58.6	58.9	
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3	
Vehicle Noise:	66.7	65.9	62.2	58.1	66.6	67.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	48	103	222
CNEL:	24	51	110	236

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Astor  
 Road Segment: Cadence to Lynx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,767 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,218 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 37.138				
Road Grade: 0.0%		Medium Trucks: 37.030				
Left View: -90.0 degrees		Heavy Trucks: 37.139				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	0.67	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-16.57	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-20.53	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.1	62.0	60.2	54.2	62.8	63.4
Medium Trucks:	57.6	56.9	50.5	49.0	57.4	57.7
Heavy Trucks:	60.0	59.4	50.4	51.7	60.0	60.1
Vehicle Noise:	65.6	64.7	61.1	56.9	65.4	65.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	40	86	185
CNEL:	20	42	91	197

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bake Parkway  
 Road Segment: I-5 NB Off-Ramp to Rockfield Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 95,631 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 7,890 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	6.56	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-10.68	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-14.63	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	74.7	73.6	71.8	65.8	74.4	75.0	
Medium Trucks:	68.2	67.5	61.2	59.6	68.1	68.3	
Heavy Trucks:	68.6	68.0	59.0	60.3	68.6	68.7	
Vehicle Noise:	76.4	75.4	72.4	67.6	76.2	76.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	257	554	1,194	2,572
CNEL:	276	595	1,282	2,763

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bake Parkway  
 Road Segment: Muirlands Boulevard to Jeronimo Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 61,319 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,059 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.63	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-12.61	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-16.56	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.9	69.9	68.1	62.1	70.7	71.3
Medium Trucks:	64.5	63.8	57.5	55.9	64.4	64.6
Heavy Trucks:	64.9	64.3	55.3	56.5	64.9	65.0
Vehicle Noise:	72.6	71.7	68.7	63.9	72.4	72.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	122	263	567	1,221
CNEL:	131	283	609	1,312

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bake Parkway  
 Road Segment: Rockfield Boulevard to Muirlands Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 66,285 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,468 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 56.593				
Road Grade: 0.0%	Medium Trucks: 56.522				
Left View: -90.0 degrees	Heavy Trucks: 56.593				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.97	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-12.27	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-16.22	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.1	72.0	70.2	64.2	72.8	73.4	
Medium Trucks:	66.6	66.0	59.6	58.1	66.5	66.7	
Heavy Trucks:	67.0	66.5	57.4	58.7	67.0	67.2	
Vehicle Noise:	74.8	73.8	70.8	66.0	74.6	75.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	201	434	935	2,014
CNEL:	216	466	1,004	2,164

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bake Parkway  
 Road Segment: Jeronimo Road to Toledo Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 49,538 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,087 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.49	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.0	68.9	67.2	61.1	69.7	70.4	
Medium Trucks:	63.6	62.9	56.5	55.0	63.5	63.7	
Heavy Trucks:	64.0	63.4	54.4	55.6	64.0	64.1	
Vehicle Noise:	71.7	70.8	67.7	63.0	71.5	72.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	228	491	1,059
CNEL:	114	245	528	1,138



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bake Parkway  
 Road Segment: Toledo Way to Cromwell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,757 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,775 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.36	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.88	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.83	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.8	60.8	69.4	70.0
Medium Trucks:	63.2	62.6	56.2	54.7	63.1	63.3
Heavy Trucks:	63.6	63.1	54.0	55.3	63.6	63.8
Vehicle Noise:	71.4	70.4	67.4	62.6	71.2	71.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	466	1,004
CNEL:	108	232	501	1,079

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Bake Parkway  
 Road Segment: Cromwell to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,473 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,752 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.33	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.90	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.86	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.6	66.8	60.8	69.4	70.0
Medium Trucks:	63.2	62.5	56.2	54.6	63.1	63.3
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7
Vehicle Noise:	71.3	70.4	67.4	62.6	71.1	71.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	215	464	1,000
CNEL:	107	232	499	1,075

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bake Parkway  
 Road Segment: Research Drive to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,172 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,324 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.25	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.98	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.94	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.5	64.7	58.7	67.3	67.9
Medium Trucks:	61.1	60.5	54.1	52.5	61.0	61.2
Heavy Trucks:	61.5	61.0	51.9	53.2	61.5	61.6
Vehicle Noise:	69.3	68.3	65.3	60.5	69.1	69.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	337	727
CNEL:	78	168	362	781

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bake Parkway  
 Road Segment: Irvine Center Drive to Research Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,545 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 787 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.45	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-20.68	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-24.64	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.9	61.8	60.0	54.0	62.6	63.2	
Medium Trucks:	56.4	55.8	49.4	47.8	56.3	56.5	
Heavy Trucks:	56.8	56.3	47.2	48.5	56.8	56.9	
Vehicle Noise:	64.6	63.6	60.6	55.8	64.4	64.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	164	353
CNEL:	38	82	176	380

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Bake Parkway  
 Road Segment: Lake Forest Drive to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,811 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	562 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	84.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 74.458				
Road Grade:	0.0%	Medium Trucks: 74.404				
Left View:	-90.0 degrees	Heavy Trucks: 74.458				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.91	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-22.15	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-26.11	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.4	60.3	58.6	52.5	61.1	61.7
Medium Trucks:	55.0	54.3	47.9	46.4	54.8	55.1
Heavy Trucks:	55.4	54.8	45.8	47.0	55.4	55.5
Vehicle Noise:	63.1	62.2	59.1	54.3	62.9	63.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	131	282
CNEL:	30	65	141	303

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Banting  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,427 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 448 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-4.35	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-21.59	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-25.54	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	57.7	56.6	54.9	48.8	57.4	58.1	
Medium Trucks:	51.9	51.3	44.9	43.3	51.8	52.0	
Heavy Trucks:	53.8	53.2	44.2	45.4	53.8	53.9	
Vehicle Noise:	59.9	59.1	55.6	51.2	59.8	60.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	13	28	60	130
CNEL:	14	30	64	138

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Pacifica to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,247 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,825 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.69	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-15.55	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.51	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.2	70.2	68.4	62.3	71.0	71.6
Medium Trucks:	64.6	63.9	57.6	56.0	64.5	64.7
Heavy Trucks:	64.6	64.1	55.0	56.3	64.6	64.8
Vehicle Noise:	72.8	71.9	68.9	64.0	72.6	73.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	201	432	932
CNEL:	100	216	465	1,002

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Banting to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,312 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,583 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.30	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-15.94	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.89	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.8	68.0	61.9	70.6	71.2
Medium Trucks:	64.2	63.6	57.2	55.6	64.1	64.3
Heavy Trucks:	64.3	63.7	54.6	55.9	64.2	64.4
Vehicle Noise:	72.4	71.5	68.5	63.7	72.2	72.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	189	407	877
CNEL:	94	203	438	944



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: I-5 HOV Ramp to Technology Drive West

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,030 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,560 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-15.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.93	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.7	68.0	61.9	70.5	71.1
Medium Trucks:	64.2	63.5	57.2	55.6	64.1	64.3
Heavy Trucks:	64.2	63.6	54.6	55.8	64.2	64.3
Vehicle Noise:	72.4	71.4	68.5	63.6	72.2	72.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	188	405	872
CNEL:	94	202	436	938

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Technology Drive West to Ada

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,409 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,509 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.02	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.6	67.9	61.8	70.4	71.1
Medium Trucks:	64.1	63.4	57.1	55.5	64.0	64.2
Heavy Trucks:	64.1	63.5	54.5	55.8	64.1	64.2
Vehicle Noise:	72.3	71.4	68.4	63.5	72.1	72.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	399	861
CNEL:	93	199	430	926

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Irvine Center Drive to I-5 HOV Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,916 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,386 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.95	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.28	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.24	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	69.4	67.7	61.6	70.2	70.8
Medium Trucks:	63.9	63.2	56.8	55.3	63.8	64.0
Heavy Trucks:	63.9	63.3	54.3	55.5	63.9	64.0
Vehicle Noise:	72.1	71.1	68.2	63.3	71.9	72.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	179	386	832
CNEL:	90	193	416	895

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,904 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,302 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.80	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.44	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.40	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.3	67.5	61.4	70.1	70.7
Medium Trucks:	63.7	63.1	56.7	55.1	63.6	63.8
Heavy Trucks:	63.8	63.2	54.1	55.4	63.7	63.9
Vehicle Noise:	71.9	71.0	68.0	63.2	71.7	72.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	175	377	813
CNEL:	87	188	406	874

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: East Yale Loop to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,289 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,251 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.70	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.54	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.49	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.2	69.2	67.4	61.4	70.0	70.6	
Medium Trucks:	63.6	63.0	56.6	55.1	63.5	63.7	
Heavy Trucks:	63.7	63.1	54.0	55.3	63.6	63.8	
Vehicle Noise:	71.8	70.9	67.9	63.1	71.6	72.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	172	372	801
CNEL:	86	186	400	861

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: West Yale Loop to Lake Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,674 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,201 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.64	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.59	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.1	67.3	61.3	69.9	70.5
Medium Trucks:	63.5	62.9	56.5	55.0	63.4	63.6
Heavy Trucks:	63.6	63.0	53.9	55.2	63.5	63.7
Vehicle Noise:	71.7	70.8	67.8	63.0	71.5	72.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	170	366	789
CNEL:	85	183	394	848

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Ada to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,859 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,216 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.63	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.61	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.56	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	69.1	67.3	61.3	69.9	70.5
Medium Trucks:	63.6	62.9	56.5	55.0	63.4	63.7
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7
Vehicle Noise:	71.7	70.8	67.9	63.0	71.5	72.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	171	368	792
CNEL:	85	184	396	852

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Lake Road to Creek Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,910 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,055 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.31	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.93	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.89	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.8	67.0	61.0	69.6	70.2
Medium Trucks:	63.2	62.6	56.2	54.7	63.1	63.3
Heavy Trucks:	63.3	62.7	53.6	54.9	63.2	63.4
Vehicle Noise:	71.4	70.5	67.5	62.7	71.2	71.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	350	753
CNEL:	81	175	376	811



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Red Hill Avenue to Armstrong Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,771 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,941 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.13	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-14.10	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-18.06	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.8	71.7	70.0	63.9	72.5	73.1
Medium Trucks:	66.2	65.5	59.2	57.6	66.1	66.3
Heavy Trucks:	66.2	65.6	56.6	57.9	66.2	66.3
Vehicle Noise:	74.4	73.5	70.5	65.6	74.2	74.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	190	409	882	1,900
CNEL:	204	440	949	2,044

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Discovery/Herchel to Banting

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,148 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,992 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.02	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.9	60.8	69.4	70.0
Medium Trucks:	63.1	62.4	56.1	54.5	63.0	63.2
Heavy Trucks:	63.1	62.5	53.5	54.8	63.1	63.2
Vehicle Noise:	71.3	70.4	67.4	62.5	71.1	71.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	343	738
CNEL:	79	171	368	794

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Lyon to East Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,579 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,945 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.07	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.17	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.13	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.8	60.7	69.3	69.9
Medium Trucks:	63.0	62.3	56.0	54.4	62.9	63.1
Heavy Trucks:	63.0	62.4	53.4	54.7	63.0	63.1
Vehicle Noise:	71.2	70.3	67.3	62.4	71.0	71.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	156	337	726
CNEL:	78	168	363	781

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Creek Road to Lyon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,163 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,911 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.25	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.20	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.5	68.5	66.7	60.6	69.3	69.9
Medium Trucks:	62.9	62.2	55.9	54.3	62.8	63.0
Heavy Trucks:	62.9	62.4	53.3	54.6	62.9	63.1
Vehicle Noise:	71.1	70.2	67.2	62.3	70.9	71.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	72	155	333	718
CNEL:	77	166	358	772

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 41,461 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,421 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.52	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.72	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.68	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.7	68.0	61.9	70.6	71.2
Medium Trucks:	64.2	63.5	57.2	55.6	64.1	64.3
Heavy Trucks:	64.2	63.6	54.6	55.9	64.2	64.3
Vehicle Noise:	72.4	71.5	68.5	63.6	72.2	72.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	112	241	520	1,119
CNEL:	120	259	559	1,204

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Sand Canyon Avenue to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,188 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,665 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.61	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.85	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.80	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.9	67.9	66.1	60.0	68.7	69.3	
Medium Trucks:	62.3	61.6	55.3	53.7	62.2	62.4	
Heavy Trucks:	62.3	61.8	52.7	54.0	62.3	62.5	
Vehicle Noise:	70.5	69.6	66.6	61.8	70.3	70.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	141	304	655
CNEL:	70	152	327	705

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Armstrong Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 38,551 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,180 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.20	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.04	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.99	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	69.4	67.7	61.6	70.2	70.8
Medium Trucks:	63.9	63.2	56.9	55.3	63.8	64.0
Heavy Trucks:	63.9	63.3	54.3	55.5	63.9	64.0
Vehicle Noise:	72.1	71.1	68.2	63.3	71.9	72.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	107	230	495	1,066
CNEL:	115	247	532	1,147

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,557 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,613 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.75	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.94	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	66.0	59.9	68.5	69.1
Medium Trucks:	62.2	61.5	55.1	53.6	62.1	62.3
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	70.4	69.4	66.5	61.6	70.2	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	138	298	641
CNEL:	69	149	320	690



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Jamboree Road to Construction Circle

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,326 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,584 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.30	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.94	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.89	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.1	66.4	60.3	68.9	69.5
Medium Trucks:	62.6	61.9	55.5	54.0	62.5	62.7
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	70.8	69.8	66.9	62.0	70.6	71.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	197	425	915
CNEL:	98	212	457	985

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Santa Rosa to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,197 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,491 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.14	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.10	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.05	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	68.0	66.2	60.1	68.8	69.4
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5
Heavy Trucks:	62.4	61.9	52.8	54.1	62.4	62.6
Vehicle Noise:	70.6	69.7	66.7	61.8	70.4	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	192	415	893
CNEL:	96	207	446	961

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: FedEx to Discovery/Herchel

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,670 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,458 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.42	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.38	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	61.7	61.1	54.7	53.2	61.6	61.9
Heavy Trucks:	61.8	61.2	52.1	53.4	61.8	61.9
Vehicle Noise:	69.9	69.0	66.0	61.2	69.7	70.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	278	599
CNEL:	64	139	299	645

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Jeffrey Road to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,571 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,450 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.40	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.3	65.5	59.4	68.1	68.7	
Medium Trucks:	61.7	61.0	54.7	53.1	61.6	61.8	
Heavy Trucks:	61.7	61.2	52.1	53.4	61.7	61.9	
Vehicle Noise:	69.9	69.0	66.0	61.1	69.7	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	277	597
CNEL:	64	138	298	642

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Laguna Canyon Road to FedEx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,200 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,419 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.30	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.54	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.50	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.2	65.4	59.3	68.0	68.6
Medium Trucks:	61.6	61.0	54.6	53.0	61.5	61.7
Heavy Trucks:	61.7	61.1	52.0	53.3	61.6	61.8
Vehicle Noise:	69.8	68.9	65.9	61.1	69.6	70.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	273	589
CNEL:	63	136	294	633

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Pullman Street to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 37,452 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,090 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.08	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-15.16	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-19.12	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.7	70.7	68.9	62.9	71.5	72.1
Medium Trucks:	65.1	64.5	58.1	56.6	65.0	65.3
Heavy Trucks:	65.2	64.6	55.5	56.8	65.2	65.3
Vehicle Noise:	73.3	72.4	69.4	64.6	73.1	73.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	162	348	750	1,615
CNEL:	174	374	807	1,738

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Construction Circle to Fire Station

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,431 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,263 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.72	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.51	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.47	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.6	67.5	65.8	59.7	68.3	69.0	
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1	
Heavy Trucks:	62.0	61.4	52.4	53.7	62.0	62.1	
Vehicle Noise:	70.2	69.3	66.3	61.4	70.0	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	389	838
CNEL:	90	194	418	901

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Fire Station to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,431 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,263 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.72	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.51	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.47	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	69.0
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.0	61.4	52.4	53.7	62.0	62.1
Vehicle Noise:	70.2	69.3	66.3	61.4	70.0	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	389	838
CNEL:	90	194	418	901



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Paseo Westpark to Santa Rosa

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,241 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,247 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.69	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.54	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.50	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.7	59.7	68.3	68.9
Medium Trucks:	62.0	61.3	54.9	53.4	61.8	62.1
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	70.2	69.2	66.3	61.4	70.0	70.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	180	387	834
CNEL:	90	193	416	897

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,071 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,068 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.33	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.90	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.86	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	67.2	65.4	59.3	68.0	68.6	
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7	
Heavy Trucks:	61.6	61.1	52.0	53.3	61.6	61.7	
Vehicle Noise:	69.8	68.9	65.9	61.0	69.6	70.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	170	366	789
CNEL:	85	183	394	849

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Bay Tree  
 Road Segment: Trabuco Road to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,742 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	226 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-7.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-24.55	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-28.51	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.7	53.7	51.9	45.9	54.5	55.1
Medium Trucks:	49.0	48.3	41.9	40.4	48.8	49.1
Heavy Trucks:	50.8	50.2	41.2	42.4	50.8	50.9
Vehicle Noise:	57.0	56.1	52.6	48.3	56.8	57.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	18	38	82
CNEL:	9	19	41	88

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Beacon  
 Road Segment: Ridge Valley to Benchmark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,509 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	290 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-5.57	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-22.81	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-26.77	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.8	55.7	54.0	47.9	56.5	57.2
Medium Trucks:	51.3	50.6	44.3	42.7	51.2	51.4
Heavy Trucks:	53.8	53.2	44.2	45.4	53.8	53.9
Vehicle Noise:	59.3	58.5	54.8	50.6	59.1	59.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	15	33	71
CNEL:	8	16	35	76

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Benchmark (LN Street)  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,745 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 144 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-8.61	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-25.85	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-29.80	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.8	52.7	50.9	44.9	53.5	54.1
Medium Trucks:	48.3	47.6	41.3	39.7	48.2	48.4
Heavy Trucks:	50.8	50.2	41.1	42.4	50.7	50.9
Vehicle Noise:	56.3	55.4	51.8	47.6	56.1	56.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	10	21	44
CNEL:	5	10	22	47

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bison Avenue  
 Road Segment: SR-73 NB Off-Ramp to California Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,773 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,126 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.33	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.91	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.87	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.5	64.7	58.7	67.3	67.9
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4
Heavy Trucks:	62.1	61.6	52.5	53.8	62.1	62.2
Vehicle Noise:	69.4	68.5	65.3	60.6	69.2	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	119	256	551
CNEL:	59	127	274	591

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Bonita Canyon Drive  
 Road Segment: MacArthur Boulevard to SR-73

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,737 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,536 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.63	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.61	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-19.56	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.2	65.5	59.4	68.0	68.6
Medium Trucks:	61.9	61.2	54.8	53.3	61.7	62.0
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.0	69.1	66.0	61.3	69.8	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	338	727
CNEL:	78	168	363	781

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Bonita Canyon Drive  
 Road Segment: Turtle Ridge to Shady Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,728 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,710 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.08	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.32	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-21.27	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.5	63.8	57.7	66.3	66.9
Medium Trucks:	60.2	59.5	53.1	51.6	60.0	60.3
Heavy Trucks:	60.6	60.0	50.9	52.2	60.6	60.7
Vehicle Noise:	68.3	67.4	64.3	59.5	68.1	68.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	120	260	559
CNEL:	60	129	279	601



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Bonita Canyon Drive  
 Road Segment: Newport Coast Drive to Turtle Ridge

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,103 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,576 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.43	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.67	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-21.63	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	65.2	63.4	57.4	66.0	66.6
Medium Trucks:	59.8	59.1	52.8	51.2	59.7	59.9
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3
Vehicle Noise:	67.9	67.0	64.0	59.2	67.7	68.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	246	530
CNEL:	57	123	264	569

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Bonita Canyon Drive  
 Road Segment: SR-73 NB Off-Ramp to Newport Coast Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,113 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,494 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.66	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.90	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-21.86	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.2	57.1	65.7	66.3
Medium Trucks:	59.6	58.9	52.5	51.0	59.5	59.7
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1
Vehicle Noise:	67.7	66.8	63.7	59.0	67.5	68.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	110	237	511
CNEL:	55	118	255	549

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bosque  
 Road Segment: Cadence to Great Park Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,836 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,059 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	0.06	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-17.18	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-21.14	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.4	61.4	59.6	53.6	62.2	62.8
Medium Trucks:	57.0	56.3	49.9	48.4	56.8	57.1
Heavy Trucks:	59.4	58.8	49.8	51.0	59.4	59.5
Vehicle Noise:	65.0	64.1	60.4	56.3	64.8	65.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	36	78	168
CNEL:	18	39	83	179

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Bosque  
 Road Segment: Irvine Boulevard to Benchmark (LN Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,601 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	710 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-1.68	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-18.92	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-22.87	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.7	59.6	57.9	51.8	60.4	61.0
Medium Trucks:	55.2	54.5	48.2	46.6	55.1	55.3
Heavy Trucks:	57.7	57.1	48.1	49.3	57.7	57.8
Vehicle Noise:	63.2	62.3	58.7	54.5	63.0	63.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	13	28	60	129
CNEL:	14	30	64	137

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bosque  
 Road Segment: Benchmark to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,908 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 652 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-2.04	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-19.28	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-23.24	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.3	59.3	57.5	51.5	60.1	60.7	
Medium Trucks:	54.8	54.2	47.8	46.3	54.7	55.0	
Heavy Trucks:	57.3	56.7	47.7	48.9	57.3	57.4	
Vehicle Noise:	62.8	62.0	58.3	54.2	62.7	63.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	26	57	122
CNEL:	13	28	60	130

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Bosque  
 Road Segment: Great Park Boulevard to Beacon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1,828 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	151 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-8.41	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-25.64	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-29.60	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.0	52.9	51.2	45.1	53.7	54.3
Medium Trucks:	48.5	47.8	41.5	39.9	48.4	48.6
Heavy Trucks:	51.0	50.4	41.3	42.6	50.9	51.1
Vehicle Noise:	56.5	55.6	52.0	47.8	56.3	56.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	10	21	46
CNEL:	5	11	23	49

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bosque  
 Road Segment: Beacon to S 5th Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,591 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 131 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-9.01	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-26.25	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-30.20	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	53.4	52.3	50.5	44.5	53.1	53.7	
Medium Trucks:	47.9	47.2	40.9	39.3	47.8	48.0	
Heavy Trucks:	50.4	49.8	40.7	42.0	50.3	50.5	
Vehicle Noise:	55.9	55.0	51.4	47.2	55.7	56.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	19	42
CNEL:	4	10	21	45

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bryan Avenue  
 Road Segment: Jamboree Road to Market Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,962 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,812 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.63	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.61	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.56	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.8	65.8	64.0	58.0	66.6	67.2	
Medium Trucks:	60.6	59.9	53.6	52.0	60.5	60.7	
Heavy Trucks:	61.4	60.9	51.8	53.1	61.4	61.6	
Vehicle Noise:	68.7	67.8	64.6	59.9	68.5	68.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	107	230	495
CNEL:	53	115	247	532



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bryan Avenue  
 Road Segment: Market Place to El Camino Real

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,600 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,782 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.68	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.64	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.8	65.7	63.9	57.9	66.5	67.1	
Medium Trucks:	60.5	59.9	53.5	52.0	60.4	60.6	
Heavy Trucks:	61.4	60.8	51.7	53.0	61.4	61.5	
Vehicle Noise:	68.6	67.7	64.6	59.9	68.4	68.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	106	227	490
CNEL:	53	113	244	526

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Bryan Avenue  
 Road Segment: Rubicon to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,545 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,777 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.55	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.69	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.65	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	61.4	60.8	51.7	53.0	61.3	61.5
Vehicle Noise:	68.6	67.7	64.5	59.9	68.4	68.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	105	227	489
CNEL:	52	113	244	525

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bryan Avenue  
 Road Segment: El Camino Real to Rubicon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,404 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,766 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.52	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.68	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.8	66.5	67.1
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	61.3	60.7	51.7	53.0	61.3	61.4
Vehicle Noise:	68.6	67.7	64.5	59.8	68.4	68.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	105	226	487
CNEL:	52	113	243	522

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bryan Avenue  
 Road Segment: Eastwood to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,773 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,136 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.40	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.63	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.59	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.8	63.8	62.0	55.9	64.6	65.2	
Medium Trucks:	58.6	57.9	51.5	50.0	58.5	58.7	
Heavy Trucks:	59.4	58.8	49.8	51.0	59.4	59.5	
Vehicle Noise:	66.7	65.7	62.6	57.9	66.5	66.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	169	363
CNEL:	39	84	181	389

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bryan Avenue  
 Road Segment: Westwood to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,845 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,060 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.70	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.94	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.89	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.5	63.5	61.7	55.6	64.3	64.9	
Medium Trucks:	58.3	57.6	51.2	49.7	58.2	58.4	
Heavy Trucks:	59.1	58.5	49.5	50.7	59.1	59.2	
Vehicle Noise:	66.4	65.4	62.3	57.6	66.2	66.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	75	161	347
CNEL:	37	80	173	372

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Bryan Avenue  
 Road Segment: Culver Drive to Westwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,666 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,045 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.76	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.00	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.95	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.5	63.4	61.6	55.6	64.2	64.8
Medium Trucks:	58.2	57.5	51.2	49.6	58.1	58.3
Heavy Trucks:	59.1	58.5	49.4	50.7	59.0	59.2
Vehicle Noise:	66.3	65.4	62.2	57.6	66.1	66.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	343
CNEL:	37	79	171	368

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Bryan Avenue  
 Road Segment: Yale Avenue to Eastwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,224 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,008 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.91	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.15	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.11	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.2	61.5	55.4	64.0	64.6
Medium Trucks:	58.1	57.4	51.0	49.5	57.9	58.2
Heavy Trucks:	58.9	58.3	49.3	50.5	58.9	59.0
Vehicle Noise:	66.1	65.2	62.1	57.4	65.9	66.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	72	156	335
CNEL:	36	77	167	360

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Cadence  
 Road Segment: Pusan to Chinon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,990 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 577 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.83	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-21.07	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-25.02	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.3	62.3	60.5	54.4	63.1	63.7
Medium Trucks:	57.3	56.6	50.3	48.7	57.2	57.4
Heavy Trucks:	58.6	58.0	49.0	50.2	58.6	58.7
Vehicle Noise:	65.3	64.4	61.2	56.6	65.1	65.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	38	83	178
CNEL:	19	41	88	190



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Cadence  
 Road Segment: Bosque to Pusan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,549 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	540 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.11	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-21.35	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-25.31	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.0	62.0	60.2	54.1	62.8	63.4
Medium Trucks:	57.0	56.3	50.0	48.4	56.9	57.1
Heavy Trucks:	58.3	57.7	48.7	49.9	58.3	58.4
Vehicle Noise:	65.0	64.1	60.9	56.3	64.9	65.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	79	170
CNEL:	18	39	85	182

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Cadence  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,745 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	391 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.51	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-22.75	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-26.71	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.6	60.6	58.8	52.7	61.4	62.0
Medium Trucks:	55.6	54.9	48.6	47.0	55.5	55.7
Heavy Trucks:	56.9	56.3	47.3	48.5	56.9	57.0
Vehicle Noise:	63.6	62.7	59.5	54.9	63.5	63.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	30	64	137
CNEL:	15	32	68	147

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Cadence  
 Road Segment: Chinon to Merit

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,194 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 264 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-7.23	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-24.47	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-28.43	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.9	58.9	57.1	51.0	59.7	60.3
Medium Trucks:	53.9	53.2	46.9	45.3	53.8	54.0
Heavy Trucks:	55.2	54.6	45.6	46.8	55.2	55.3
Vehicle Noise:	61.9	61.0	57.8	53.2	61.7	62.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	23	49	105
CNEL:	11	24	52	113

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Cadence  
 Road Segment: Merit to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1,700 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	140 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-9.97	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-27.21	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-31.16	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.2	56.1	54.3	48.3	56.9	57.5
Medium Trucks:	51.2	50.5	44.1	42.6	51.0	51.3
Heavy Trucks:	52.5	51.9	42.8	44.1	52.4	52.6
Vehicle Noise:	59.2	58.3	55.0	50.5	59.0	59.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	15	32	69
CNEL:	7	16	34	74

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: California Avenue  
 Road Segment: University Drive to Academy Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,819 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,305 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.48	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.0	62.9	61.2	55.1	63.7	64.3	
Medium Trucks:	58.0	57.3	50.9	49.4	57.8	58.1	
Heavy Trucks:	59.3	58.7	49.6	50.9	59.3	59.4	
Vehicle Noise:	66.0	65.1	61.8	57.3	65.8	66.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	152	328
CNEL:	35	76	163	351

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: California Avenue  
 Road Segment: Campus Drive to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,927 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 819 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.31	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.55	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.50	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.0	60.9	59.1	53.1	61.7	62.3	
Medium Trucks:	55.9	55.3	48.9	47.4	55.8	56.0	
Heavy Trucks:	57.2	56.7	47.6	48.9	57.2	57.4	
Vehicle Noise:	64.0	63.1	59.8	55.2	63.8	64.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	112	241
CNEL:	26	55	120	258

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: California Avenue  
 Road Segment: Theory to Bison Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,277 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	765 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.84	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.79	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.7	60.6	58.8	52.8	61.4	62.0
Medium Trucks:	55.6	55.0	48.6	47.1	55.5	55.8
Heavy Trucks:	57.0	56.4	47.3	48.6	56.9	57.1
Vehicle Noise:	63.7	62.8	59.5	55.0	63.5	63.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	107	230
CNEL:	25	53	114	246

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Campus Drive  
 Road Segment: Carlson Avenue to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,558 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,356 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 42.814				
Road Grade: 0.0%		Medium Trucks: 42.720				
Left View: -90.0 degrees		Heavy Trucks: 42.814				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.31	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-15.93	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-19.88	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.2	70.2	68.4	62.3	71.0	71.6
Medium Trucks:	64.8	64.1	57.8	56.2	64.7	64.9
Heavy Trucks:	65.2	64.6	55.6	56.8	65.2	65.3
Vehicle Noise:	72.9	72.0	69.0	64.2	72.7	73.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	164	353	759
CNEL:	82	176	379	816



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Campus Drive  
 Road Segment: University Drive to Bridge Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,269 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,662 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.84	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.35	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.8	68.7	67.0	60.9	69.5	70.1	
Medium Trucks:	63.4	62.7	56.3	54.8	63.2	63.5	
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9	
Vehicle Noise:	71.5	70.6	67.5	62.8	71.3	71.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	164	354	763
CNEL:	82	177	380	820

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Campus Drive  
 Road Segment: Jamboree Road to Carlson Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,078 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,481 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.70	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.66	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.5	68.4	66.7	60.6	69.2	69.8
Medium Trucks:	63.1	62.4	56.0	54.5	62.9	63.2
Heavy Trucks:	63.5	62.9	53.9	55.1	63.5	63.6
Vehicle Noise:	71.2	70.3	67.2	62.4	71.0	71.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	338	728
CNEL:	78	169	363	782

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Campus Drive  
 Road Segment: Stanford Court to Berkeley Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,506 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,269 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.09	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.04	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.1	68.0	66.3	60.2	68.8	69.5	
Medium Trucks:	62.7	62.0	55.6	54.1	62.6	62.8	
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2	
Vehicle Noise:	70.8	69.9	66.8	62.1	70.6	71.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	148	318	686
CNEL:	74	159	342	737

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Campus Drive  
 Road Segment: California Avenue to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,527 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,188 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.99	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.25	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.20	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.0	67.9	66.1	60.1	68.7	69.3	
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6	
Heavy Trucks:	62.9	62.3	53.3	54.6	62.9	63.0	
Vehicle Noise:	70.6	69.7	66.7	61.9	70.4	70.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	311	669
CNEL:	72	155	334	719

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Campus Drive  
 Road Segment: Berkeley Avenue to Cornell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,299 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,757 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.04	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.20	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.15	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.0	66.9	65.2	59.1	67.7	68.3	
Medium Trucks:	61.6	60.9	54.5	53.0	61.4	61.7	
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1	
Vehicle Noise:	69.7	68.8	65.7	60.9	69.5	70.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	268	578
CNEL:	62	134	288	621

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Campus Drive  
 Road Segment: Martin to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,910 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,395 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.96	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.20	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.16	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	65.9	64.2	58.1	66.7	67.3
Medium Trucks:	60.6	59.9	53.5	52.0	60.4	60.7
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1
Vehicle Noise:	68.7	67.8	64.7	59.9	68.5	69.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	107	230	496
CNEL:	53	115	247	533

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred Project Name: Irvine GP  
 Road Name: Campus Drive Job Number: 15937  
 Road Segment: Culver Drive to Paseo Montoya (Turtle Rock Drive)

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,918 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,313 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float:right">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.46	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.42	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.8	66.5	67.1
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4
Heavy Trucks:	60.7	60.1	51.1	52.3	60.7	60.8
Vehicle Noise:	68.4	67.5	64.5	59.7	68.2	68.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	221	476
CNEL:	51	110	238	512

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Campus Drive  
 Road Segment: Von Karman Avenue to Teller Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,558 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,201 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.61	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.85	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.81	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0
Heavy Trucks:	60.3	59.7	50.7	52.0	60.3	60.4
Vehicle Noise:	68.0	67.1	64.1	59.3	67.8	68.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	97	208	449
CNEL:	48	104	224	482



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Campus Drive  
 Road Segment: MacArthur Boulevard to Martin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,164 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,169 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.73	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.97	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.93	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.2	65.2	63.4	57.3	66.0	66.6	
Medium Trucks:	59.8	59.1	52.8	51.2	59.7	59.9	
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3	
Vehicle Noise:	67.9	67.0	64.0	59.2	67.7	68.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	95	205	441
CNEL:	47	102	220	473

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Campus Drive  
 Road Segment: Teller Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,947 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 986 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.47	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.71	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.67	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.5	64.4	62.7	56.6	65.2	65.8	
Medium Trucks:	59.1	58.4	52.0	50.5	58.9	59.2	
Heavy Trucks:	59.5	58.9	49.8	51.1	59.4	59.6	
Vehicle Noise:	67.2	66.3	63.2	58.4	67.0	67.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	85	183	393
CNEL:	42	91	196	423

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Carlson Avenue  
 Road Segment: Michelson Drive to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,196 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,089 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.04	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.28	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.23	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.9	63.1	57.0	65.7	66.3
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0
Vehicle Noise:	67.6	66.7	63.7	58.9	67.4	67.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	91	195	420
CNEL:	45	97	210	452

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Chinon  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,756 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	392 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-3.46	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-20.70	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-24.66	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.9	54.8	53.1	47.0	55.6	56.3
Medium Trucks:	50.7	50.1	43.7	42.2	50.6	50.9
Heavy Trucks:	54.0	53.4	44.3	45.6	53.9	54.1
Vehicle Noise:	58.8	58.0	54.0	50.1	58.6	59.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	14	30	65
CNEL:	7	15	32	70

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Creek Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,726 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	390 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-3.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-20.73	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-24.68	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.0	51.9	50.2	44.1	52.7	53.3
Medium Trucks:	47.8	47.2	40.8	39.3	47.7	47.9
Heavy Trucks:	51.0	50.5	41.4	42.7	51.0	51.2
Vehicle Noise:	55.9	55.0	51.1	47.2	55.7	56.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	15	32	70
CNEL:	7	16	34	74

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 61,011 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,033 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.20	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.04	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.00	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.1	71.0	69.2	63.2	71.8	72.4
Medium Trucks:	65.5	64.8	58.4	56.9	65.4	65.6
Heavy Trucks:	65.5	64.9	55.9	57.1	65.5	65.6
Vehicle Noise:	73.7	72.7	69.8	64.9	73.5	73.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	308	663	1,428
CNEL:	154	331	713	1,536

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 59,757 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,930 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.11	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.13	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.09	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.0	70.9	69.2	63.1	71.7	72.3	
Medium Trucks:	65.4	64.7	58.3	56.8	65.3	65.5	
Heavy Trucks:	65.4	64.8	55.8	57.0	65.4	65.5	
Vehicle Noise:	73.6	72.6	69.7	64.8	73.4	73.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	141	303	654	1,408
CNEL:	151	326	703	1,515

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 60,773 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,014 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.18	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.06	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.02	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.1	71.0	69.2	63.2	71.8	72.4	
Medium Trucks:	65.5	64.8	58.4	56.9	65.3	65.6	
Heavy Trucks:	65.5	64.9	55.9	57.1	65.5	65.6	
Vehicle Noise:	73.6	72.7	69.8	64.9	73.4	73.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	142	307	661	1,424
CNEL:	153	330	711	1,532



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Scottsdale Drive to I-5 SB Off- Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 59,917 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,943 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.12	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.08	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.0	70.9	69.2	63.1	71.7	72.3
Medium Trucks:	65.4	64.7	58.4	56.8	65.3	65.5
Heavy Trucks:	65.4	64.8	55.8	57.0	65.4	65.5
Vehicle Noise:	73.6	72.7	69.7	64.8	73.4	73.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	141	304	655	1,411
CNEL:	152	327	704	1,518

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: I-405 NB Off-Ramp to San Leandro

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 56,621 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,671 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.87	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.37	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.32	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.8	70.7	68.9	62.9	71.5	72.1
Medium Trucks:	65.1	64.5	58.1	56.6	65.0	65.3
Heavy Trucks:	65.2	64.6	55.6	56.8	65.2	65.3
Vehicle Noise:	73.3	72.4	69.5	64.6	73.1	73.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	136	293	631	1,358
CNEL:	146	315	678	1,461

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: San Leandro to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 53,104 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,381 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.59	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.65	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.60	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.5	70.4	68.6	62.6	71.2	71.8	
Medium Trucks:	64.9	64.2	57.8	56.3	64.7	65.0	
Heavy Trucks:	64.9	64.3	55.3	56.5	64.9	65.0	
Vehicle Noise:	73.1	72.1	69.2	64.3	72.9	73.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	130	280	604	1,302
CNEL:	140	302	650	1,400

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Harvard Avenue to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 53,257 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,394 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.61	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.63	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.59	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.5	70.4	68.7	62.6	71.2	71.8	
Medium Trucks:	64.9	64.2	57.8	56.3	64.8	65.0	
Heavy Trucks:	64.9	64.3	55.3	56.5	64.9	65.0	
Vehicle Noise:	73.1	72.1	69.2	64.3	72.9	73.3	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	130	281	605	1,304
CNEL:	140	302	651	1,403

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Trabuco Road to Farwell Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 59,765 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,931 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.11	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.13	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.09	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.4	71.3	69.6	63.5	72.1	72.7	
Medium Trucks:	65.8	65.1	58.8	57.2	65.7	65.9	
Heavy Trucks:	65.8	65.2	56.2	57.4	65.8	65.9	
Vehicle Noise:	74.0	73.1	70.1	65.2	73.8	74.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	308	663	1,428
CNEL:	154	331	713	1,537

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 51,477 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,247 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.46	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.78	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.74	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.3	70.3	68.5	62.5	71.1	71.7
Medium Trucks:	64.7	64.1	57.7	56.2	64.6	64.8
Heavy Trucks:	64.8	64.2	55.1	56.4	64.7	64.9
Vehicle Noise:	72.9	72.0	69.0	64.2	72.7	73.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	127	275	592	1,275
CNEL:	137	295	637	1,371

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Main Street to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 50,071 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,131 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.34	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.90	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.86	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.2	70.2	68.4	62.3	71.0	71.6
Medium Trucks:	64.6	63.9	57.6	56.0	64.5	64.7
Heavy Trucks:	64.6	64.1	55.0	56.3	64.6	64.8
Vehicle Noise:	72.8	71.9	68.9	64.0	72.6	73.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	125	270	581	1,252
CNEL:	135	290	625	1,346

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Warner Avenue to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 48,906 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,035 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.24	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.00	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.96	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	70.1	68.3	62.2	70.9	71.5
Medium Trucks:	64.5	63.8	57.5	55.9	64.4	64.6
Heavy Trucks:	64.5	64.0	54.9	56.2	64.5	64.6
Vehicle Noise:	72.7	71.8	68.8	63.9	72.5	73.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	265	572	1,232
CNEL:	133	286	615	1,325



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Walnut Avenue to Scottsdale Dive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 48,151 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,972 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.17	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.07	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.03	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	70.0	68.2	62.2	70.8	71.4
Medium Trucks:	64.4	63.8	57.4	55.9	64.3	64.6
Heavy Trucks:	64.5	63.9	54.9	56.1	64.5	64.6
Vehicle Noise:	72.6	71.7	68.7	63.9	72.4	72.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	122	263	566	1,219
CNEL:	131	283	609	1,312

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,408 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,911 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.10	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.14	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.09	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.0	69.9	68.2	62.1	70.7	71.3
Medium Trucks:	64.4	63.7	57.3	55.8	64.3	64.5
Heavy Trucks:	64.4	63.8	54.8	56.0	64.4	64.5
Vehicle Noise:	72.6	71.6	68.7	63.8	72.4	72.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	260	560	1,207
CNEL:	130	280	603	1,298

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Shady Canyon Drive to Palo Verde

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,657 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,199 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.64	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.59	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.1	67.3	61.3	69.9	70.5
Medium Trucks:	63.5	62.9	56.5	54.9	63.4	63.6
Heavy Trucks:	63.6	63.0	53.9	55.2	63.5	63.7
Vehicle Noise:	71.7	70.8	67.8	63.0	71.5	72.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	170	366	788
CNEL:	85	183	394	848

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Deerfield Avenue to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,374 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,661 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.81	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.43	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.38	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.6	67.9	61.8	70.4	71.0
Medium Trucks:	64.1	63.4	57.1	55.5	64.0	64.2
Heavy Trucks:	64.1	63.5	54.5	55.7	64.1	64.2
Vehicle Noise:	72.3	71.3	68.4	63.5	72.1	72.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	249	536	1,155
CNEL:	124	268	577	1,242

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Sandburg Way to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,140 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,642 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.79	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.45	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.40	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.7	69.6	67.8	61.8	70.4	71.0	
Medium Trucks:	64.1	63.4	57.0	55.5	63.9	64.2	
Heavy Trucks:	64.1	63.5	54.5	55.7	64.1	64.2	
Vehicle Noise:	72.3	71.3	68.4	63.5	72.0	72.5	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	248	534	1,151
CNEL:	124	267	575	1,238

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 42,966 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,545 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.57	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.52	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	69.5	67.7	61.7	70.3	70.9
Medium Trucks:	63.9	63.3	56.9	55.4	63.8	64.1
Heavy Trucks:	64.0	63.4	54.4	55.6	64.0	64.1
Vehicle Noise:	72.1	71.2	68.3	63.4	71.9	72.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	243	525	1,130
CNEL:	122	262	564	1,216

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Palo Verde to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,255 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,001 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.00	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.7	68.7	66.9	60.8	69.5	70.1	
Medium Trucks:	63.1	62.4	56.1	54.5	63.0	63.2	
Heavy Trucks:	63.1	62.6	53.5	54.8	63.1	63.3	
Vehicle Noise:	71.3	70.4	67.4	62.5	71.1	71.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	344	740
CNEL:	80	172	370	796

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: University Drive to Sandburg Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,840 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,369 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.45	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.79	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.74	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.3	67.5	61.5	70.1	70.7
Medium Trucks:	63.7	63.1	56.7	55.1	63.6	63.8
Heavy Trucks:	63.8	63.2	54.1	55.4	63.7	63.9
Vehicle Noise:	71.9	71.0	68.0	63.2	71.7	72.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	109	235	507	1,093
CNEL:	118	253	546	1,175



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Farwell Avenue to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 46,881 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,868 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.05	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.19	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.14	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.3	70.3	68.5	62.5	71.1	71.7
Medium Trucks:	64.7	64.1	57.7	56.2	64.6	64.8
Heavy Trucks:	64.8	64.2	55.1	56.4	64.7	64.9
Vehicle Noise:	72.9	72.0	69.0	64.2	72.7	73.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	262	564	1,215
CNEL:	131	282	607	1,307

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Campus Drive to High School

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,865 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,289 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.35	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.89	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.85	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.2	69.2	67.4	61.3	70.0	70.6	
Medium Trucks:	63.6	62.9	56.6	55.0	63.5	63.7	
Heavy Trucks:	63.7	63.1	54.0	55.3	63.6	63.8	
Vehicle Noise:	71.8	70.9	67.9	63.1	71.6	72.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	108	232	499	1,075
CNEL:	116	249	537	1,157

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: High School to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,227 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,236 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.28	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.96	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.92	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.2	69.1	67.3	61.3	69.9	70.5	
Medium Trucks:	63.6	62.9	56.5	55.0	63.4	63.7	
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7	
Vehicle Noise:	71.7	70.8	67.9	63.0	71.5	72.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	229	494	1,064
CNEL:	114	247	531	1,144

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Bryan Avenue to Florence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,221 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,071 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.05	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.19	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.14	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.9	68.9	67.1	61.0	69.7	70.3	
Medium Trucks:	63.3	62.7	56.3	54.7	63.2	63.4	
Heavy Trucks:	63.4	62.8	53.7	55.0	63.3	63.5	
Vehicle Noise:	71.5	70.6	67.6	62.8	71.3	71.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	103	221	477	1,027
CNEL:	110	238	513	1,105

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Portola Parkway to Settlers

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,951 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,811 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.44	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.2	66.5	60.4	69.0	69.6
Medium Trucks:	62.7	62.0	55.6	54.1	62.6	62.8
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.9	69.9	67.0	62.1	70.7	71.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	149	321	692
CNEL:	74	161	346	745

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Florence to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 36,398 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,003 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.95	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.29	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.24	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.8	67.0	61.0	69.6	70.2
Medium Trucks:	63.2	62.6	56.2	54.6	63.1	63.3
Heavy Trucks:	63.3	62.7	53.6	54.9	63.2	63.4
Vehicle Noise:	71.4	70.5	67.5	62.7	71.2	71.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	218	470	1,012
CNEL:	109	235	505	1,089

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Irvine Boulevard to Viewpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,898 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,302 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.80	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.44	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.40	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.9	59.8	68.4	69.0	
Medium Trucks:	62.1	61.4	55.0	53.5	62.0	62.2	
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2	
Vehicle Noise:	70.3	69.3	66.4	61.5	70.1	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	183	393	847
CNEL:	91	196	423	912

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Viewpark to Meadowood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,143 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,239 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.68	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.56	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.52	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.7	59.7	68.3	68.9
Medium Trucks:	62.0	61.3	54.9	53.4	61.8	62.1
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	70.1	69.2	66.3	61.4	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	179	386	832
CNEL:	90	193	415	895



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Settlers to Furrow

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,730 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 968 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.97	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-20.20	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-24.16	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.6	65.5	63.7	57.7	66.3	66.9	
Medium Trucks:	60.0	59.3	52.9	51.4	59.8	60.1	
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1	
Vehicle Noise:	68.1	67.2	64.3	59.4	67.9	68.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	98	212	456
CNEL:	49	106	228	491

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Culver Drive  
 Road Segment: Meadowood to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,462 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,606 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.77	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-18.00	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.96	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.1	64.3	58.2	66.9	67.5
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	60.5	60.0	50.9	52.2	60.5	60.6
Vehicle Noise:	68.7	67.8	64.8	59.9	68.5	69.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	309	667
CNEL:	72	154	333	717

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Discovery Drive  
 Road Segment: Irvine Center Drive to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,370 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	773 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.75	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.7	60.6	58.9	52.8	61.4	62.1
Medium Trucks:	55.7	55.0	48.6	47.1	55.6	55.8
Heavy Trucks:	57.0	56.4	47.4	48.6	57.0	57.1
Vehicle Noise:	63.7	62.8	59.5	55.0	63.5	64.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	107	231
CNEL:	25	53	115	248

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Discovery Drive  
 Road Segment: Waterworks Way to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,968 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 410 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.31	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-22.55	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-26.51	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	59.0	57.9	56.1	50.1	58.7	59.3	
Medium Trucks:	52.9	52.3	45.9	44.3	52.8	53.0	
Heavy Trucks:	54.2	53.7	44.6	45.9	54.2	54.3	
Vehicle Noise:	61.0	60.1	56.8	52.2	60.8	61.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	15	33	70	152
CNEL:	16	35	75	162

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: East Yale Loop  
 Road Segment: Alton Parkway to Witherspoon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,294 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,097 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.04	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.28	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.23	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.2	62.2	60.4	54.3	63.0	63.6
Medium Trucks:	57.2	56.5	50.2	48.6	57.1	57.3
Heavy Trucks:	58.5	57.9	48.9	50.1	58.5	58.6
Vehicle Noise:	65.2	64.3	61.1	56.5	65.0	65.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	136	292
CNEL:	31	67	145	313

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: East Yale Loop  
 Road Segment: Osborn Street to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,601 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,040 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.51	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.46	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.0	61.9	60.2	54.1	62.7	63.3
Medium Trucks:	57.0	56.3	49.9	48.4	56.8	57.1
Heavy Trucks:	58.3	57.7	48.7	49.9	58.3	58.4
Vehicle Noise:	65.0	64.1	60.8	56.3	64.8	65.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	131	282
CNEL:	30	65	140	302

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: East Yale Loop  
 Road Segment: Yale Avenue to Springbrook South

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	11,442 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	944 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		57.786		
Left View:	-90.0 degrees	Medium Trucks:		57.717		
Right View:	90.0 degrees	Heavy Trucks:		57.787		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.69	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.93	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.88	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.6	61.5	59.7	53.7	62.3	62.9
Medium Trucks:	56.5	55.9	49.5	48.0	56.4	56.7
Heavy Trucks:	57.9	57.3	48.2	49.5	57.8	58.0
Vehicle Noise:	64.6	63.7	60.4	55.9	64.4	64.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	57	123	264
CNEL:	28	61	131	283

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: East Yale Loop  
 Road Segment: Springbrook North to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,475 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 699 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.99	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.19	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.3	60.2	58.4	52.4	61.0	61.6	
Medium Trucks:	55.2	54.6	48.2	46.7	55.1	55.4	
Heavy Trucks:	56.6	56.0	46.9	48.2	56.5	56.7	
Vehicle Noise:	63.3	62.4	59.1	54.6	63.1	63.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	100	216
CNEL:	23	50	108	232



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: East Yale Loop  
 Road Segment: Woodspring to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,005 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 578 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.82	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.02	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.4	59.4	57.6	51.6	60.2	60.8	
Medium Trucks:	54.4	53.7	47.4	45.8	54.3	54.5	
Heavy Trucks:	55.7	55.1	46.1	47.4	55.7	55.8	
Vehicle Noise:	62.5	61.6	58.3	53.7	62.3	62.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	41	88	191
CNEL:	20	44	95	204

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: East Yale Loop  
 Road Segment: Barranca Parkway to Eastshore

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,576 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	543 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.33	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.29	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.2	59.1	57.3	51.3	59.9	60.5
Medium Trucks:	54.1	53.5	47.1	45.6	54.0	54.3
Heavy Trucks:	55.5	54.9	45.8	47.1	55.4	55.6
Vehicle Noise:	62.2	61.3	58.0	53.5	62.0	62.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	85	183
CNEL:	20	42	91	196

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Eastwood  
 Road Segment: Bryan Avenue to Monticello

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,185 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 263 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-6.66	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-23.90	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-27.86	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.3	57.2	55.4	49.4	58.0	58.6
Medium Trucks:	52.5	51.8	45.5	43.9	52.4	52.6
Heavy Trucks:	54.3	53.8	44.7	46.0	54.3	54.5
Vehicle Noise:	60.5	59.6	56.2	51.8	60.3	60.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	18	39	85
CNEL:	9	20	42	91

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Eastwood  
 Road Segment: Columbus to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,983 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 164 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-8.72	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-25.96	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-29.92	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	56.2	55.2	53.4	47.3	56.0	56.6	
Medium Trucks:	50.4	49.8	43.4	41.9	50.3	50.6	
Heavy Trucks:	52.3	51.7	42.7	43.9	52.3	52.4	
Vehicle Noise:	58.4	57.6	54.1	49.7	58.3	58.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	13	29	62
CNEL:	7	14	31	66

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: El Camino Real  
 Road Segment: Jamboree Road to Alliance (SR-261 Bridge)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,240 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,587 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.67	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.63	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.8	63.8	62.0	55.9	64.6	65.2
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2
Vehicle Noise:	66.8	65.9	62.7	58.1	66.7	67.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	81	174	374
CNEL:	40	86	186	400

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: El Camino Real North  
 Road Segment: El Camino Real to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,482 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	535 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.16	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.40	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.35	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.1	59.0	57.3	51.2	59.8	60.5
Medium Trucks:	54.1	53.4	47.0	45.5	54.0	54.2
Heavy Trucks:	55.4	54.8	45.8	47.0	55.4	55.5
Vehicle Noise:	62.1	61.2	57.9	53.4	61.9	62.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	84	181
CNEL:	19	42	90	194

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Fairbanks  
 Road Segment: Alton Parkway to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,127 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,496 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 37.138				
Road Grade: 0.0%		Medium Trucks: 37.030				
Left View: -90.0 degrees		Heavy Trucks: 37.139				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.31	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-16.93	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-20.89	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.4	64.6	58.6	67.2	67.8
Medium Trucks:	61.4	60.8	54.4	52.9	61.3	61.6
Heavy Trucks:	62.7	62.2	53.1	54.4	62.7	62.9
Vehicle Noise:	69.5	68.6	65.3	60.7	69.3	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	72	156	336
CNEL:	36	77	167	359

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Fairbanks  
 Road Segment: Irvine Boulevard to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,449 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	780 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.52	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-19.76	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-23.72	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.6	61.8	55.7	64.4	65.0
Medium Trucks:	58.6	57.9	51.6	50.0	58.5	58.7
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0
Vehicle Noise:	66.6	65.7	62.5	57.9	66.4	66.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	101	217
CNEL:	23	50	108	233



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Fairchild Road  
 Road Segment: MacArthur Boulevard to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,131 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	588 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.49	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.45	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.0	60.9	59.1	53.1	61.7	62.3
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8
Heavy Trucks:	56.6	56.0	46.9	48.2	56.5	56.7
Vehicle Noise:	63.8	62.9	59.7	55.1	63.6	64.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	109	234
CNEL:	25	54	117	251

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Gateway Boulevard  
 Road Segment: Alton Parkway to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,949 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,316 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	1.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-16.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-20.19	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.5	59.4	57.7	51.6	60.2	60.9
Medium Trucks:	55.0	54.3	48.0	46.4	54.9	55.1
Heavy Trucks:	57.5	56.9	47.9	49.1	57.5	57.6
Vehicle Noise:	63.0	62.1	58.5	54.3	62.8	63.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	45	97	208
CNEL:	22	48	103	222

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred Project Name: Irvine GP  
 Road Name: Gateway Boulevard Job Number: 15937  
 Road Segment: Spectrum Center Drive (Fortune Drive) to Alton Parkway

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,089 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 997 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.20	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.44	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.40	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.3	58.2	56.5	50.4	59.0	59.6
Medium Trucks:	53.8	53.1	46.8	45.2	53.7	53.9
Heavy Trucks:	56.3	55.7	46.7	47.9	56.3	56.4
Vehicle Noise:	61.8	60.9	57.3	53.1	61.6	62.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	80	173
CNEL:	18	40	86	184

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Gateway Boulevard  
 Road Segment: Irvine Center Drive to Meridian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,154 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 508 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-3.13	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-20.37	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-24.33	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.4	55.3	53.5	47.5	56.1	56.7
Medium Trucks:	50.9	50.2	43.8	42.3	50.8	51.0
Heavy Trucks:	53.3	52.8	43.7	45.0	53.3	53.5
Vehicle Noise:	58.9	58.0	54.4	50.2	58.7	59.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	51	110
CNEL:	12	25	55	118

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Great Park Boulevard  
 Road Segment: Sand Canyon to Ridge Valley

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,334 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,658 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.22	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.02	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.97	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.5	71.4	69.7	63.6	72.2	72.8
Medium Trucks:	66.1	65.4	59.0	57.5	65.9	66.2
Heavy Trucks:	66.5	65.9	56.8	58.1	66.4	66.6
Vehicle Noise:	74.2	73.3	70.2	65.4	74.0	74.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	111	238	513	1,105
CNEL:	119	256	551	1,187

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Great Park Boulevard  
 Road Segment: Ridge Valley (O Street) to Bosque (LY Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,427 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,850 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.97	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.93	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.2	65.4	59.3	68.0	68.6
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	69.9	69.0	66.0	61.2	69.7	70.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	278	599
CNEL:	64	139	299	643

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Great Park Boulevard (EB)  
 Road Segment: Bosque to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,353 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 689 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.03	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-21.26	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-25.22	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	64.0	57.9	66.6	67.2
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5
Heavy Trucks:	60.8	60.2	51.2	52.4	60.8	60.9
Vehicle Noise:	68.5	67.6	64.5	59.8	68.3	68.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	62	134	289
CNEL:	31	67	144	311

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Great Park Boulevard (WB)  
 Road Segment: Bosque to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,471 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	616 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.51	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-21.75	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-25.70	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.3	63.5	57.4	66.1	66.7
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	68.0	67.1	64.1	59.3	67.8	68.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	125	269
CNEL:	29	62	134	289



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: University Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,728 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,875 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 37.138				
Road Grade: 0.0%	Medium Trucks: 37.030				
Left View: -90.0 degrees	Heavy Trucks: 37.139				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.78	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-16.46	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-20.41	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	68.8	67.0	61.0	69.6	70.2
Medium Trucks:	63.6	63.0	56.6	55.1	63.5	63.8
Heavy Trucks:	64.5	63.9	54.8	56.1	64.5	64.6
Vehicle Noise:	71.7	70.8	67.7	63.0	71.5	72.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	102	220	473
CNEL:	51	109	236	508

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Michelson Drive to Coronado

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,921 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,551 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.12	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.12	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.08	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.3	65.5	59.4	68.1	68.7
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2
Heavy Trucks:	62.9	62.3	53.3	54.6	62.9	63.0
Vehicle Noise:	70.2	69.3	66.1	61.4	70.0	70.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	134	289	622
CNEL:	67	144	310	668

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: San Marino to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,966 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,390 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.83	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.41	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.36	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	67.0	65.2	59.2	67.8	68.4
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	62.6	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	69.9	69.0	65.8	61.1	69.7	70.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	128	277	596
CNEL:	64	138	297	639

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Coronado to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,783 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,375 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.80	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.39	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	67.0	65.2	59.1	67.8	68.4
Medium Trucks:	61.8	61.1	54.7	53.2	61.7	61.9
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	69.9	68.9	65.8	61.1	69.7	70.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	128	275	593
CNEL:	64	137	295	637

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: San Carlo to San Marino

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,293 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,334 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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Autos:	77.5%	12.9%	9.6%	97.42%																	
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### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.73	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.51	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.46	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.9	65.1	59.1	67.7	68.3
Medium Trucks:	61.7	61.0	54.7	53.1	61.6	61.8
Heavy Trucks:	62.5	62.0	52.9	54.2	62.5	62.7
Vehicle Noise:	69.8	68.9	65.7	61.0	69.6	70.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	126	272	587
CNEL:	63	136	292	629

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Main Street to San Carlo

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,778 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,292 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.65	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.59	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.54	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.9	66.8	65.0	59.0	67.6	68.2	
Medium Trucks:	61.6	61.0	54.6	53.0	61.5	61.7	
Heavy Trucks:	62.5	61.9	52.8	54.1	62.4	62.6	
Vehicle Noise:	69.7	68.8	65.6	61.0	69.5	70.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	269	580
CNEL:	62	134	289	622

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Alton Parkway to San Leon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,000 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,733 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.44	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.76	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.6	63.8	57.8	66.4	67.0
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5
Heavy Trucks:	61.2	60.7	51.6	52.9	61.2	61.4
Vehicle Noise:	68.5	67.6	64.4	59.8	68.3	68.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	104	223	481
CNEL:	52	111	239	516

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: San Juan to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,733 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.44	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.76	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.7	65.6	63.8	57.8	66.4	67.0	
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5	
Heavy Trucks:	61.2	60.7	51.6	52.9	61.2	61.4	
Vehicle Noise:	68.5	67.6	64.4	59.8	68.3	68.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	104	223	481
CNEL:	52	111	239	516



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: San Leon to San Juan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,160 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,663 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.94	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.5	65.4	63.6	57.6	66.2	66.8	
Medium Trucks:	60.2	59.6	53.2	51.7	60.1	60.3	
Heavy Trucks:	61.1	60.5	51.4	52.7	61.1	61.2	
Vehicle Noise:	68.3	67.4	64.3	59.6	68.1	68.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	101	217	468
CNEL:	50	108	233	502

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,465 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,276 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.89	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.09	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.3	64.3	62.5	56.4	65.1	65.7
Medium Trucks:	59.1	58.4	52.0	50.5	59.0	59.2
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0
Vehicle Noise:	67.2	66.2	63.1	58.4	67.0	67.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	182	392
CNEL:	42	91	195	421

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Deerfield Avenue to Poplar Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,200 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,254 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.97	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.21	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.16	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.2	64.2	62.4	56.4	65.0	65.6	
Medium Trucks:	59.0	58.3	52.0	50.4	58.9	59.1	
Heavy Trucks:	59.8	59.3	50.2	51.5	59.8	60.0	
Vehicle Noise:	67.1	66.2	63.0	58.3	66.9	67.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	180	388
CNEL:	42	90	193	416

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,010 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,403 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.48	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.67	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.7	64.7	62.9	56.9	65.5	66.1	
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6	
Heavy Trucks:	60.3	59.7	50.7	52.0	60.3	60.4	
Vehicle Noise:	67.6	66.7	63.5	58.8	67.4	67.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	90	194	418
CNEL:	45	97	208	448

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Bridge Road to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,880 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,393 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.51	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.75	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.71	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.6	62.9	56.8	65.4	66.0
Medium Trucks:	59.5	58.8	52.4	50.9	59.3	59.6
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	67.5	66.6	63.5	58.8	67.3	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	90	193	416
CNEL:	45	96	207	446

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Paseo Westpark to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,982 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,401 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.72	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.68	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.7	62.9	56.8	65.5	66.1
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6
Heavy Trucks:	60.3	59.7	50.7	52.0	60.3	60.4
Vehicle Noise:	67.6	66.7	63.5	58.8	67.4	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	90	194	417
CNEL:	45	96	208	448

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Poplar Street to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,278 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,095 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 42.814				
Road Grade: 0.0%		Medium Trucks: 42.720				
Left View: -90.0 degrees		Heavy Trucks: 42.814				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.56	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	79.45	-18.79	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	84.25	-22.75	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.5	63.8	57.7	66.4	67.0
Medium Trucks:	60.4	59.7	53.3	51.8	60.3	60.5
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	68.4	67.5	64.4	59.7	68.3	68.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	178	383
CNEL:	41	88	191	410

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: California Avenue to Berkeley Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,831 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,224 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.07	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.31	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.27	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.1	64.1	62.3	56.3	64.9	65.5	
Medium Trucks:	58.9	58.2	51.9	50.3	58.8	59.0	
Heavy Trucks:	59.7	59.2	50.1	51.4	59.7	59.8	
Vehicle Noise:	67.0	66.1	62.9	58.2	66.8	67.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	177	381
CNEL:	41	88	190	409



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Culver Drive to California Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,731 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,215 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.30	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.1	64.0	62.3	56.2	64.8	65.5	
Medium Trucks:	58.9	58.2	51.8	50.3	58.8	59.0	
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8	
Vehicle Noise:	66.9	66.0	62.9	58.2	66.8	67.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	176	380
CNEL:	41	88	189	407

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Berkeley to Bridge Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,456 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,193 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.42	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.38	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.0	64.0	62.2	56.1	64.8	65.4
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9
Heavy Trucks:	59.6	59.0	50.0	51.3	59.6	59.7
Vehicle Noise:	66.9	66.0	62.8	58.1	66.7	67.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	81	174	375
CNEL:	40	87	187	402

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Warner Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,282 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,096 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.55	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.79	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.75	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.7	63.6	61.8	55.8	64.4	65.0	
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5	
Heavy Trucks:	59.3	58.7	49.6	50.9	59.2	59.4	
Vehicle Noise:	66.5	65.6	62.4	57.8	66.3	66.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	164	354
CNEL:	38	82	176	380

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Hicks Canyon Drive  
 Road Segment: Delamesa to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,206 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 182 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-8.26	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	75.75	-25.50	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	81.57	-29.45	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.8	54.7	52.9	46.9	55.5	56.1
Medium Trucks:	50.0	49.3	42.9	41.4	49.9	50.1
Heavy Trucks:	51.8	51.2	42.2	43.5	51.8	51.9
Vehicle Noise:	58.0	57.1	53.7	49.3	57.8	58.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	36	77
CNEL:	8	18	38	82

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Hornet (5th St)  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,383 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	279 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-4.94	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-22.18	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-26.13	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.4	53.4	51.6	45.5	54.2	54.8
Medium Trucks:	49.3	48.6	42.2	40.7	49.2	49.4
Heavy Trucks:	52.5	51.9	42.9	44.1	52.5	52.6
Vehicle Noise:	57.3	56.5	52.6	48.6	57.2	57.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	11	24	52
CNEL:	6	12	26	55

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Hubble  
 Road Segment: Irvine Center Drive to Bunsen

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 2,333 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 192 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 37.138				
Road Grade: 0.0%	Medium Trucks: 37.030				
Left View: -90.0 degrees	Heavy Trucks: 37.139				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-6.55	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-23.79	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-27.75	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.8	51.8	50.0	43.9	52.6	53.2
Medium Trucks:	47.7	47.0	40.6	39.1	47.5	47.8
Heavy Trucks:	50.9	50.3	41.2	42.5	50.8	51.0
Vehicle Noise:	55.7	54.9	51.0	47.0	55.5	55.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	19	41
CNEL:	4	9	20	43

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred Project Name: Irvine GP  
 Road Name: Irvine Boulevard Job Number: 15937  
 Road Segment: SR-133 NB Off- Ramp to Ridge Valley (O Street)

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 42,105 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,474 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.59	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.65	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.61	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.5	69.4	67.6	61.6	70.2	70.8	
Medium Trucks:	63.9	63.2	56.8	55.3	63.7	64.0	
Heavy Trucks:	63.9	63.3	54.3	55.5	63.9	64.0	
Vehicle Noise:	72.0	71.1	68.2	63.3	71.8	72.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	111	240	518	1,115
CNEL:	120	258	557	1,200

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: SR-133 SB Off-Ramp to SR-133 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 41,055 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,387 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.48	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.76	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.72	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	69.3	67.5	61.5	70.1	70.7
Medium Trucks:	63.7	63.1	56.7	55.2	63.6	63.9
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9
Vehicle Noise:	71.9	71.0	68.1	63.2	71.7	72.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	236	509	1,096
CNEL:	118	254	547	1,179



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Sand Canyon to SR-133 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,675 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,768 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.94	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.30	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.26	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.2	70.2	68.4	62.3	71.0	71.6	
Medium Trucks:	64.6	63.9	57.6	56.0	64.5	64.7	
Heavy Trucks:	64.7	64.1	55.0	56.3	64.6	64.8	
Vehicle Noise:	72.8	71.9	68.9	64.1	72.6	73.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	119	257	554	1,194
CNEL:	128	277	596	1,285

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Merit to Alton

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,805 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,954 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.88	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.36	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.31	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.8	68.7	66.9	60.9	69.5	70.1	
Medium Trucks:	63.2	62.5	56.1	54.6	63.0	63.3	
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3	
Vehicle Noise:	71.3	70.4	67.5	62.6	71.1	71.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	465	1,001
CNEL:	108	232	500	1,077

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Journey to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 35,506 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,929 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.85	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.39	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.35	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.7	66.9	60.8	69.5	70.1
Medium Trucks:	63.1	62.4	56.1	54.5	63.0	63.2
Heavy Trucks:	63.1	62.6	53.5	54.8	63.1	63.3
Vehicle Noise:	71.3	70.4	67.4	62.6	71.1	71.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	214	462	995
CNEL:	107	231	497	1,071

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Ridge Valley (O Street) to Bosque (LY Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,235 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,659 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.43	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.81	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.77	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.2	66.5	60.4	69.0	69.7
Medium Trucks:	62.7	62.0	55.7	54.1	62.6	62.8
Heavy Trucks:	62.7	62.1	53.1	54.4	62.7	62.8
Vehicle Noise:	70.9	70.0	67.0	62.1	70.7	71.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	201	433	933
CNEL:	100	216	466	1,004

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Pusan Way to Chinon (B Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,080 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,564 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.27	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.97	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.93	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.2	68.1	66.3	60.3	68.9	69.5	
Medium Trucks:	62.5	61.9	55.5	54.0	62.4	62.7	
Heavy Trucks:	62.6	62.0	52.9	54.2	62.6	62.7	
Vehicle Noise:	70.7	69.8	66.8	62.0	70.5	71.0	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	196	423	911
CNEL:	98	211	455	980

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Palo Lado to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,566 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,604 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.33	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.90	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.86	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.2	66.4	60.3	69.0	69.6
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	62.6	62.1	53.0	54.3	62.6	62.7
Vehicle Noise:	70.8	69.9	66.9	62.0	70.6	71.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	427	920
CNEL:	99	213	459	990

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Culver Drive to Palo Lado

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,307 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,583 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.30	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.94	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.90	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.1	66.4	60.3	68.9	69.5
Medium Trucks:	62.6	61.9	55.5	54.0	62.5	62.7
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	70.8	69.8	66.9	62.0	70.6	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	197	425	915
CNEL:	98	212	457	985

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: SR-261 SB Off-Ramp to SR-261 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,683 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,531 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.03	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.98	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.3	60.2	68.8	69.4
Medium Trucks:	62.5	61.8	55.4	53.9	62.4	62.6
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	70.7	69.7	66.8	61.9	70.5	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	195	419	903
CNEL:	97	209	451	971



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Old Myford Road to Market Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,767 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,538 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.22	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.02	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.97	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.3	60.2	68.8	69.4
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6
Heavy Trucks:	62.5	61.9	52.9	54.2	62.5	62.6
Vehicle Noise:	70.7	69.8	66.8	61.9	70.5	71.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	195	420	905
CNEL:	97	210	452	973

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Bosque (LY Street) to Modjeska

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,546 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,520 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.19	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.05	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.00	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.2	60.2	68.8	69.4
Medium Trucks:	62.5	61.8	55.4	53.9	62.3	62.6
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	70.7	69.7	66.8	61.9	70.5	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	194	418	900
CNEL:	97	209	450	968

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Jamboree Road to Old Myford Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 30,131 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,486 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.13	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.11	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.06	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.0	68.0	66.2	60.1	68.8	69.4	
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5	
Heavy Trucks:	62.4	61.9	52.8	54.1	62.4	62.5	
Vehicle Noise:	70.6	69.7	66.7	61.8	70.4	70.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	192	414	892
CNEL:	96	207	445	960

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Market Place to SR-261 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 30,014 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,476 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.12	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.08	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.0	67.9	66.2	60.1	68.7	69.3	
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5	
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5	
Vehicle Noise:	70.6	69.7	66.7	61.8	70.4	70.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	192	413	890
CNEL:	96	206	444	957

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Jeffrey Road to Groveland

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,333 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,420 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.02	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.22	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.18	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.8	66.1	60.0	68.6	69.2
Medium Trucks:	62.3	61.6	55.3	53.7	62.2	62.4
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.5	69.6	66.6	61.7	70.3	70.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	189	407	876
CNEL:	94	203	438	943

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Bake Parkway to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,433 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,346 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos: 77.5% 12.9% 9.6% 97.42% Medium Trucks: 84.8% 4.9% 10.3% 1.84% Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
	<b>Noise Source Elevations (in feet)</b>				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0				
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.88	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.36	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.31	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.8	67.7	65.9	59.9	68.5	69.1	
Medium Trucks:	62.2	61.5	55.1	53.6	62.0	62.3	
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3	
Vehicle Noise:	70.3	69.4	66.5	61.6	70.1	70.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	398	858
CNEL:	92	199	429	923

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred Project Name: Irvine GP  
 Road Name: Irvine Boulevard Job Number: 15937  
 Road Segment: Independence Way (The Groves)/The Groves to Jeffrey Road

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,495 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,351 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float:right">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.89	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.35	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.30	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.2	61.5	55.1	53.6	62.0	62.3
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	70.4	69.4	66.5	61.6	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	399	859
CNEL:	92	199	429	925

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Chinon (B Street) to Merit

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,405 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,261 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.72	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.52	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.47	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	68.9
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.0	61.4	52.4	53.7	62.0	62.1
Vehicle Noise:	70.2	69.3	66.3	61.4	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	180	389	837
CNEL:	90	194	418	901



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: SR-261 NB Off-Ramp to Central Park

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,539 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,272 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.74	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.50	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.45	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.6	65.8	59.7	68.4	69.0
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.0	61.5	52.4	53.7	62.0	62.2
Vehicle Noise:	70.2	69.3	66.3	61.4	70.0	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	390	840
CNEL:	90	195	420	904

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred Project Name: Irvine GP  
 Road Name: Irvine Boulevard Job Number: 15937  
 Road Segment: Pueblo Norte to Independence Way (The Groves)/ Parkwood

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,740 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,206 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos:	77.5%	12.9%	9.6%	97.42%
	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
	<b>Noise Source Elevations (in feet)</b>				
	Autos:	2.000			
	Medium Trucks:	4.000			
	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos:	74.458			
	Medium Trucks:	74.404			
	Heavy Trucks:	74.458			

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.61	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.62	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.58	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.7	59.6	68.2	68.8
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	70.1	69.1	66.2	61.3	69.9	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	382	824
CNEL:	89	191	411	886

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Yale Avenue to Pueblo Norte

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,562 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,191 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.58	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.65	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.61	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.6	59.6	68.2	68.8
Medium Trucks:	61.9	61.2	54.8	53.3	61.7	62.0
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	70.0	69.1	66.2	61.3	69.8	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	381	820
CNEL:	88	190	410	882

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Modjeska to Pusan Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,040 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,148 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.50	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.74	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.70	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	61.8	61.1	54.7	53.2	61.7	61.9
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	70.0	69.0	66.1	61.2	69.8	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	376	809
CNEL:	87	188	404	871

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Central Park Avenue to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,022 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,982 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.05	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	67.0	65.2	59.1	67.8	68.4
Medium Trucks:	61.4	60.7	54.4	52.8	61.3	61.5
Heavy Trucks:	61.5	60.9	51.8	53.1	61.4	61.6
Vehicle Noise:	69.6	68.7	65.7	60.9	69.4	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	356	767
CNEL:	83	178	383	825

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Parker to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,245 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,835 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.19	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.42	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.38	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.7	66.6	64.9	58.8	67.4	68.0	
Medium Trucks:	61.1	60.4	54.1	52.5	61.0	61.2	
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2	
Vehicle Noise:	69.3	68.3	65.4	60.5	69.1	69.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	338	729
CNEL:	78	169	364	784

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Alton Parkway to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,955 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,481 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-18.35	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-22.31	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.8	65.7	63.9	57.9	66.5	67.1	
Medium Trucks:	60.2	59.5	53.1	51.6	60.0	60.3	
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3	
Vehicle Noise:	68.3	67.4	64.5	59.6	68.1	68.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	293	632
CNEL:	68	146	315	680

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred Project Name: Irvine GP  
 Road Name: Irvine Center Drive Job Number: 15937  
 Road Segment: Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 51,614 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 4,258 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 50 mph																					
Near/Far Lane Distance: 78 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 80.0 feet	Heavy Trucks: 8.006 <span style="float:right">Grade Adjustment: 0.0</span>																				
Centerline Dist. to Observer: 80.0 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 69.914																				
Left View: -90.0 degrees	Medium Trucks: 69.857																				
Right View: 90.0 degrees	Heavy Trucks: 69.914																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.88	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.35	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.31	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	69.5	67.8	61.7	70.3	70.9
Medium Trucks:	64.2	63.5	57.1	55.6	64.0	64.3
Heavy Trucks:	64.6	64.0	55.0	56.2	64.6	64.7
Vehicle Noise:	72.3	71.4	68.3	63.5	72.1	72.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	110	238	512	1,104
CNEL:	119	256	550	1,186



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Orange Tree to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 47,747 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,939 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.55	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.69	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.65	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.9	68.8	67.0	61.0	69.6	70.2	
Medium Trucks:	63.4	62.7	56.4	54.8	63.3	63.5	
Heavy Trucks:	63.8	63.2	54.2	55.5	63.8	63.9	
Vehicle Noise:	71.5	70.6	67.6	62.8	71.3	71.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	103	223	480	1,033
CNEL:	111	239	515	1,110

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: I-405 SB Off-Ramp to Research

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 46,681 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,851 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.45	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.79	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.75	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	69.1	67.3	61.3	69.9	70.5
Medium Trucks:	63.7	63.1	56.7	55.1	63.6	63.8
Heavy Trucks:	64.1	63.6	54.5	55.8	64.1	64.3
Vehicle Noise:	71.9	70.9	67.9	63.1	71.7	72.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	103	222	479	1,032
CNEL:	111	239	515	1,109

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Irvine Valley College to Orange Tree

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,642 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,848 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.44	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.79	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.75	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	66.9	60.9	69.5	70.1
Medium Trucks:	63.3	62.6	56.3	54.7	63.2	63.4
Heavy Trucks:	63.7	63.1	54.1	55.4	63.7	63.8
Vehicle Noise:	71.4	70.5	67.5	62.7	71.2	71.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	102	219	472	1,017
CNEL:	109	235	507	1,093

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Fontaine Avenue to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,165 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,644 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.03	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.99	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.5	68.4	66.7	60.6	69.3	69.9	
Medium Trucks:	63.1	62.4	56.0	54.5	63.0	63.2	
Heavy Trucks:	63.5	62.9	53.9	55.1	63.5	63.6	
Vehicle Noise:	71.2	70.3	67.2	62.5	71.0	71.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	211	455	981
CNEL:	105	227	489	1,054

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Culver Drive to Deerwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 43,788 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,612 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.17	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.07	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.02	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.5	68.4	66.6	60.6	69.2	69.8
Medium Trucks:	63.0	62.4	56.0	54.5	62.9	63.2
Heavy Trucks:	63.5	62.9	53.8	55.1	63.4	63.6
Vehicle Noise:	71.2	70.3	67.2	62.4	71.0	71.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	210	453	975
CNEL:	105	226	486	1,048

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Deerwood to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 43,331 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,575 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.11	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.07	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.4	68.4	66.6	60.5	69.2	69.8
Medium Trucks:	63.0	62.3	56.0	54.4	62.9	63.1
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	71.1	70.2	67.2	62.4	70.9	71.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	209	450	968
CNEL:	104	224	483	1,041

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Yale Avenue to Fontaine Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 43,453 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,585 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.14	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.10	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.06	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.4	68.4	66.6	60.6	69.2	69.8	
Medium Trucks:	63.0	62.3	56.0	54.4	62.9	63.1	
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5	
Vehicle Noise:	71.1	70.2	67.2	62.4	70.9	71.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	209	450	970
CNEL:	104	225	484	1,042

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Jeffrey Road to Irvine Valley College

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 42,819 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,533 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.07	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.17	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.12	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.4	68.3	66.5	60.5	69.1	69.7
Medium Trucks:	62.9	62.3	55.9	54.4	62.8	63.1
Heavy Trucks:	63.4	62.8	53.7	55.0	63.3	63.5
Vehicle Noise:	71.1	70.2	67.1	62.3	70.9	71.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	96	207	446	961
CNEL:	103	222	479	1,032



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Alton Parkway to Spectrum

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,703 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,276 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.74	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.49	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.45	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.2	60.2	68.8	69.4
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	63.0	62.4	53.4	54.7	63.0	63.1
Vehicle Noise:	70.7	69.8	66.8	62.0	70.5	71.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	197	424	914
CNEL:	98	211	456	982

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Spectrum to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,224 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,236 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.69	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.55	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.50	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	67.9	66.2	60.1	68.7	69.3
Medium Trucks:	62.6	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	70.7	69.8	66.7	61.9	70.5	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	195	421	906
CNEL:	97	210	452	974

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Hearthstone to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 38,396 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,168 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.60	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.64	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.60	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.8	66.1	60.0	68.6	69.2
Medium Trucks:	62.5	61.8	55.4	53.9	62.4	62.6
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0
Vehicle Noise:	70.6	69.7	66.6	61.9	70.4	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	192	415	893
CNEL:	96	207	446	960

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Charter to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 36,432 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,006 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.37	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.87	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.82	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.2	61.6	55.2	53.7	62.1	62.4
Heavy Trucks:	62.7	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	70.4	69.5	66.4	61.6	70.2	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	186	400	863
CNEL:	93	200	430	927

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Jamboree Road to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 35,050 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,892 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.20	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.04	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.99	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.4	65.7	59.6	68.2	68.9	
Medium Trucks:	62.1	61.4	55.0	53.5	62.0	62.2	
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6	
Vehicle Noise:	70.2	69.3	66.2	61.5	70.0	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	390	841
CNEL:	90	195	419	903

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Pacifica to Entertainment (Enterprise/Fortune)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 35,060 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,892 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.20	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.03	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.99	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.7	59.6	68.2	68.9
Medium Trucks:	62.1	61.4	55.0	53.5	62.0	62.2
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	70.2	69.3	66.2	61.5	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	390	841
CNEL:	90	195	419	904

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 35,045 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,891 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.20	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.04	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.99	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.4	65.7	59.6	68.2	68.9	
Medium Trucks:	62.1	61.4	55.0	53.5	62.0	62.2	
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6	
Vehicle Noise:	70.2	69.3	66.2	61.5	70.0	70.5	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	390	841
CNEL:	90	195	419	903

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Harvard Avenue to Hearthstone

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,966 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,720 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.94	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.30	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.26	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.2	65.4	59.4	68.0	68.6
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	62.2	61.6	52.6	53.9	62.2	62.3
Vehicle Noise:	69.9	69.0	66.0	61.2	69.7	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	375	807
CNEL:	87	187	403	867



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Research to Hubble

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,654 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,446 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.48	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.76	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.72	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	65.0	58.9	67.5	68.1
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	61.8	61.2	52.1	53.4	61.7	61.9
Vehicle Noise:	69.5	68.6	65.5	60.7	69.3	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	349	752
CNEL:	81	174	375	808

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Barranca Parkway to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,054 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,479 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.53	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.70	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.66	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.8	65.0	59.0	67.6	68.2
Medium Trucks:	61.4	60.7	54.4	52.8	61.3	61.5
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	69.5	68.6	65.6	60.8	69.3	69.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	163	352	759
CNEL:	82	176	378	815

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Bake Parkway to Muller

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,430 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,428 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.44	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.79	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.75	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	64.9	58.9	67.5	68.1
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4
Heavy Trucks:	61.7	61.1	52.1	53.4	61.7	61.8
Vehicle Noise:	69.4	68.5	65.5	60.7	69.2	69.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	347	748
CNEL:	80	173	373	804

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Discovery to Charter

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,216 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,493 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.56	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.68	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.64	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.8	65.0	59.0	67.6	68.2
Medium Trucks:	61.4	60.8	54.4	52.8	61.3	61.5
Heavy Trucks:	61.8	61.3	52.2	53.5	61.8	62.0
Vehicle Noise:	69.6	68.6	65.6	60.8	69.4	69.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	164	354	762
CNEL:	82	176	380	818

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Hubble to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,897 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,301 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.03	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.98	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.5	66.5	64.7	58.6	67.3	67.9	
Medium Trucks:	61.1	60.4	54.0	52.5	61.0	61.2	
Heavy Trucks:	61.5	60.9	51.9	53.1	61.5	61.6	
Vehicle Noise:	69.2	68.3	65.3	60.5	69.0	69.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	72	156	335	722
CNEL:	78	167	360	776

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Muller to Tesla

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,594 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,194 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.00	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.23	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.19	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.2	64.5	58.4	67.0	67.7
Medium Trucks:	60.9	60.2	53.8	52.3	60.8	61.0
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4
Vehicle Noise:	69.0	68.1	65.0	60.3	68.8	69.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	151	325	699
CNEL:	75	162	349	751

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Sand Canyon Avenue to Odyssey

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,885 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,136 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.89	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.35	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.31	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.1	64.4	58.3	66.9	67.5
Medium Trucks:	60.8	60.1	53.7	52.2	60.6	60.9
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	68.9	68.0	64.9	60.1	68.7	69.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	148	319	687
CNEL:	74	159	343	738

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Tesla to Scientific Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,586 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,028 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.66	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.58	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.53	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	65.9	64.1	58.1	66.7	67.3
Medium Trucks:	60.5	59.9	53.5	52.0	60.4	60.6
Heavy Trucks:	60.9	60.4	51.3	52.6	60.9	61.1
Vehicle Noise:	68.7	67.7	64.7	59.9	68.5	68.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	143	308	664
CNEL:	71	154	331	713



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Scientific Way to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,463 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,936 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.46	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.78	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.73	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.8	65.7	63.9	57.9	66.5	67.1	
Medium Trucks:	60.3	59.7	53.3	51.8	60.2	60.4	
Heavy Trucks:	60.7	60.2	51.1	52.4	60.7	60.9	
Vehicle Noise:	68.5	67.5	64.5	59.7	68.3	68.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	139	299	643
CNEL:	69	149	321	691

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Gateway Boulevard to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,763 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,878 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.33	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.91	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.87	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.6	63.8	57.8	66.4	67.0
Medium Trucks:	60.2	59.5	53.2	51.6	60.1	60.3
Heavy Trucks:	60.6	60.0	51.0	52.2	60.6	60.7
Vehicle Noise:	68.3	67.4	64.4	59.6	68.1	68.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	293	631
CNEL:	68	146	314	677

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Laguna Canyon Road to Discovery

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,810 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,882 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.34	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.90	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.86	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.6	65.6	63.8	57.8	66.4	67.0	
Medium Trucks:	60.2	59.5	53.2	51.6	60.1	60.3	
Heavy Trucks:	60.6	60.0	51.0	52.3	60.6	60.7	
Vehicle Noise:	68.3	67.4	64.4	59.6	68.1	68.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	293	631
CNEL:	68	146	315	678

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Odyssey to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,449 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,852 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.27	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.97	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.93	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.5	63.7	57.7	66.3	66.9
Medium Trucks:	60.1	59.5	53.1	51.6	60.0	60.3
Heavy Trucks:	60.6	60.0	50.9	52.2	60.5	60.7
Vehicle Noise:	68.3	67.4	64.3	59.5	68.1	68.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	135	290	625
CNEL:	67	145	312	671

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Irvine Center Drive (Edinger)  
 Road Segment: Redhill Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 38,705 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,193 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.63	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.60	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.56	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.9	66.1	60.1	68.7	69.3
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0
Vehicle Noise:	70.6	69.7	66.7	61.9	70.4	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	194	417	898
CNEL:	97	208	448	965

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: I-5 SB Off-Ramp to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 69,825 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,761 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.78	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-12.46	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-16.41	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.7	71.6	69.8	63.8	72.4	73.0
Medium Trucks:	66.1	65.4	59.0	57.5	65.9	66.2
Heavy Trucks:	66.1	65.5	56.5	57.7	66.1	66.2
Vehicle Noise:	74.2	73.3	70.4	65.5	74.0	74.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	156	337	725	1,562
CNEL:	168	362	780	1,681

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 80,926 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 6,676 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.42	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-11.82	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-15.77	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.7	72.7	70.9	64.8	73.5	74.1	
Medium Trucks:	67.1	66.4	60.1	58.5	67.0	67.2	
Heavy Trucks:	67.1	66.6	57.5	58.8	67.1	67.2	
Vehicle Noise:	75.3	74.4	71.4	66.5	75.1	75.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	175	377	811	1,748
CNEL:	188	405	873	1,881

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Walnut Avenue to Michelle Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 60,211 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,967 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.14	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.10	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.06	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.0	71.0	69.2	63.1	71.8	72.4
Medium Trucks:	65.4	64.7	58.4	56.8	65.3	65.5
Heavy Trucks:	65.4	64.9	55.8	57.1	65.4	65.6
Vehicle Noise:	73.6	72.7	69.7	64.8	73.4	73.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	142	305	657	1,415
CNEL:	152	328	707	1,523



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: I-405 NB Off-Ramp to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 81,354 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 6,712 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.45	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-11.79	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-15.75	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	75.1	74.1	72.3	66.2	74.9	75.5
Medium Trucks:	68.5	67.8	61.5	59.9	68.4	68.6
Heavy Trucks:	68.5	68.0	58.9	60.2	68.5	68.6
Vehicle Noise:	76.7	75.8	72.8	67.9	76.5	77.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	271	584	1,258	2,709
CNEL:	291	628	1,353	2,915

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Michelle Drive to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 56,379 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,651 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.85	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.39	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.34	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.7	70.7	68.9	62.9	71.5	72.1
Medium Trucks:	65.1	64.5	58.1	56.5	65.0	65.2
Heavy Trucks:	65.2	64.6	55.5	56.8	65.1	65.3
Vehicle Noise:	73.3	72.4	69.4	64.6	73.1	73.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	135	292	629	1,355
CNEL:	146	314	676	1,457

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Main Street to Kelvin Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 70,210 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,792 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.81	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.43	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.39	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	74.5	73.4	71.6	65.6	74.2	74.8	
Medium Trucks:	67.9	67.2	60.8	59.3	67.8	68.0	
Heavy Trucks:	67.9	67.3	58.3	59.5	67.9	68.0	
Vehicle Noise:	76.1	75.1	72.2	67.3	75.9	76.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	246	529	1,140	2,456
CNEL:	264	569	1,226	2,642

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 86,971 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 7,175 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 130 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 88.792 Medium Trucks: 88.747 Heavy Trucks: 88.792																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.74	-3.84	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-11.50	-3.84	-1.20	-4.96	0.000	0.000
Heavy Trucks:	86.40	-15.46	-3.84	-1.20	-5.14	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.5	71.4	69.6	63.6	72.2	72.8
Medium Trucks:	65.9	65.2	58.8	57.3	65.7	66.0
Heavy Trucks:	65.9	65.3	56.3	57.5	65.9	66.0
Vehicle Noise:	74.1	73.1	70.2	65.3	73.8	74.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	199	428	922	1,986
CNEL:	214	460	992	2,136

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Kelvin Avenue to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 65,064 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,368 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.48	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.76	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.72	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.1	73.1	71.3	65.3	73.9	74.5
Medium Trucks:	67.5	66.9	60.5	59.0	67.4	67.7
Heavy Trucks:	67.6	67.0	57.9	59.2	67.5	67.7
Vehicle Noise:	75.7	74.8	71.8	67.0	75.5	76.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	233	503	1,084	2,334
CNEL:	251	541	1,166	2,511

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 64,320 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,306 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.43	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.81	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.77	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.1	73.0	71.3	65.2	73.8	74.4
Medium Trucks:	67.5	66.8	60.5	58.9	67.4	67.6
Heavy Trucks:	67.5	66.9	57.9	59.1	67.5	67.6
Vehicle Noise:	75.7	74.7	71.8	66.9	75.5	75.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	232	499	1,075	2,317
CNEL:	249	537	1,157	2,492

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Birch Street to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 48,363 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,990 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.19	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.05	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.01	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	70.0	68.2	62.2	70.8	71.4
Medium Trucks:	64.5	63.8	57.4	55.9	64.3	64.6
Heavy Trucks:	64.5	63.9	54.9	56.1	64.5	64.6
Vehicle Noise:	72.6	71.7	68.8	63.9	72.4	72.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	122	263	568	1,223
CNEL:	132	283	611	1,316

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Dupont Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 54,185 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,470 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.68	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.56	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.51	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.0	70.9	69.1	63.1	71.7	72.3	
Medium Trucks:	65.4	64.7	58.3	56.8	65.2	65.5	
Heavy Trucks:	65.4	64.8	55.8	57.0	65.4	65.5	
Vehicle Noise:	73.6	72.6	69.7	64.8	73.4	73.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	134	288	621	1,338
CNEL:	144	310	668	1,439



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Alton Parkway to Beckman

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 58,506 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,827 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.01	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.22	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.18	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.7	72.6	70.9	64.8	73.4	74.0
Medium Trucks:	67.1	66.4	60.0	58.5	67.0	67.2
Heavy Trucks:	67.1	66.5	57.5	58.7	67.1	67.2
Vehicle Noise:	75.3	74.3	71.4	66.5	75.1	75.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	217	469	1,009	2,175
CNEL:	234	504	1,086	2,340

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Fairchild Road to Birch Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 49,498 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,084 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.29	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.95	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.91	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.6	70.5	68.8	62.7	71.3	71.9
Medium Trucks:	65.0	64.3	57.9	56.4	64.9	65.1
Heavy Trucks:	65.0	64.4	55.4	56.6	65.0	65.1
Vehicle Noise:	73.2	72.2	69.3	64.4	73.0	73.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	126	271	585	1,260
CNEL:	136	292	629	1,355

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Beckman to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 54,535 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,499 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.71	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.53	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.49	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.4	72.3	70.5	64.5	73.1	73.7	
Medium Trucks:	66.8	66.1	59.7	58.2	66.7	66.9	
Heavy Trucks:	66.8	66.2	57.2	58.4	66.8	66.9	
Vehicle Noise:	75.0	74.0	71.1	66.2	74.8	75.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	208	447	963	2,075
CNEL:	223	481	1,036	2,233

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: I-5 NB Off-Ramp to El Camino Real

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 52,710 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,349 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 56.593				
Road Grade: 0.0%	Medium Trucks: 56.522				
Left View: -90.0 degrees	Heavy Trucks: 56.593				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.56	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.68	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.63	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.2	72.2	70.4	64.3	73.0	73.6	
Medium Trucks:	66.6	66.0	59.6	58.0	66.5	66.7	
Heavy Trucks:	66.7	66.1	57.0	58.3	66.6	66.8	
Vehicle Noise:	74.8	73.9	70.9	66.1	74.6	75.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	203	437	942	2,029
CNEL:	218	470	1,013	2,182

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Campus Drive to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,590 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,761 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.93	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.31	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.26	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.2	70.2	68.4	62.3	71.0	71.6	
Medium Trucks:	64.6	63.9	57.6	56.0	64.5	64.7	
Heavy Trucks:	64.6	64.1	55.0	56.3	64.6	64.8	
Vehicle Noise:	72.8	71.9	68.9	64.0	72.6	73.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	119	257	554	1,192
CNEL:	128	276	595	1,283

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: El Camino Real to West Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 51,446 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,244 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.46	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.78	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.74	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.1	72.1	70.3	64.2	72.9	73.5
Medium Trucks:	66.5	65.8	59.5	57.9	66.4	66.6
Heavy Trucks:	66.5	66.0	56.9	58.2	66.5	66.7
Vehicle Noise:	74.7	73.8	70.8	65.9	74.5	75.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	200	430	927	1,996
CNEL:	215	463	997	2,147

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: West Drive to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 51,319 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,234 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.44	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.79	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.75	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.1	72.1	70.3	64.2	72.9	73.5
Medium Trucks:	66.5	65.8	59.5	57.9	66.4	66.6
Heavy Trucks:	66.5	66.0	56.9	58.2	66.5	66.6
Vehicle Noise:	74.7	73.8	70.8	65.9	74.5	75.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	199	429	925	1,993
CNEL:	214	462	995	2,144

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Bryan Avenue to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,722 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,937 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.13	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-14.11	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-18.06	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.8	71.7	70.0	63.9	72.5	73.1
Medium Trucks:	66.2	65.5	59.2	57.6	66.1	66.3
Heavy Trucks:	66.2	65.6	56.6	57.8	66.2	66.3
Vehicle Noise:	74.4	73.5	70.5	65.6	74.2	74.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	190	409	881	1,899
CNEL:	204	440	948	2,043



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Koll Center to Fairchild Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 41,698 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,440 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.54	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.70	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.65	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.8	68.0	62.0	70.6	71.2
Medium Trucks:	64.2	63.6	57.2	55.6	64.1	64.3
Heavy Trucks:	64.3	63.7	54.6	55.9	64.2	64.4
Vehicle Noise:	72.4	71.5	68.5	63.7	72.2	72.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	112	242	522	1,124
CNEL:	121	260	561	1,209

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: MacArthur Boulevard to Koll Center

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 41,222 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,401 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.49	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.74	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.70	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.7	68.0	61.9	70.5	71.1
Medium Trucks:	64.2	63.5	57.1	55.6	64.1	64.3
Heavy Trucks:	64.2	63.6	54.6	55.8	64.2	64.3
Vehicle Noise:	72.4	71.4	68.5	63.6	72.2	72.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	112	240	518	1,115
CNEL:	120	258	557	1,200

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Irvine Boulevard to Portola Pakway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,193 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,408 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.99	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.24	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.20	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	62.3	61.6	55.2	53.7	62.1	62.4
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.5	69.5	66.6	61.7	70.3	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	188	405	873
CNEL:	94	202	436	940

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Warner Avenue to Edinger Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 87,026 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 7,180 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 96 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.438 Medium Trucks: 42.344 Heavy Trucks: 42.439																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.74	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-11.50	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-15.46	0.96	-1.20	-5.31	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	77.3	76.2	74.5	68.4	77.0	77.6
Medium Trucks:	70.7	70.0	63.6	62.1	70.6	70.8
Heavy Trucks:	70.7	70.1	61.1	62.3	70.7	70.8
Vehicle Noise:	78.9	77.9	75.0	70.1	78.7	79.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	242	521	1,123	2,419
CNEL:	260	561	1,208	2,602

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 71,471 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,896 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 96 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 64.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 64.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 42.438				
Road Grade: 0.0%	Medium Trucks: 42.344				
Left View: -90.0 degrees	Heavy Trucks: 42.439				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.88	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-12.35	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-16.31	0.96	-1.20	-5.31	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.4	75.4	73.6	67.5	76.2	76.8
Medium Trucks:	69.8	69.2	62.8	61.2	69.7	69.9
Heavy Trucks:	69.9	69.3	60.2	61.5	69.8	70.0
Vehicle Noise:	78.0	77.1	74.1	69.3	77.8	78.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	212	457	985	2,121
CNEL:	228	492	1,059	2,282

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Jamboree Road  
 Road Segment: Edinger Avenue to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 66,471 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,484 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 96 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 64.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 64.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 42.438				
Road Grade: 0.0%		Medium Trucks: 42.344				
Left View: -90.0 degrees		Heavy Trucks: 42.439				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.57	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-12.67	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-16.63	0.96	-1.20	-5.31	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	76.1	75.1	73.3	67.2	75.9	76.5
Medium Trucks:	69.5	68.8	62.5	60.9	69.4	69.6
Heavy Trucks:	69.5	68.9	59.9	61.2	69.5	69.6
Vehicle Noise:	77.7	76.8	73.8	68.9	77.5	78.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	202	435	938	2,021
CNEL:	217	468	1,009	2,174

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Walnut Avenue to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 55,850 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,608 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.68	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.55	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.51	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.2	66.4	60.4	69.0	69.6
Medium Trucks:	63.0	62.3	56.0	54.4	62.9	63.1
Heavy Trucks:	63.8	63.3	54.2	55.5	63.8	64.0
Vehicle Noise:	71.1	70.2	67.0	62.3	70.9	71.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	96	207	447	963
CNEL:	103	223	479	1,033

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Jeffrey Road  
 Road Segment: I-5 NB Off-Ramp to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 62,333 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,142 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	5.16	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.08	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.03	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.1	67.3	61.2	69.9	70.5
Medium Trucks:	63.9	63.2	56.9	55.3	63.8	64.0
Heavy Trucks:	64.7	64.1	55.1	56.4	64.7	64.8
Vehicle Noise:	72.0	71.1	67.9	63.2	71.8	72.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	105	226	488	1,051
CNEL:	113	243	523	1,127



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Poplar (Meadows) to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 50,514 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,167 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.25	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.99	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.95	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	66.0	59.9	68.5	69.2
Medium Trucks:	62.6	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	70.6	69.7	66.6	61.9	70.5	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	194	418	900
CNEL:	97	208	448	966

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 49,193 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,058 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.13	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.11	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.06	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.9	59.8	68.4	69.0	
Medium Trucks:	62.5	61.8	55.4	53.9	62.3	62.6	
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4	
Vehicle Noise:	70.5	69.6	66.5	61.8	70.3	70.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	191	411	885
CNEL:	95	204	441	949

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Center Drive to Poplar (Meadows)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 48,338 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,988 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.06	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.18	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.14	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.6	67.6	65.8	59.7	68.4	69.0	
Medium Trucks:	62.4	61.7	55.3	53.8	62.3	62.5	
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3	
Vehicle Noise:	70.5	69.5	66.4	61.7	70.3	70.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	188	406	874
CNEL:	94	202	435	938

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jeffrey Road  
 Road Segment: I-405 NB Off-Ramp to Quail Creek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 48,513 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,002 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.07	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.17	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.12	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.6	67.6	65.8	59.8	68.4	69.0	
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5	
Heavy Trucks:	63.2	62.6	53.6	54.9	63.2	63.3	
Vehicle Noise:	70.5	69.6	66.4	61.7	70.3	70.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	189	407	877
CNEL:	94	203	436	940

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Barranca Parkway to Irvine Valley College

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,090 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,885 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.94	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.30	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.25	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.7	59.6	68.2	68.8
Medium Trucks:	62.3	61.6	55.2	53.7	62.1	62.4
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	70.3	69.4	66.3	61.6	70.1	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	399	859
CNEL:	92	199	428	922

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Quail Creek to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 47,231 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,897 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.96	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.28	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.24	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.5	65.7	59.6	68.3	68.9
Medium Trucks:	62.3	61.6	55.2	53.7	62.2	62.4
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	70.4	69.4	66.3	61.6	70.2	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	186	400	861
CNEL:	92	199	429	924

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Valley College to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,501 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,671 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.70	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.54	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.50	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.2	65.4	59.4	68.0	68.6	
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1	
Heavy Trucks:	62.9	62.3	53.2	54.5	62.8	63.0	
Vehicle Noise:	70.1	69.2	66.0	61.4	69.9	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	178	384	828
CNEL:	89	191	412	888

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Trabuco Road to Hideaway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,737 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,113 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.98	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.26	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.21	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.5	64.7	58.7	67.3	67.9
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4
Heavy Trucks:	62.1	61.6	52.5	53.8	62.1	62.3
Vehicle Noise:	69.4	68.5	65.3	60.6	69.2	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	344	741
CNEL:	80	171	369	795



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Hideaway to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,660 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,107 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.97	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.27	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.22	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.5	64.7	58.7	67.3	67.9
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4
Heavy Trucks:	62.1	61.5	52.5	53.8	62.1	62.2
Vehicle Noise:	69.4	68.5	65.3	60.6	69.2	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	344	740
CNEL:	79	171	369	794

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Roosevelt to Grove

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 40,485 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,340 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.29	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.95	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.91	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.2	65.4	59.4	68.0	68.6
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.9	62.3	53.2	54.5	62.8	63.0
Vehicle Noise:	70.1	69.2	66.0	61.4	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	170	366	788
CNEL:	85	182	392	845

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Grove to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,079 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,224 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.13	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.11	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.06	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.1	67.0	65.3	59.2	67.8	68.4	
Medium Trucks:	61.9	61.2	54.8	53.3	61.7	62.0	
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8	
Vehicle Noise:	69.9	69.0	65.9	61.2	69.7	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	357	770
CNEL:	83	178	383	826

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Bryan Avenue to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,761 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,373 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.80	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.44	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.39	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	60.1	59.4	53.1	51.5	60.0	60.2
Heavy Trucks:	61.0	60.4	51.3	52.6	60.9	61.1
Vehicle Noise:	68.2	67.3	64.1	59.5	68.0	68.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	287	619
CNEL:	66	143	308	664

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Encore to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,646 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,291 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.84	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-18.08	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-22.04	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.7	62.7	60.9	54.8	63.5	64.1
Medium Trucks:	57.5	56.8	50.4	48.9	57.4	57.6
Heavy Trucks:	58.3	57.7	48.7	49.9	58.3	58.4
Vehicle Noise:	65.6	64.6	61.5	56.8	65.4	65.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	89	191	412
CNEL:	44	95	205	442

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Boulevard to Encore

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,564 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,202 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-18.39	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-22.35	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.4	62.3	60.6	54.5	63.1	63.8
Medium Trucks:	57.2	56.5	50.1	48.6	57.0	57.3
Heavy Trucks:	58.0	57.4	48.4	49.6	58.0	58.1
Vehicle Noise:	65.2	64.3	61.2	56.5	65.1	65.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	85	182	393
CNEL:	42	91	196	422

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jeronimo Road  
 Road Segment: Goodyear to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,085 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 667 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.71	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.90	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.5	61.4	59.7	53.6	62.2	62.8
Medium Trucks:	56.3	55.6	49.2	47.7	56.1	56.4
Heavy Trucks:	57.1	56.5	47.5	48.7	57.1	57.2
Vehicle Noise:	64.3	63.4	60.3	55.6	64.1	64.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	55	118	255
CNEL:	27	59	127	273

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Jeronimo Road  
 Road Segment: Alton Parkway to Goodyear

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,560 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 624 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.20	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.2	61.1	59.4	53.3	62.0	62.6	
Medium Trucks:	56.0	55.3	48.9	47.4	55.9	56.1	
Heavy Trucks:	56.8	56.2	47.2	48.4	56.8	56.9	
Vehicle Noise:	64.0	63.1	60.0	55.3	63.9	64.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	113	243
CNEL:	26	56	121	261



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Old Laguna Canyon Road to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 52,557 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,336 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.55	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.69	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.65	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.4	70.4	68.6	62.5	71.2	71.8
Medium Trucks:	64.8	64.1	57.8	56.2	64.7	64.9
Heavy Trucks:	64.9	64.3	55.2	56.5	64.8	65.0
Vehicle Noise:	73.0	72.1	69.1	64.3	72.8	73.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	129	278	600	1,293
CNEL:	139	300	645	1,391

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Laguna Canyon Freeway to Quail Hill Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,659 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,374 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.44	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.68	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.64	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.3	59.2	67.8	68.4
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6
Heavy Trucks:	61.5	60.9	51.9	53.1	61.5	61.6
Vehicle Noise:	69.7	68.7	65.8	60.9	69.5	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	124	267	576
CNEL:	62	134	288	620

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Discovery to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,807 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,139 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.45	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.3	66.2	64.4	58.4	67.0	67.6	
Medium Trucks:	60.7	60.0	53.6	52.1	60.6	60.8	
Heavy Trucks:	60.7	60.1	51.1	52.3	60.7	60.8	
Vehicle Noise:	68.9	67.9	65.0	60.1	68.7	69.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	110	236	508
CNEL:	55	118	254	547

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: I-405 Overcrossing to Pasteur

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,507 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 702 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.95	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-21.18	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.14	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.0	64.9	63.1	57.1	65.7	66.3	
Medium Trucks:	59.5	58.9	52.5	51.0	59.4	59.7	
Heavy Trucks:	59.9	59.4	50.3	51.6	59.9	60.1	
Vehicle Noise:	67.7	66.7	63.7	58.9	67.5	67.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	73	157	339
CNEL:	36	78	169	364

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Irvine Center Drive to Discovery

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,537 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 787 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-3.86	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-21.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-25.06	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.6	62.8	56.8	65.4	66.0
Medium Trucks:	59.1	58.4	52.0	50.5	58.9	59.2
Heavy Trucks:	59.1	58.5	49.5	50.7	59.1	59.2
Vehicle Noise:	67.2	66.3	63.4	58.5	67.0	67.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	86	184	397
CNEL:	43	92	198	427

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Quail Hill Parkway to I-405 Overcrossing

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,507 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 702 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.95	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-21.18	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.14	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.0	64.9	63.1	57.1	65.7	66.3	
Medium Trucks:	59.5	58.9	52.5	51.0	59.4	59.7	
Heavy Trucks:	59.9	59.4	50.3	51.6	59.9	60.1	
Vehicle Noise:	67.7	66.7	63.7	58.9	67.5	67.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	73	157	339
CNEL:	36	78	169	364

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Pasteur to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,352 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	689 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-4.44	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-21.68	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-25.63	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.0	62.3	56.2	64.8	65.4
Medium Trucks:	58.5	57.8	51.5	49.9	58.4	58.6
Heavy Trucks:	58.5	57.9	48.9	50.1	58.5	58.6
Vehicle Noise:	66.7	65.7	62.8	57.9	66.5	66.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	169	364
CNEL:	39	84	182	391

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Waterworks to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,386 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 609 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-4.97	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-22.21	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-26.17	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.6	63.5	61.7	55.7	64.3	64.9	
Medium Trucks:	58.0	57.3	50.9	49.4	57.8	58.1	
Heavy Trucks:	58.0	57.4	48.4	49.6	58.0	58.1	
Vehicle Noise:	66.1	65.2	62.3	57.4	65.9	66.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	72	155	335
CNEL:	36	78	167	360



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,866 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 566 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-5.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-22.53	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-26.48	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.2	63.2	61.4	55.4	64.0	64.6	
Medium Trucks:	57.6	57.0	50.6	49.1	57.5	57.8	
Heavy Trucks:	57.7	57.1	48.0	49.3	57.6	57.8	
Vehicle Noise:	65.8	64.9	61.9	57.1	65.6	66.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	148	319
CNEL:	34	74	159	343

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Barranca Parkway to Waterworks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,179 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 510 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-5.75	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-22.99	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-26.94	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.8	62.7	61.0	54.9	63.5	64.1	
Medium Trucks:	57.2	56.5	50.1	48.6	57.1	57.3	
Heavy Trucks:	57.2	56.6	47.6	48.8	57.2	57.3	
Vehicle Noise:	65.4	64.4	61.5	56.6	65.2	65.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	297
CNEL:	32	69	149	320

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Lake Forest Drive  
 Road Segment: Hidden Canyon to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,345 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,513 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.61	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.85	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.80	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.3	64.5	58.5	67.1	67.7
Medium Trucks:	60.9	60.2	53.9	52.3	60.8	61.0
Heavy Trucks:	61.3	60.7	51.7	53.0	61.3	61.4
Vehicle Noise:	69.0	68.1	65.1	60.3	68.8	69.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	113	243	524
CNEL:	56	121	261	562

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Lake Forest Drive  
 Road Segment: Bake Parkway to Hidden Canyon (Romano)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,195 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,501 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.64	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.88	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.84	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.3	64.5	58.4	67.1	67.7
Medium Trucks:	60.9	60.2	53.8	52.3	60.8	61.0
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4
Vehicle Noise:	69.0	68.1	65.0	60.3	68.8	69.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	112	242	521
CNEL:	56	121	260	559

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Lake Forest Drive  
 Road Segment: Tesla to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,505 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,114 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.94	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-19.18	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-23.13	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.3	61.5	55.5	64.1	64.7
Medium Trucks:	57.9	57.3	50.9	49.4	57.8	58.0
Heavy Trucks:	58.3	57.8	48.7	50.0	58.3	58.5
Vehicle Noise:	66.1	65.1	62.1	57.3	65.9	66.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	96	207	445
CNEL:	48	103	222	478

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Lake Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,138 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	506 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height:	0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	50.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 42.814				
Road Grade:	0.0%	Medium Trucks: 42.720				
Left View:	-90.0 degrees	Heavy Trucks: 42.814				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-2.35	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	70.80	-19.59	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	77.97	-23.55	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.1	55.0	53.3	47.2	55.8	56.4
Medium Trucks:	50.9	50.3	43.9	42.3	50.8	51.0
Heavy Trucks:	54.1	53.5	44.5	45.8	54.1	54.2
Vehicle Noise:	59.0	58.1	54.2	50.3	58.8	59.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	42	90
CNEL:	10	21	44	95

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Lynx  
 Road Segment: Irvine Boulevard to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1,253 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	103 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-9.25	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-26.49	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-30.45	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	50.1	49.1	47.3	41.2	49.9	50.5
Medium Trucks:	45.0	44.3	37.9	36.4	44.8	45.1
Heavy Trucks:	48.2	47.6	38.5	39.8	48.1	48.3
Vehicle Noise:	53.0	52.2	48.3	44.3	52.8	53.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	3	6	12	27
CNEL:	3	6	13	29

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: I-405 SB Off-Ramp to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 60,659 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,004 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 60 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 56.593				
Road Grade: 0.0%	Medium Trucks: 56.522				
Left View: -90.0 degrees	Heavy Trucks: 56.593				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.79	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-13.45	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-17.40	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	74.9	73.8	72.1	66.0	74.6	75.2	
Medium Trucks:	68.1	67.5	61.1	59.6	68.0	68.3	
Heavy Trucks:	67.8	67.2	58.2	59.4	67.8	67.9	
Vehicle Noise:	76.4	75.4	72.6	67.6	76.2	76.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	258	556	1,198	2,581
CNEL:	278	599	1,291	2,780



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Main Street to I-405 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 60,198 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,966 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.76	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-13.48	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-17.43	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	74.9	73.8	72.0	66.0	74.6	75.2	
Medium Trucks:	68.1	67.4	61.1	59.5	68.0	68.2	
Heavy Trucks:	67.8	67.2	58.2	59.4	67.8	67.9	
Vehicle Noise:	76.4	75.4	72.5	67.6	76.1	76.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	257	553	1,192	2,568
CNEL:	277	596	1,284	2,766

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: I-405 NB Off-Ramp and I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 59,267 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,890 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 60 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.69	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-13.55	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-17.50	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.8	73.7	72.0	65.9	74.5	75.1
Medium Trucks:	68.0	67.4	61.0	59.5	67.9	68.2
Heavy Trucks:	67.7	67.1	58.1	59.3	67.7	67.8
Vehicle Noise:	76.3	75.3	72.5	67.5	76.1	76.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	254	548	1,180	2,542
CNEL:	274	590	1,271	2,738

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Jamboree Road to Fairchild Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,795 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,283 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.03	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.98	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	64.9	58.9	67.5	68.1
Medium Trucks:	61.5	60.9	54.5	53.0	61.4	61.6
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	69.6	68.7	65.6	60.9	69.4	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	357	768
CNEL:	82	178	382	824

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Fairchild Road to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,738 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,278 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.03	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.99	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	64.9	58.9	67.5	68.1
Medium Trucks:	61.5	60.9	54.5	52.9	61.4	61.6
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5
Vehicle Noise:	69.6	68.7	65.5	60.9	69.4	69.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	356	767
CNEL:	82	177	382	823

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Fitch to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 41,993 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,464 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.45	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.79	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.75	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.4	65.6	59.5	68.2	68.8
Medium Trucks:	62.2	61.5	55.1	53.6	62.1	62.3
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	70.3	69.3	66.2	61.5	70.1	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	375	808
CNEL:	87	187	402	866

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Michelson Drive to Douglas

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 43,680 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,604 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.62	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-13.62	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-17.58	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	68.9	67.1	61.1	69.7	70.3
Medium Trucks:	63.7	63.1	56.7	55.1	63.6	63.8
Heavy Trucks:	64.6	64.0	54.9	56.2	64.5	64.7
Vehicle Noise:	71.8	70.9	67.7	63.1	71.6	72.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	128	276	594	1,280
CNEL:	137	296	637	1,373

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Douglas to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 43,619 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,599 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.61	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-13.63	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-17.58	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	68.9	67.1	61.1	69.7	70.3
Medium Trucks:	63.7	63.0	56.7	55.1	63.6	63.8
Heavy Trucks:	64.6	64.0	54.9	56.2	64.5	64.7
Vehicle Noise:	71.8	70.9	67.7	63.1	71.6	72.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	128	276	594	1,279
CNEL:	137	296	637	1,372

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Skypark to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 33,051 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,727 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.41	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.83	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.79	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.4	66.3	64.5	58.5	67.1	67.7	
Medium Trucks:	61.1	60.5	54.1	52.6	61.0	61.2	
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1	
Vehicle Noise:	69.2	68.3	65.2	60.5	69.0	69.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	148	320	688
CNEL:	74	159	343	738



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Redhill Avenue to Skypark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,961 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,307 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.68	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.56	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.52	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	65.2	63.4	57.4	66.0	66.6
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1
Heavy Trucks:	60.8	60.3	51.2	52.5	60.8	60.9
Vehicle Noise:	68.1	67.2	64.0	59.3	67.9	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	282	607
CNEL:	65	140	302	651

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Birch Street to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,454 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,687 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.32	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.92	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.87	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	63.8	62.1	56.0	64.6	65.2
Medium Trucks:	58.6	58.0	51.6	50.1	58.5	58.8
Heavy Trucks:	59.5	58.9	49.9	51.1	59.5	59.6
Vehicle Noise:	66.7	65.8	62.7	58.0	66.5	67.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	106	229	493
CNEL:	53	114	245	529

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Campus Drive to Birch Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,933 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,892 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.82	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-16.42	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-20.38	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.2	66.1	64.3	58.3	66.9	67.5	
Medium Trucks:	60.9	60.3	53.9	52.3	60.8	61.0	
Heavy Trucks:	61.8	61.2	52.1	53.4	61.7	61.9	
Vehicle Noise:	69.0	68.1	64.9	60.3	68.8	69.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	180	387	833
CNEL:	89	193	415	894

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Main Street  
 Road Segment: Gillette Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,129 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,641 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.66	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.58	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.53	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.6	65.8	59.7	68.4	69.0
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5
Heavy Trucks:	63.2	62.6	53.6	54.9	63.2	63.3
Vehicle Noise:	70.5	69.6	66.4	61.7	70.3	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	180	387	835
CNEL:	90	193	416	895

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Main Street  
 Road Segment: MacArthur Boulevard to Mercantile

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,170 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,231 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos: 77.5% 12.9% 9.6% 97.42% Medium Trucks: 84.8% 4.9% 10.3% 1.84% Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
	<b>Noise Source Elevations (in feet)</b>				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0				
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.14	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.10	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.05	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.1	67.1	65.3	59.2	67.9	68.5	
Medium Trucks:	61.9	61.2	54.8	53.3	61.8	62.0	
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8	
Vehicle Noise:	70.0	69.0	65.9	61.2	69.8	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	358	771
CNEL:	83	178	384	827

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Main Street  
 Road Segment: Executive Park to MacArthur Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,179 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,325 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.48	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.2	63.4	57.4	66.0	66.6
Medium Trucks:	60.0	59.4	53.0	51.5	59.9	60.1
Heavy Trucks:	60.9	60.3	51.3	52.5	60.9	61.0
Vehicle Noise:	68.1	67.2	64.1	59.4	67.9	68.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	283	610
CNEL:	65	141	304	655

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Main Street  
 Road Segment: Von Karman Avenue to Cartwright

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,884 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,300 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.57	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.53	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	65.2	63.4	57.3	66.0	66.6
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1
Heavy Trucks:	60.8	60.2	51.2	52.5	60.8	60.9
Vehicle Noise:	68.1	67.2	64.0	59.3	67.9	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	281	606
CNEL:	65	140	302	650

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Main Street  
 Road Segment: McDermott to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,239 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,165 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.40	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.84	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.79	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.1	57.1	65.7	66.3
Medium Trucks:	59.7	59.0	52.7	51.1	59.6	59.8
Heavy Trucks:	60.6	60.0	50.9	52.2	60.5	60.7
Vehicle Noise:	67.8	66.9	63.7	59.1	67.6	68.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	270	582
CNEL:	62	134	290	624



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Main Street  
 Road Segment: Red Hill Avenue to Executive Circle

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,766 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,126 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.32	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.91	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.87	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.8	63.1	57.0	65.6	66.2
Medium Trucks:	59.6	59.0	52.6	51.1	59.5	59.8
Heavy Trucks:	60.5	59.9	50.9	52.1	60.5	60.6
Vehicle Noise:	67.7	66.8	63.7	59.0	67.5	68.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	124	267	575
CNEL:	62	133	286	617

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Main Street  
 Road Segment: Jamboree Road to Union

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,728 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,040 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.05	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.6	62.9	56.8	65.4	66.1
Medium Trucks:	59.5	58.8	52.4	50.9	59.3	59.6
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	67.5	66.6	63.5	58.8	67.4	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	121	260	559
CNEL:	60	129	279	600

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Main Street  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,523 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,198 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.40	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.36	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.0	64.0	62.2	56.2	64.8	65.4
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9
Heavy Trucks:	59.6	59.1	50.0	51.3	59.6	59.8
Vehicle Noise:	66.9	66.0	62.8	58.1	66.7	67.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	175	376
CNEL:	40	87	187	403

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Main Street  
 Road Segment: Siglo to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,884 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,970 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.99	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.24	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.20	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.5	62.7	56.7	65.3	65.9
Medium Trucks:	59.3	58.6	52.3	50.7	59.2	59.4
Heavy Trucks:	60.2	59.6	50.5	51.8	60.1	60.3
Vehicle Noise:	67.4	66.5	63.3	58.7	67.2	67.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	254	547
CNEL:	59	126	272	586

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Main Street  
 Road Segment: Veneto to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,172 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,912 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.86	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.38	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.33	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.4	64.4	62.6	56.5	65.2	65.8
Medium Trucks:	59.2	58.5	52.1	50.6	59.1	59.3
Heavy Trucks:	60.0	59.4	50.4	51.7	60.0	60.1
Vehicle Noise:	67.3	66.4	63.2	58.5	67.1	67.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	115	249	536
CNEL:	57	124	267	575

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Main Street  
 Road Segment: Paseo Westpark to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,180 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,005 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.93	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.17	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.12	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.2	61.5	55.4	64.0	64.6
Medium Trucks:	58.0	57.4	51.0	49.5	57.9	58.2
Heavy Trucks:	58.9	58.3	49.3	50.5	58.9	59.0
Vehicle Noise:	66.1	65.2	62.1	57.4	65.9	66.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	72	155	334
CNEL:	36	77	167	359

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Main Street  
 Road Segment: Harvard Avenue to San Mateo

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,142 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,002 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.94	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.18	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.14	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.2	61.4	55.4	64.0	64.6
Medium Trucks:	58.0	57.4	51.0	49.5	57.9	58.1
Heavy Trucks:	58.9	58.3	49.2	50.5	58.9	59.0
Vehicle Noise:	66.1	65.2	62.1	57.4	65.9	66.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	72	155	334
CNEL:	36	77	166	358

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Marine Way  
 Road Segment: Sand Canyon Avenue to Ridge Valley (O Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,411 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,334 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 42.814				
Road Grade: 0.0%		Medium Trucks: 42.720				
Left View: -90.0 degrees		Heavy Trucks: 42.814				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.79	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	77.72	-13.45	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	82.99	-17.40	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	68.9	67.2	61.1	69.7	70.4
Medium Trucks:	64.0	63.3	57.0	55.4	63.9	64.1
Heavy Trucks:	65.3	64.7	55.7	56.9	65.3	65.4
Vehicle Noise:	72.0	71.1	67.8	63.3	71.8	72.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	143	307	662
CNEL:	71	153	329	709



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Marine Way  
 Road Segment: Alton Parkway to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,689 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,614 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.73	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-14.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-18.46	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.0	65.9	64.2	58.1	66.7	67.3	
Medium Trucks:	61.0	60.3	53.9	52.4	60.9	61.1	
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4	
Vehicle Noise:	69.0	68.1	64.8	60.3	68.8	69.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	112	242	522
CNEL:	56	120	259	558

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Marine Way  
 Road Segment: Lynx to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,229 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,659 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-14.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-18.39	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.0	64.2	58.2	66.8	67.4
Medium Trucks:	61.0	60.4	54.0	52.5	60.9	61.2
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5
Vehicle Noise:	69.1	68.2	64.9	60.4	68.9	69.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	245	527
CNEL:	56	122	262	565

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Marine Way  
 Road Segment: County Access to Treble

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,917 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,138 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.86	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.33	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.1	65.1	63.3	57.2	65.9	66.5	
Medium Trucks:	60.1	59.4	53.1	51.5	60.0	60.2	
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5	
Vehicle Noise:	68.1	67.2	64.0	59.4	67.9	68.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	98	212	456
CNEL:	49	105	227	488

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Marine Way  
 Road Segment: Ridge Valley (O Street) to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,715 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,039 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.65	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.58	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.54	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.9	63.1	57.0	65.7	66.3
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	67.9	67.0	63.8	59.2	67.7	68.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	95	205	442
CNEL:	47	102	220	473

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Marine Way  
 Road Segment: Skyhawk to County Access

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,302 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,592 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.58	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.66	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.61	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.8	63.8	62.0	56.0	64.6	65.2
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9
Heavy Trucks:	60.1	59.5	50.5	51.8	60.1	60.2
Vehicle Noise:	66.9	66.0	62.7	58.1	66.7	67.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	81	174	375
CNEL:	40	86	186	401

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Marine Way  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,824 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,470 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.00	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.96	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.5	63.4	61.7	55.6	64.2	64.8
Medium Trucks:	58.5	57.8	51.4	49.9	58.4	58.6
Heavy Trucks:	59.8	59.2	50.2	51.4	59.8	59.9
Vehicle Noise:	66.5	65.6	62.3	57.8	66.3	66.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	165	355
CNEL:	38	82	177	380

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Marine Way  
 Road Segment: Treble to Lynx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,340 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,348 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.34	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.1	63.1	61.3	55.2	63.9	64.5
Medium Trucks:	58.1	57.4	51.1	49.5	58.0	58.2
Heavy Trucks:	59.4	58.8	49.8	51.0	59.4	59.5
Vehicle Noise:	66.1	65.2	62.0	57.4	65.9	66.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	72	156	335
CNEL:	36	77	167	359

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: McGaw Avenue  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,868 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,144 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-0.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-17.51	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-21.47	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.8	60.7	59.0	52.9	61.5	62.1
Medium Trucks:	56.0	55.3	49.0	47.4	55.9	56.1
Heavy Trucks:	57.9	57.3	48.2	49.5	57.8	58.0
Vehicle Noise:	64.0	63.1	59.7	55.3	63.8	64.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	112	242
CNEL:	26	56	120	259



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: McGaw Avenue  
 Road Segment: Red Hill Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,510 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,115 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 35 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-0.39	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-17.63	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-21.58	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.7	60.6	58.8	52.8	61.4	62.0
Medium Trucks:	55.9	55.2	48.9	47.3	55.8	56.0
Heavy Trucks:	57.7	57.2	48.1	49.4	57.7	57.8
Vehicle Noise:	63.9	63.0	59.6	55.2	63.7	64.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	51	111	238
CNEL:	25	55	118	254

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: McGaw Avenue  
 Road Segment: Daimler to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,063 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 748 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 35 mph																					
Near/Far Lane Distance: 48 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 62.5 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 62.5 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 57.786																				
Left View: -90.0 degrees	Medium Trucks: 57.717																				
Right View: 90.0 degrees	Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-2.12	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-19.36	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-23.32	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.9	58.9	57.1	51.0	59.7	60.3
Medium Trucks:	54.2	53.5	47.1	45.6	54.0	54.3
Heavy Trucks:	56.0	55.4	46.4	47.6	56.0	56.1
Vehicle Noise:	62.2	61.3	57.8	53.5	62.0	62.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	85	182
CNEL:	19	42	90	195

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: McGaw Avenue  
 Road Segment: Jamboree Road to Murphy Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,424 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 365 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-22.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-26.43	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.8	55.8	54.0	47.9	56.6	57.2
Medium Trucks:	51.0	50.4	44.0	42.5	50.9	51.2
Heavy Trucks:	52.9	52.3	43.3	44.5	52.9	53.0
Vehicle Noise:	59.0	58.2	54.7	50.3	58.9	59.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	113
CNEL:	12	26	56	121

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Meadowood  
 Road Segment: Culver Drive to Canyonwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,920 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 901 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	0.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-17.09	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-21.05	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	56.6	55.6	53.8	47.8	56.4	57.0	
Medium Trucks:	51.5	50.8	44.4	42.9	51.3	51.6	
Heavy Trucks:	54.7	54.1	45.1	46.3	54.7	54.8	
Vehicle Noise:	59.5	58.7	54.8	50.9	59.4	59.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	26	57	122
CNEL:	13	28	60	130

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Meridian  
 Road Segment: Spectrum to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,563 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 211 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-6.94	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-24.18	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-28.13	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	52.6	51.5	49.7	43.7	52.3	52.9	
Medium Trucks:	47.1	46.4	40.0	38.5	46.9	47.2	
Heavy Trucks:	49.5	49.0	39.9	41.2	49.5	49.7	
Vehicle Noise:	55.1	54.2	50.6	46.4	54.9	55.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	13	29	62
CNEL:	7	14	30	66

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Meridian  
 Road Segment: Alton Parkway to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,184 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	180 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-7.63	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-24.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-28.83	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	51.9	50.8	49.0	43.0	51.6	52.2
Medium Trucks:	46.4	45.7	39.3	37.8	46.3	46.5
Heavy Trucks:	48.8	48.3	39.2	40.5	48.8	49.0
Vehicle Noise:	54.4	53.5	49.9	45.7	54.2	54.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	12	26	55
CNEL:	6	13	27	59

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Merit  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,641 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 300 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-4.62	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-21.86	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-25.82	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.7	53.7	51.9	45.9	54.5	55.1
Medium Trucks:	49.6	48.9	42.6	41.0	49.5	49.7
Heavy Trucks:	52.8	52.2	43.2	44.4	52.8	52.9
Vehicle Noise:	57.6	56.8	52.9	49.0	57.5	57.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	12	25	55
CNEL:	6	13	27	58

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Michelson Drive  
 Road Segment: Riparian to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,218 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,080 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.74	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.45	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.2	57.1	65.7	66.4
Medium Trucks:	60.0	59.3	52.9	51.4	59.9	60.1
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4
Vehicle Noise:	68.0	67.1	63.8	59.3	67.8	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	96	208	448
CNEL:	48	103	223	480



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Michelson Drive  
 Road Segment: Almond Tree Lane to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,910 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 818 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.31	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-19.55	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-23.51	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.8	63.8	62.0	55.9	64.6	65.2	
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9	
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2	
Vehicle Noise:	66.8	65.9	62.7	58.1	66.7	67.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	48	104	224
CNEL:	24	52	112	240

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Michelson Drive  
 Road Segment: Von Karman Avenue to Obsidian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,682 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,954 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.47	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.72	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.7	64.7	62.9	56.9	65.5	66.1	
Medium Trucks:	59.7	59.0	52.7	51.1	59.6	59.8	
Heavy Trucks:	61.0	60.4	51.4	52.7	61.0	61.1	
Vehicle Noise:	67.7	66.8	63.6	59.0	67.6	68.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	93	199	429
CNEL:	46	99	213	460

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Michelson Drive  
 Road Segment: Parkside to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,374 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,846 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.02	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.97	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.5	64.4	62.7	56.6	65.2	65.8	
Medium Trucks:	59.5	58.8	52.4	50.9	59.3	59.6	
Heavy Trucks:	60.8	60.2	51.2	52.4	60.8	60.9	
Vehicle Noise:	67.5	66.6	63.3	58.8	67.3	67.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	89	192	414
CNEL:	44	95	206	443

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Michelson Drive  
 Road Segment: Gillman to Seton/Sandburg Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,165 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	756 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.65	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-19.89	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-23.85	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.5	63.4	61.7	55.6	64.2	64.8
Medium Trucks:	58.5	57.8	51.4	49.9	58.4	58.6
Heavy Trucks:	59.8	59.2	50.2	51.4	59.8	59.9
Vehicle Noise:	66.5	65.6	62.3	57.8	66.3	66.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	46	99	213
CNEL:	23	49	106	228

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Michelson Drive  
 Road Segment: Carlson to Prince

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,061 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,232 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 75.0 feet Centerline Dist. to Observer: 75.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 70.413 Medium Trucks: 70.356 Heavy Trucks: 70.413																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.05	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	77.72	-15.19	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	82.99	-19.15	-2.33	-1.20	-5.25	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.0	64.0	62.2	56.1	64.8	65.4
Medium Trucks:	59.0	58.3	52.0	50.4	58.9	59.1
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	67.0	66.1	62.9	58.3	66.8	67.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	100	215	462
CNEL:	49	107	230	495

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Michelson Drive  
 Road Segment: MacArthur Boulevard to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,323 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,677 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.80	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.39	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.1	64.0	62.2	56.2	64.8	65.4	
Medium Trucks:	59.0	58.4	52.0	50.5	58.9	59.2	
Heavy Trucks:	60.4	59.8	50.7	52.0	60.3	60.5	
Vehicle Noise:	67.1	66.2	62.9	58.4	66.9	67.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	180	388
CNEL:	42	89	193	415

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Michelson Drive  
 Road Segment: Harvard Avenue to Parkside

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,916 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,478 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.94	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.5	63.5	61.7	55.6	64.3	64.9
Medium Trucks:	58.5	57.8	51.5	49.9	58.4	58.6
Heavy Trucks:	59.8	59.2	50.2	51.4	59.8	59.9
Vehicle Noise:	66.5	65.6	62.4	57.8	66.3	66.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	166	357
CNEL:	38	82	177	382

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Michelson Drive  
 Road Segment: Bixby to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,607 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,453 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.01	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.4	63.4	61.6	55.6	64.2	64.8	
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5	
Heavy Trucks:	59.7	59.1	50.1	51.4	59.7	59.8	
Vehicle Noise:	66.5	65.6	62.3	57.7	66.3	66.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	164	352
CNEL:	38	81	175	377



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Michelson Drive  
 Road Segment: Jamboree Road to Carlson

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,486 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,103 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.79	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.45	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.41	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.3	64.5	58.5	67.1	67.7
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.4
Heavy Trucks:	62.6	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	69.4	68.5	65.2	60.6	69.2	69.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	245	529
CNEL:	57	122	263	566

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Michelson Drive  
 Road Segment: Teller to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,530 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,106 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.80	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.44	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.40	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.3	64.5	58.5	67.1	67.7
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	62.6	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	69.4	68.5	65.2	60.6	69.2	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	246	529
CNEL:	57	122	263	567

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Michelson Drive  
 Road Segment: Jordan East to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,719 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	554 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	30.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	30.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 29.547				
Road Grade:	0.0%	Medium Trucks: 29.411				
Left View:	-90.0 degrees	Heavy Trucks: 29.547				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.00	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	77.72	-21.24	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	82.99	-25.20	3.32	-1.20	-5.77	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.6	61.8	55.7	64.4	65.0
Medium Trucks:	58.6	58.0	51.6	50.0	58.5	58.7
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0
Vehicle Noise:	66.6	65.7	62.5	57.9	66.5	66.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	38	81	174
CNEL:	19	40	87	186

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Michelson Drive  
 Road Segment: Culver Drive to Angell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,757 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	722 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	16 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	40.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	40.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 39.306				
Road Grade:	0.0%	Medium Trucks: 39.205				
Left View:	-90.0 degrees	Heavy Trucks: 39.307				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.85	1.46	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-20.09	1.48	-1.20	-5.08	0.000	0.000
Heavy Trucks:	82.99	-24.05	1.46	-1.20	-5.56	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.9	62.9	61.1	55.0	63.7	64.3
Medium Trucks:	57.9	57.2	50.9	49.3	57.8	58.0
Heavy Trucks:	59.2	58.6	49.6	50.8	59.2	59.3
Vehicle Noise:	65.9	65.0	61.8	57.2	65.7	66.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	45	97	208
CNEL:	22	48	103	223

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Modjeska (A Street)  
 Road Segment: Portola Springs to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,725 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,132 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 24 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 27.659 Medium Trucks: 27.514 Heavy Trucks: 27.659																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.41	3.75	-1.20	-4.81	0.000	0.000
Medium Trucks:	79.45	-18.65	3.79	-1.20	-5.14	0.000	0.000
Heavy Trucks:	84.25	-22.61	3.75	-1.20	-5.77	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.8	60.7	69.3	69.9
Medium Trucks:	63.4	62.7	56.4	54.8	63.3	63.5
Heavy Trucks:	64.2	63.6	54.6	55.8	64.2	64.3
Vehicle Noise:	71.4	70.5	67.4	62.7	71.2	71.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	169	363
CNEL:	39	84	181	390

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Modjeska (A Street)  
 Road Segment: South of Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1,874 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	155 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-10.06	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-27.30	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-31.25	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.0	58.0	56.2	50.2	58.8	59.4
Medium Trucks:	52.8	52.1	45.8	44.2	52.7	52.9
Heavy Trucks:	53.6	53.0	44.0	45.3	53.6	53.7
Vehicle Noise:	60.9	60.0	56.8	52.1	60.7	61.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	42	90
CNEL:	10	21	45	96

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Muirlands Boulevard  
 Road Segment: Bake Parkway to City Limits

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,376 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,186 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.40	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.0	63.9	62.2	56.1	64.7	65.3
Medium Trucks:	58.8	58.1	51.7	50.2	58.6	58.9
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7
Vehicle Noise:	66.8	65.9	62.8	58.1	66.6	67.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	80	173	374
CNEL:	40	86	186	401

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Muirlands Boulevard  
 Road Segment: Alton Parkway to Sterling

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,970 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 988 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.20	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.1	61.4	55.3	63.9	64.6
Medium Trucks:	58.0	57.3	50.9	49.4	57.8	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.0	65.1	62.0	57.3	65.9	66.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	331
CNEL:	35	76	165	355



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Muirlands Boulevard  
 Road Segment: Wrigley to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,970 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 988 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.20	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.1	61.4	55.3	63.9	64.6
Medium Trucks:	58.0	57.3	50.9	49.4	57.8	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.0	65.1	62.0	57.3	65.9	66.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	331
CNEL:	35	76	165	355

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Newport Coast Drive  
 Road Segment: SR-73 NB Off-Ramp to Turtle Ridge

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,333 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,430 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos: 77.5% 12.9% 9.6% 97.42% Medium Trucks: 84.8% 4.9% 10.3% 1.84% Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
	<b>Noise Source Elevations (in feet)</b>				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0				
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.12	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.08	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.4	63.3	61.5	55.5	64.1	64.7	
Medium Trucks:	58.4	57.7	51.3	49.8	58.2	58.5	
Heavy Trucks:	59.7	59.1	50.0	51.3	59.7	59.8	
Vehicle Noise:	66.4	65.5	62.2	57.7	66.2	66.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	75	162	349
CNEL:	37	80	173	373

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Newport Coast Drive  
 Road Segment: Turtle Crest to Bonita Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,101 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 998 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.45	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.69	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.64	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.8	61.8	60.0	53.9	62.6	63.2	
Medium Trucks:	56.8	56.1	49.8	48.2	56.7	56.9	
Heavy Trucks:	58.1	57.5	48.5	49.7	58.1	58.2	
Vehicle Noise:	64.8	63.9	60.7	56.1	64.6	65.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	59	127	275
CNEL:	29	63	136	294

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Nightmist  
 Road Segment: Sand Canyon Avenue to Tulip (Road C)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	11,630 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	959 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		57.786		
Left View:	-90.0 degrees	Medium Trucks:		57.717		
Right View:	90.0 degrees	Heavy Trucks:		57.787		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.61	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.56	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.1	58.1	56.3	50.3	58.9	59.5
Medium Trucks:	53.6	53.0	46.6	45.1	53.5	53.7
Heavy Trucks:	56.1	55.5	46.5	47.7	56.1	56.2
Vehicle Noise:	61.6	60.8	57.1	53.0	61.5	61.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	36	78	169
CNEL:	18	39	83	180

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Northwood  
 Road Segment: Yale Avenue to Savannah

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,715 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 389 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-4.96	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-22.20	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-26.15	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.0	58.9	57.1	51.1	59.7	60.3	
Medium Trucks:	54.2	53.5	47.2	45.6	54.1	54.3	
Heavy Trucks:	56.0	55.5	46.4	47.7	56.0	56.2	
Vehicle Noise:	62.2	61.3	57.9	53.5	62.0	62.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	51	110
CNEL:	12	25	55	118

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Northwood  
 Road Segment: Goldrush to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,773 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	311 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.93	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-23.17	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-27.12	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.0	57.9	56.2	50.1	58.7	59.4
Medium Trucks:	53.2	52.6	46.2	44.7	53.1	53.4
Heavy Trucks:	55.1	54.5	45.5	46.7	55.1	55.2
Vehicle Noise:	61.2	60.4	56.9	52.5	61.1	61.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	20	44	95
CNEL:	10	22	47	101

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Oak Canyon Drive  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,082 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 997 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 37.138				
Road Grade: 0.0%	Medium Trucks: 37.030				
Left View: -90.0 degrees	Heavy Trucks: 37.139				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.97	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-19.20	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-23.16	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.1	66.1	64.3	58.2	66.9	67.5	
Medium Trucks:	60.9	60.2	53.9	52.3	60.8	61.0	
Heavy Trucks:	61.7	61.1	52.1	53.4	61.7	61.8	
Vehicle Noise:	69.0	68.1	64.9	60.2	68.8	69.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	144	311
CNEL:	33	72	155	333

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Pacifica  
 Road Segment: Gateway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,406 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,023 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.58	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.53	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.9	61.9	60.1	54.0	62.7	63.3	
Medium Trucks:	56.9	56.2	49.9	48.3	56.8	57.0	
Heavy Trucks:	58.2	57.6	48.6	49.8	58.2	58.3	
Vehicle Noise:	64.9	64.0	60.8	56.2	64.7	65.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	60	130	279
CNEL:	30	64	139	299



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Pacifica  
 Road Segment: Alton Parkway to Gateway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,464 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 781 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.51	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.75	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.71	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.8	60.7	58.9	52.9	61.5	62.1	
Medium Trucks:	55.7	55.1	48.7	47.1	55.6	55.8	
Heavy Trucks:	57.0	56.5	47.4	48.7	57.0	57.1	
Vehicle Noise:	63.8	62.9	59.6	55.0	63.6	64.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	233
CNEL:	25	54	116	249

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred Project Name: Irvine GP  
 Road Name: Pacifica Job Number: 15937  
 Road Segment: Irvine Center Drive to Fortune Drive (Spectrum Center Drive)

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,930 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 572 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 40 mph																					
Near/Far Lane Distance: 48 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 62.5 feet	Heavy Trucks: 8.006 <span style="float:right">Grade Adjustment: 0.0</span>																				
Centerline Dist. to Observer: 62.5 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 57.786																				
Left View: -90.0 degrees	Medium Trucks: 57.717																				
Right View: 90.0 degrees	Heavy Trucks: 57.787																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.87	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.06	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.4	59.3	57.6	51.5	60.1	60.7
Medium Trucks:	54.4	53.7	47.3	45.8	54.3	54.5
Heavy Trucks:	55.7	55.1	46.1	47.3	55.7	55.8
Vehicle Noise:	62.4	61.5	58.2	53.7	62.2	62.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	41	88	189
CNEL:	20	44	94	203

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Pacifica  
 Road Segment: Meridian to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,476 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	369 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.77	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-23.00	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-26.96	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.5	57.4	55.7	49.6	58.2	58.8
Medium Trucks:	52.5	51.8	45.4	43.9	52.4	52.6
Heavy Trucks:	53.8	53.2	44.2	45.4	53.8	53.9
Vehicle Noise:	60.5	59.6	56.3	51.8	60.3	60.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	30	66	141
CNEL:	15	33	70	151

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Park Place  
 Road Segment: Christamon South to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,750 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 309 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-5.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-22.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-26.48	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	54.2	53.2	51.4	45.3	54.0	54.6	
Medium Trucks:	48.7	48.0	41.7	40.1	48.6	48.8	
Heavy Trucks:	51.2	50.6	41.6	42.8	51.2	51.3	
Vehicle Noise:	56.7	55.9	52.2	48.0	56.6	57.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	79
CNEL:	8	18	39	85

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred Project Name: Irvine GP  
 Road Name: Portola Parkway Job Number: 15937  
 Road Segment: Bee Canyon Access Road to Sand Canyon Avenue

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,011 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,981 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float:right">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.09	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.05	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.9	60.8	69.4	70.0
Medium Trucks:	63.1	62.4	56.0	54.5	63.0	63.2
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	71.3	70.3	67.4	62.5	71.1	71.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	158	341	735
CNEL:	79	170	367	791

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Portola Parkway  
 Road Segment: Jeffrey Road to Bee Canyon Access Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,959 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,977 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.06	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.8	60.8	69.4	70.0
Medium Trucks:	63.1	62.4	56.0	54.5	62.9	63.2
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	71.2	70.3	67.4	62.5	71.0	71.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	158	341	734
CNEL:	79	170	367	790

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Portola Parkway  
 Road Segment: Arrowhead to Ridge Valley Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,161 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,911 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.25	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.20	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.5	68.5	66.7	60.6	69.3	69.9
Medium Trucks:	62.9	62.2	55.9	54.3	62.8	63.0
Heavy Trucks:	62.9	62.4	53.3	54.6	62.9	63.1
Vehicle Noise:	71.1	70.2	67.2	62.3	70.9	71.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	72	155	333	718
CNEL:	77	166	358	772

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Portola Parkway  
 Road Segment: Sand Canyon Avenue to Arrowhead

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,291 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,757 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.38	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.61	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.57	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.1	66.3	60.3	68.9	69.5
Medium Trucks:	62.6	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	70.7	69.8	66.9	62.0	70.5	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	146	315	679
CNEL:	73	157	339	730



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Portola Parkway  
 Road Segment: Portola Springs to SR-241 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,068 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,408 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.57	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.53	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	67.1	65.4	59.3	67.9	68.5	
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7	
Heavy Trucks:	61.6	61.0	52.0	53.2	61.6	61.7	
Vehicle Noise:	69.8	68.9	65.9	61.0	69.6	70.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	126	272	586
CNEL:	63	136	292	630

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Portola Parkway  
 Road Segment: Gatepark to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,306 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,335 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.86	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.38	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.33	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.7	65.9	59.9	68.5	69.1
Medium Trucks:	62.1	61.5	55.1	53.6	62.0	62.2
Heavy Trucks:	62.2	61.6	52.5	53.8	62.1	62.3
Vehicle Noise:	70.3	69.4	66.4	61.6	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	184	397	856
CNEL:	92	198	427	921

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Portola Parkway  
 Road Segment: ETC-6 (SR-261) NB Off-Ramp to Gatepark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,985 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,309 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.81	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.43	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.38	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.9	59.8	68.4	69.0
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	70.3	69.3	66.4	61.5	70.1	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	183	394	849
CNEL:	91	197	424	914

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Portola Parkway  
 Road Segment: SR-261 SB Off-Ramp to SR-261 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,082 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,234 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.57	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.53	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.7	59.7	68.3	68.9
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.1
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	70.1	69.2	66.2	61.4	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	179	386	831
CNEL:	89	193	415	894

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Portola Parkway  
 Road Segment: Jamboree Road to Bellevue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,830 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,213 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.63	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.61	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.57	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.4	65.7	59.6	68.2	68.9	
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0	
Heavy Trucks:	61.9	61.3	52.3	53.6	61.9	62.0	
Vehicle Noise:	70.1	69.2	66.2	61.3	69.9	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	178	383	826
CNEL:	89	191	412	888

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Portola Parkway  
 Road Segment: Bellevue to ETC-6 (SR-261) SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,584 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,193 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.59	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.65	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.61	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.6	59.6	68.2	68.8
Medium Trucks:	61.9	61.2	54.8	53.3	61.7	62.0
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	70.0	69.1	66.2	61.3	69.8	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	381	821
CNEL:	88	190	410	883

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Portola Parkway  
 Road Segment: Yale Avenue to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,071 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,068 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.33	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.90	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.86	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.2	65.4	59.3	68.0	68.6
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7
Heavy Trucks:	61.6	61.1	52.0	53.3	61.6	61.7
Vehicle Noise:	69.8	68.9	65.9	61.0	69.6	70.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	170	366	789
CNEL:	85	183	394	849

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Portola Parkway  
 Road Segment: Culver Drive to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,276 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,838 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.18	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.42	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.37	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.6	64.9	58.8	67.4	68.0
Medium Trucks:	61.1	60.4	54.1	52.5	61.0	61.2
Heavy Trucks:	61.1	60.5	51.5	52.8	61.1	61.2
Vehicle Noise:	69.3	68.4	65.4	60.5	69.1	69.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	339	729
CNEL:	78	169	364	785



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Portola Parkway  
 Road Segment: Silverado to Portola Springs

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,067 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 996 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.84	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-20.08	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-24.04	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.7	65.6	63.9	57.8	66.4	67.0	
Medium Trucks:	60.1	59.4	53.1	51.5	60.0	60.2	
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2	
Vehicle Noise:	68.3	67.3	64.4	59.5	68.1	68.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	100	216	465
CNEL:	50	108	232	500

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Pusan  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 2,470 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 204 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 37.138				
Road Grade: 0.0%	Medium Trucks: 37.030				
Left View: -90.0 degrees	Heavy Trucks: 37.139				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-6.31	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-23.55	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-27.50	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.1	52.0	50.2	44.2	52.8	53.4
Medium Trucks:	47.9	47.2	40.9	39.3	47.8	48.0
Heavy Trucks:	51.1	50.5	41.5	42.7	51.1	51.2
Vehicle Noise:	55.9	55.1	51.2	47.3	55.8	56.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	20	42
CNEL:	4	10	21	45

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Quail Hill Parkway  
 Road Segment: Shady Canyon Drive to Passage

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,448 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,274 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.90	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.14	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.09	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.3	64.3	62.5	56.4	65.1	65.7	
Medium Trucks:	59.1	58.4	52.0	50.5	59.0	59.2	
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0	
Vehicle Noise:	67.2	66.2	63.1	58.4	67.0	67.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	182	392
CNEL:	42	91	195	420

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Quail Hill Parkway  
 Road Segment: East Knollcrest to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,917 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 818 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.82	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.02	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.4	62.3	60.6	54.5	63.1	63.7	
Medium Trucks:	57.1	56.5	50.1	48.6	57.0	57.3	
Heavy Trucks:	58.0	57.4	48.4	49.6	58.0	58.1	
Vehicle Noise:	65.2	64.3	61.2	56.5	65.0	65.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	135	292
CNEL:	31	67	145	313

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred Project Name: Irvine GP  
 Road Name: Quassar Drive (Spectrum) Job Number: 15937  
 Road Segment: Irvine Center Drive to Spectrum Center Drive (Fortune)

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,981 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 163 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 16 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 39.306 Medium Trucks: 39.205 Heavy Trucks: 39.307																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-7.27	1.46	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-24.50	1.48	-1.20	-5.08	0.000	0.000
Heavy Trucks:	77.97	-28.46	1.46	-1.20	-5.56	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	51.7	50.7	48.9	42.8	51.5	52.1
Medium Trucks:	46.6	45.9	39.5	38.0	46.5	46.7
Heavy Trucks:	49.8	49.2	40.2	41.4	49.8	49.9
Vehicle Noise:	54.6	53.8	49.9	46.0	54.5	54.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	8	17	37
CNEL:	4	8	18	39

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Red Hill Avenue  
 Road Segment: MacArthur Boulevard to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,189 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,646 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.03	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.99	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.5	68.5	66.7	60.6	69.3	69.9	
Medium Trucks:	63.1	62.4	56.0	54.5	63.0	63.2	
Heavy Trucks:	63.5	62.9	53.9	55.1	63.5	63.6	
Vehicle Noise:	71.2	70.3	67.2	62.5	71.0	71.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	211	455	981
CNEL:	105	227	489	1,054

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Red Hill Avenue  
 Road Segment: I-405 Over Crossing to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,062 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,820 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.00	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.1	65.3	59.3	67.9	68.5
Medium Trucks:	61.7	61.0	54.7	53.1	61.6	61.8
Heavy Trucks:	62.1	61.5	52.5	53.8	62.1	62.2
Vehicle Noise:	69.8	68.9	65.9	61.1	69.6	70.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	128	275	592
CNEL:	64	137	295	636

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Red Hill Avenue  
 Road Segment: Alton Parkway to Deere Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,427 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,593 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.73	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.51	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.47	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.0	67.0	65.2	59.2	67.8	68.4	
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7	
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1	
Vehicle Noise:	69.7	68.8	65.8	61.0	69.5	70.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	168	363	782
CNEL:	84	181	390	840



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Red Hill Avenue  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,718 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,534 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.63	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.61	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.56	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.9	65.1	59.1	67.7	68.3
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	69.6	68.7	65.7	60.9	69.4	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	357	770
CNEL:	83	178	384	827

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Red Hill Avenue  
 Road Segment: Deere Avenue to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,672 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,448 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.48	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.76	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.71	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	65.0	58.9	67.5	68.1
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	61.8	61.2	52.1	53.4	61.7	61.9
Vehicle Noise:	69.5	68.6	65.5	60.7	69.3	69.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	349	752
CNEL:	81	174	375	808

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Red Hill Avenue  
 Road Segment: Skypark East to MacArthur Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,395 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,765 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.06	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.18	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.14	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.3	66.5	60.4	69.1	69.7
Medium Trucks:	62.9	62.2	55.9	54.3	62.8	63.0
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4
Vehicle Noise:	71.0	70.1	67.1	62.3	70.8	71.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	146	316	680
CNEL:	73	157	339	731

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Red Hill Avenue  
 Road Segment: Main Street to Skypark East

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,423 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,520 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.59	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.83	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.78	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.2	61.6	55.2	53.7	62.1	62.4
Heavy Trucks:	62.6	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	70.4	69.4	66.4	61.6	70.2	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	286	615
CNEL:	66	142	307	661

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Research Drive  
 Road Segment: Hubble to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,938 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,057 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.01	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.4	66.3	64.6	58.5	67.1	67.7	
Medium Trucks:	61.2	60.5	54.1	52.6	61.0	61.3	
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1	
Vehicle Noise:	69.2	68.3	65.2	60.5	69.0	69.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	250	539
CNEL:	58	125	269	579

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Research Drive  
 Road Segment: Scientific to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,327 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,264 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.93	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.17	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.13	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.3	64.2	62.5	56.4	65.0	65.6
Medium Trucks:	59.0	58.4	52.0	50.5	58.9	59.2
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0
Vehicle Noise:	67.1	66.2	63.1	58.4	66.9	67.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	181	390
CNEL:	42	90	194	418

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Research Drive  
 Road Segment: Bake Parkway to Muller

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,774 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,054 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.72	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.96	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.92	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.5	63.4	61.7	55.6	64.2	64.8
Medium Trucks:	58.2	57.6	51.2	49.7	58.1	58.4
Heavy Trucks:	59.1	58.5	49.5	50.7	59.1	59.2
Vehicle Noise:	66.3	65.4	62.3	57.6	66.1	66.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	74	160	345
CNEL:	37	80	172	370

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Research Drive  
 Road Segment: Irvine Center Drive to Bunsen

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,214 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 843 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.69	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.93	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.89	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.5	62.5	60.7	54.6	63.3	63.9	
Medium Trucks:	57.3	56.6	50.2	48.7	57.2	57.4	
Heavy Trucks:	58.1	57.5	48.5	49.7	58.1	58.2	
Vehicle Noise:	65.4	64.4	61.3	56.6	65.2	65.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	297
CNEL:	32	69	148	319



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred Project Name: Irvine GP  
 Road Name: Ridge Valley (O Street) Job Number: 15937  
 Road Segment: Irvine Boulevard to Trabuco Road (Great Park Boulevard)

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,874 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,227 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	57.786			
Road Grade: 0.0%	Medium Trucks:	57.717			
Left View: -90.0 degrees	Heavy Trucks:	57.787			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.06	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.30	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.26	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.1	62.3	56.3	64.9	65.5
Medium Trucks:	58.9	58.2	51.9	50.3	58.8	59.0
Heavy Trucks:	59.8	59.2	50.1	51.4	59.7	59.9
Vehicle Noise:	67.0	66.1	62.9	58.3	66.8	67.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	177	382
CNEL:	41	88	190	410

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Ridge Valley (O Street)  
 Road Segment: Portola Parkway to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,231 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,009 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.91	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.15	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.11	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.3	63.2	61.5	55.4	64.0	64.6	
Medium Trucks:	58.1	57.4	51.0	49.5	57.9	58.2	
Heavy Trucks:	58.9	58.3	49.3	50.5	58.9	59.0	
Vehicle Noise:	66.1	65.2	62.1	57.4	65.9	66.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	72	156	335
CNEL:	36	78	167	360

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred Project Name: Irvine GP  
 Road Name: Ridge Valley (O Street) Job Number: 15937  
 Road Segment: Trabuco Road (Great Park Boulevard) to Marine Way

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,130 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 918 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
	VehicleType	Day	Evening	Night	Daily
	Autos: 77.5% 12.9% 9.6% 97.42%				
	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<b>Noise Source Elevations (in feet)</b>				
	Autos: 2.000				
	Medium Trucks: 4.000				
	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
	<b>Lane Equivalent Distance (in feet)</b>				
Autos: 57.786					
Medium Trucks: 57.717					
Heavy Trucks: 57.787					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.52	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.9	62.8	61.1	55.0	63.6	64.2
Medium Trucks:	57.7	57.0	50.6	49.1	57.5	57.8
Heavy Trucks:	58.5	57.9	48.9	50.1	58.5	58.6
Vehicle Noise:	65.7	64.8	61.7	57.0	65.5	66.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	68	146	315
CNEL:	34	73	157	338

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Ridge Valley (O Street)  
 Road Segment: Ranchland to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 936 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 77 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-13.07	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-30.31	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-34.27	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	56.0	55.0	53.2	47.1	55.8	56.4	
Medium Trucks:	49.8	49.1	42.8	41.2	49.7	49.9	
Heavy Trucks:	50.6	50.0	41.0	42.2	50.6	50.7	
Vehicle Noise:	57.9	56.9	53.8	49.1	57.7	58.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	12	26	56
CNEL:	6	13	28	61

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Ridgeline Drive  
 Road Segment: Concordia East to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,053 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,324 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 35 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 40.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 40.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 32.140				
Road Grade: 0.0%		Medium Trucks: 32.016				
Left View: -90.0 degrees		Heavy Trucks: 32.141				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	0.36	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-16.88	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	81.57	-20.83	2.78	-1.20	-5.56	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	65.2	63.4	57.4	66.0	66.6
Medium Trucks:	60.5	59.8	53.4	51.9	60.4	60.6
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	68.5	67.6	64.1	59.8	68.3	68.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	66	143	307
CNEL:	33	71	152	328

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Ridgeline Drive  
 Road Segment: Turtle Rock Drive to San Simeon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,883 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,228 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 35 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 40.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 40.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 32.140				
Road Grade: 0.0%		Medium Trucks: 32.016				
Left View: -90.0 degrees		Heavy Trucks: 32.141				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	0.03	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-17.21	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	81.57	-21.16	2.78	-1.20	-5.56	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.8	63.1	57.0	65.6	66.3
Medium Trucks:	60.1	59.5	53.1	51.6	60.0	60.3
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	68.1	67.3	63.8	59.4	68.0	68.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	136	292
CNEL:	31	67	145	312

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Rockfield Avenue  
 Road Segment: Whatney to McLaren

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,154 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,333 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.70	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.94	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.90	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.5	64.4	62.7	56.6	65.2	65.9
Medium Trucks:	59.3	58.6	52.2	50.7	59.2	59.4
Heavy Trucks:	60.1	59.5	50.5	51.7	60.1	60.2
Vehicle Noise:	67.3	66.4	63.3	58.6	67.2	67.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	87	187	404
CNEL:	43	93	201	433

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Rockfield Avenue  
 Road Segment: Bake Parkway to Whatney

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,259 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 599 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.42	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.37	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.0	61.0	59.2	53.2	61.8	62.4	
Medium Trucks:	55.8	55.1	48.8	47.2	55.7	55.9	
Heavy Trucks:	56.6	56.0	47.0	48.3	56.6	56.7	
Vehicle Noise:	63.9	63.0	59.8	55.1	63.7	64.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	51	110	237
CNEL:	25	55	118	254



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Rockfield Avenue  
 Road Segment: Thomas to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,672 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 468 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-5.25	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-22.49	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-26.44	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.0	59.9	58.1	52.1	60.7	61.3
Medium Trucks:	54.7	54.1	47.7	46.1	54.6	54.8
Heavy Trucks:	55.6	55.0	45.9	47.2	55.5	55.7
Vehicle Noise:	62.8	61.9	58.7	54.1	62.6	63.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	43	93	201
CNEL:	22	46	100	216

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Roosevelt  
 Road Segment: Jeffrey Road to Vision

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 16,664 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,375 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.06	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.30	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.25	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.2	63.1	61.4	55.3	63.9	64.6	
Medium Trucks:	58.2	57.5	51.1	49.6	58.1	58.3	
Heavy Trucks:	59.5	58.9	49.9	51.1	59.5	59.6	
Vehicle Noise:	66.2	65.3	62.0	57.5	66.0	66.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	73	158	340
CNEL:	36	78	169	364

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Roosevelt  
 Road Segment: Yale Avenue to Van Buren

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,969 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 740 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 29.547 Medium Trucks: 29.411 Heavy Trucks: 29.547																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.75	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	77.72	-19.99	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	82.99	-23.94	3.32	-1.20	-5.77	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.8	63.1	57.0	65.6	66.2
Medium Trucks:	59.9	59.2	52.8	51.3	59.8	60.0
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	67.9	67.0	63.7	59.2	67.7	68.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	45	98	211
CNEL:	23	49	105	226

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Roosevelt  
 Road Segment: Vision to Bay Tree

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,775 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,301 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.30	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.53	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.49	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.0	62.9	61.1	55.1	63.7	64.3
Medium Trucks:	57.9	57.3	50.9	49.4	57.8	58.1
Heavy Trucks:	59.3	58.7	49.6	50.9	59.2	59.4
Vehicle Noise:	66.0	65.1	61.8	57.3	65.8	66.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	152	328
CNEL:	35	76	163	351

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Roosevelt  
 Road Segment: Nimitz to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,499 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,196 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.86	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.6	62.5	60.8	54.7	63.3	63.9	
Medium Trucks:	57.6	56.9	50.5	49.0	57.5	57.7	
Heavy Trucks:	58.9	58.3	49.3	50.5	58.9	59.0	
Vehicle Noise:	65.6	64.7	61.4	56.9	65.4	65.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	144	310
CNEL:	33	71	154	332

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Roosevelt  
 Road Segment: Tulip (Road C) to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,703 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,131 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos:	77.5%	12.9%	9.6%	97.42%
	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
	<b>Noise Source Elevations (in feet)</b>				
	Autos:	2.000			
	Medium Trucks:	4.000			
	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos:	57.786			
	Medium Trucks:	57.717			
	Heavy Trucks:	57.787			

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.91	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.15	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.10	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.4	62.3	60.5	54.5	63.1	63.7
Medium Trucks:	57.3	56.7	50.3	48.8	57.2	57.4
Heavy Trucks:	58.6	58.1	49.0	50.3	58.6	58.8
Vehicle Noise:	65.4	64.5	61.2	56.6	65.2	65.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	298
CNEL:	32	69	148	319

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Royal Oak  
 Road Segment: Alton Parkway to Eaglecreek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,830 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	398 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	30.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	30.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 29.547				
Road Grade:	0.0%	Medium Trucks: 29.411				
Left View:	-90.0 degrees	Heavy Trucks: 29.547				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-4.86	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	75.75	-22.09	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	81.57	-26.05	3.32	-1.20	-5.77	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.6	60.5	58.7	52.7	61.3	61.9
Medium Trucks:	55.8	55.1	48.8	47.2	55.7	55.9
Heavy Trucks:	57.6	57.1	48.0	49.3	57.6	57.8
Vehicle Noise:	63.8	62.9	59.5	55.1	63.6	64.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	113
CNEL:	12	26	56	120

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Oak Canyon Drive to Burt Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 50,454 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,162 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.78	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.45	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.41	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.0	67.3	61.2	69.8	70.4
Medium Trucks:	63.7	63.0	56.6	55.1	63.5	63.8
Heavy Trucks:	64.1	63.5	54.4	55.7	64.1	64.2
Vehicle Noise:	71.8	70.9	67.8	63.0	71.6	72.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	107	231	498	1,072
CNEL:	115	248	535	1,152



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Irvine Center Drive to Oak Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 49,167 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,056 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.57	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.52	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.0	68.9	67.1	61.1	69.7	70.3	
Medium Trucks:	63.5	62.9	56.5	55.0	63.4	63.7	
Heavy Trucks:	64.0	63.4	54.3	55.6	63.9	64.1	
Vehicle Noise:	71.7	70.8	67.7	62.9	71.5	71.9	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	105	227	489	1,054
CNEL:	113	244	525	1,132

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-405 NB Off-Ramp to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,532 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,756 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.34	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-13.90	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.86	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.6	71.5	69.8	63.7	72.3	72.9	
Medium Trucks:	66.2	65.5	59.1	57.6	66.0	66.3	
Heavy Trucks:	66.6	66.0	57.0	58.2	66.6	66.7	
Vehicle Noise:	74.3	73.4	70.3	65.5	74.1	74.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	242	522	1,125
CNEL:	121	260	561	1,209

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Burt Road to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 53,029 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,375 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.00	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.24	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.19	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.7	67.9	61.8	70.5	71.1
Medium Trucks:	64.3	63.6	57.2	55.7	64.2	64.4
Heavy Trucks:	64.7	64.1	55.1	56.3	64.7	64.8
Vehicle Noise:	72.4	71.5	68.5	63.7	72.2	72.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	112	242	522	1,124
CNEL:	121	260	560	1,208

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Marine to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 60,688 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,007 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.59	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-12.65	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-16.61	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.7	71.6	69.9	63.8	72.4	73.0
Medium Trucks:	66.2	65.6	59.2	57.7	66.1	66.4
Heavy Trucks:	66.7	66.1	57.0	58.3	66.6	66.8
Vehicle Noise:	74.4	73.5	70.4	65.6	74.2	74.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	190	409	881	1,899
CNEL:	204	440	947	2,040

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Trabuco Road to Towngate

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,085 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,307 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.79	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.45	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.41	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.3	60.2	68.8	69.4
Medium Trucks:	62.7	62.0	55.6	54.1	62.5	62.8
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	70.8	69.9	66.8	62.0	70.6	71.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	427	919
CNEL:	99	213	459	988

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Barranca Parkway to Waterworks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 38,043 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,139 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.56	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.68	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.64	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.9	67.8	66.0	60.0	68.6	69.2	
Medium Trucks:	62.4	61.8	55.4	53.8	62.3	62.5	
Heavy Trucks:	62.8	62.3	53.2	54.5	62.8	63.0	
Vehicle Noise:	70.6	69.6	66.6	61.8	70.4	70.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	191	412	888
CNEL:	95	206	443	954

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-5 SB Off-Ramp to Marine

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 50,509 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,167 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.79	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-13.45	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-17.40	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.9	70.8	69.1	63.0	71.6	72.2	
Medium Trucks:	65.4	64.8	58.4	56.9	65.3	65.6	
Heavy Trucks:	65.9	65.3	56.2	57.5	65.8	66.0	
Vehicle Noise:	73.6	72.7	69.6	64.8	73.4	73.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	168	362	780	1,680
CNEL:	181	389	838	1,805

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Hospital to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,931 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,964 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.31	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.93	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.88	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.6	67.6	65.8	59.7	68.4	69.0	
Medium Trucks:	62.2	61.5	55.1	53.6	62.1	62.3	
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7	
Vehicle Noise:	70.3	69.4	66.4	61.6	70.1	70.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	184	397	855
CNEL:	92	198	426	918



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Nightmist to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 47,040 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,881 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.48	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-13.76	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-17.71	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.6	70.5	68.7	62.7	71.3	71.9
Medium Trucks:	65.1	64.5	58.1	56.6	65.0	65.3
Heavy Trucks:	65.6	65.0	55.9	57.2	65.5	65.7
Vehicle Noise:	73.3	72.4	69.3	64.5	73.1	73.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	160	345	744	1,602
CNEL:	172	371	799	1,722

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,399 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,920 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.25	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.99	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.95	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.4	68.7	62.6	71.2	71.8
Medium Trucks:	65.1	64.4	58.0	56.5	65.0	65.2
Heavy Trucks:	65.5	64.9	55.9	57.1	65.5	65.6
Vehicle Noise:	73.2	72.3	69.2	64.5	73.0	73.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	95	205	442	951
CNEL:	102	220	474	1,022

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-5 NB Off-Ramp to Nightmist

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,651 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,849 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.44	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-13.79	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-17.75	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.5	68.7	62.7	71.3	71.9
Medium Trucks:	65.1	64.4	58.1	56.5	65.0	65.2
Heavy Trucks:	65.5	64.9	55.9	57.1	65.5	65.6
Vehicle Noise:	73.2	72.3	69.3	64.5	73.0	73.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	159	343	740	1,594
CNEL:	171	369	795	1,712

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Towngate to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 34,490 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,845 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.13	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.11	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.06	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.4	65.6	59.6	68.2	68.8
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	70.1	69.2	66.2	61.4	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	179	386	832
CNEL:	89	193	415	894

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Waterworks to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 33,082 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,729 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.95	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.29	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.24	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.2	65.4	59.4	68.0	68.6	
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9	
Heavy Trucks:	62.2	61.7	52.6	53.9	62.2	62.3	
Vehicle Noise:	70.0	69.0	66.0	61.2	69.8	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	376	809
CNEL:	87	187	403	869

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Irvine Boulevard to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,874 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,475 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.72	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.96	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.92	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.2	66.2	64.4	58.4	67.0	67.6	
Medium Trucks:	60.8	60.1	53.8	52.2	60.7	60.9	
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3	
Vehicle Noise:	68.9	68.0	65.0	60.2	68.7	69.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	111	239	515
CNEL:	55	119	257	553

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Roosevelt to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,585 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,266 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.73	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-14.51	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-18.46	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.8	68.0	61.9	70.6	71.2
Medium Trucks:	64.4	63.7	57.4	55.8	64.3	64.5
Heavy Trucks:	64.8	64.2	55.2	56.4	64.8	64.9
Vehicle Noise:	72.5	71.6	68.6	63.8	72.3	72.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	308	663	1,428
CNEL:	153	331	712	1,535

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Alton Parkway to Hospital

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,774 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,704 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.91	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.33	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.28	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.6	65.8	59.7	68.4	69.0
Medium Trucks:	62.2	61.5	55.2	53.6	62.1	62.3
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	70.3	69.4	66.4	61.6	70.1	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	176	379	815
CNEL:	88	189	407	876



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Sand Canyon/Shady Canyon  
 Road Segment: Quail Hill Parkway to I-405 SB Ramps

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,802 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,964 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.52	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.72	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.67	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	67.0	60.9	69.5	70.1
Medium Trucks:	63.4	62.7	56.3	54.8	63.2	63.5
Heavy Trucks:	63.8	63.2	54.1	55.4	63.7	63.9
Vehicle Noise:	71.5	70.6	67.5	62.7	71.3	71.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	339	730
CNEL:	78	169	364	784

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Scientific Way  
 Road Segment: Irvine Center Drive to Wald

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1,635 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	135 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-9.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-26.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-30.75	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.5	51.4	49.7	43.6	52.2	52.8
Medium Trucks:	46.7	46.0	39.7	38.1	46.6	46.8
Heavy Trucks:	48.6	48.0	38.9	40.2	48.5	48.7
Vehicle Noise:	54.7	53.8	50.4	46.0	54.5	55.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	13	27	58
CNEL:	6	13	29	62

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Shady Canyon Drive  
 Road Segment: Culver Drive/Bonita Canyon Drive to Cloverfield

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,123 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 753 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.64	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-20.88	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-24.84	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.2	66.1	64.4	58.3	66.9	67.5	
Medium Trucks:	60.8	60.1	53.7	52.2	60.7	60.9	
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3	
Vehicle Noise:	68.9	68.0	64.9	60.1	68.7	69.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	66	142	307
CNEL:	33	71	153	330

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Shady Canyon Drive  
 Road Segment: Bommer Canyon Road to Sunnyhill

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,752 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	640 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	50.0 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		42.814		
Left View:	-90.0 degrees	Medium Trucks:		42.720		
Right View:	90.0 degrees	Heavy Trucks:		42.814		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.35	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-21.59	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.54	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.5	62.7	56.7	65.3	65.9
Medium Trucks:	59.1	58.5	52.1	50.6	59.0	59.2
Heavy Trucks:	59.5	59.0	49.9	51.2	59.5	59.7
Vehicle Noise:	67.3	66.3	63.3	58.5	67.1	67.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	148	318
CNEL:	34	74	159	342

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Skyhawk  
 Road Segment: Great Park Boulevard to Marine Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,666 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 880 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	0.05	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-17.19	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-21.15	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.5	55.5	53.7	47.7	56.3	56.9
Medium Trucks:	51.4	50.7	44.3	42.8	51.2	51.5
Heavy Trucks:	54.6	54.0	45.0	46.2	54.6	54.7
Vehicle Noise:	59.4	58.6	54.7	50.8	59.3	59.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	26	56	120
CNEL:	13	27	59	128

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Southwood  
 Road Segment: Yale Avenue to Colt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,031 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 250 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-6.88	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-24.12	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-28.07	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.1	57.0	55.2	49.2	57.8	58.4
Medium Trucks:	52.3	51.6	45.3	43.7	52.2	52.4
Heavy Trucks:	54.1	53.5	44.5	45.8	54.1	54.2
Vehicle Noise:	60.3	59.4	56.0	51.6	60.1	60.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	18	38	82
CNEL:	9	19	41	88

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Southwood  
 Road Segment: Challenger to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,798 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 231 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-7.23	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-24.47	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-28.42	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.7	56.6	54.9	48.8	57.4	58.1
Medium Trucks:	51.9	51.3	44.9	43.4	51.8	52.1
Heavy Trucks:	53.8	53.2	44.2	45.4	53.8	53.9
Vehicle Noise:	59.9	59.1	55.6	51.2	59.8	60.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	36	78
CNEL:	8	18	39	83

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Spectrum Center Drive (Fortune)  
 Road Segment: Pacifica to Quassar Drive (Spectrum )

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,786 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 972 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.31	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.55	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.51	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.2	58.1	56.4	50.3	58.9	59.5
Medium Trucks:	53.7	53.0	46.7	45.1	53.6	53.8
Heavy Trucks:	56.2	55.6	46.5	47.8	56.2	56.3
Vehicle Noise:	61.7	60.8	57.2	53.0	61.5	61.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	79	170
CNEL:	18	39	84	181



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Spectrum Center Drive (Fortune)  
 Road Segment: Quassar Drive (Spectrum ) to Gatewayb

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,116 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,082 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	0.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.09	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.04	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.7	58.6	56.8	50.8	59.4	60.0
Medium Trucks:	54.2	53.5	47.1	45.6	54.0	54.3
Heavy Trucks:	56.6	56.0	47.0	48.3	56.6	56.7
Vehicle Noise:	62.2	61.3	57.7	53.5	62.0	62.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	85	183
CNEL:	19	42	90	195

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Sunnyhill  
 Road Segment: Shady Canyon Drive to Turtle Rock Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,602 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	545 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-2.04	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-19.28	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-23.23	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.5	53.4	51.6	45.6	54.2	54.8
Medium Trucks:	49.3	48.6	42.2	40.7	49.2	49.4
Heavy Trucks:	52.5	51.9	42.9	44.1	52.5	52.6
Vehicle Noise:	57.3	56.5	52.6	48.7	57.2	57.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	41	87
CNEL:	9	20	43	93

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Technology Drive  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,036 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,643 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.97	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.92	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.7	59.6	68.2	68.8
Medium Trucks:	62.2	61.6	55.2	53.7	62.1	62.4
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	70.3	69.4	66.3	61.6	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	137	296	637
CNEL:	68	147	317	684

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred Project Name: Irvine GP  
 Road Name: Technology Drive Job Number: 15937  
 Road Segment: Old Laguna Canyon Road to I-5/SR-133 Undercrossing

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>  Average Daily Traffic (Adt): 23,487 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,938 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	<b>Site Conditions (Hard = 10, Soft = 15)</b>  Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>  Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<b>Vehicle Mix</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table> <b>Noise Source Elevations (in feet)</b> Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Lane Equivalent Distance (in feet)</b> Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.92	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.32	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.27	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.1	64.3	58.3	66.9	67.5
Medium Trucks:	60.9	60.2	53.9	52.3	60.8	61.0
Heavy Trucks:	61.7	61.1	52.1	53.4	61.7	61.8
Vehicle Noise:	69.0	68.1	64.9	60.2	68.8	69.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	112	241	518
CNEL:	56	120	258	556

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Technology Drive  
 Road Segment: I-5/SR-133 to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,568 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,862 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.75	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.49	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.45	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	65.9	64.1	58.1	66.7	67.3
Medium Trucks:	60.7	60.0	53.7	52.1	60.6	60.8
Heavy Trucks:	61.6	61.0	51.9	53.2	61.5	61.7
Vehicle Noise:	68.8	67.9	64.7	60.1	68.6	69.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	109	234	505
CNEL:	54	117	251	541

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Technology Drive  
 Road Segment: Ada to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	5,528 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	456 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-5.36	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-22.60	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-26.55	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.9	59.8	58.0	52.0	60.6	61.2
Medium Trucks:	54.6	53.9	47.6	46.0	54.5	54.7
Heavy Trucks:	55.5	54.9	45.8	47.1	55.4	55.6
Vehicle Noise:	62.7	61.8	58.6	54.0	62.5	63.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	43	92	198
CNEL:	21	46	98	212

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Toledo Way  
 Road Segment: Bake Parkway to City Limits

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,905 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 652 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-21.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-25.46	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.7	62.6	60.9	54.8	63.4	64.0	
Medium Trucks:	57.3	56.6	50.2	48.7	57.1	57.4	
Heavy Trucks:	57.7	57.1	48.1	49.3	57.7	57.8	
Vehicle Noise:	65.4	64.5	61.4	56.6	65.2	65.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	139	299
CNEL:	32	69	149	321

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Toledo Way  
 Road Segment: Goodyear to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,324 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 522 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.47	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.43	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.7	61.7	59.9	53.8	62.5	63.1	
Medium Trucks:	56.3	55.6	49.3	47.7	56.2	56.4	
Heavy Trucks:	56.7	56.1	47.1	48.3	56.7	56.8	
Vehicle Noise:	64.4	63.5	60.5	55.7	64.2	64.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	55	119	257
CNEL:	28	60	128	277



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Toledo Way  
 Road Segment: Alton Parkway to Parker

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,838 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 482 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.58	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.82	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.78	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.4	61.3	59.5	53.5	62.1	62.7
Medium Trucks:	55.9	55.3	48.9	47.4	55.8	56.1
Heavy Trucks:	56.4	55.8	46.7	48.0	56.3	56.5
Vehicle Noise:	64.1	63.2	60.1	55.3	63.9	64.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	53	113	244
CNEL:	26	56	122	262

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Trabuco Road  
 Road Segment: Keystone to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,475 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,194 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.42	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.37	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.0	64.0	62.2	56.2	64.8	65.4	
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9	
Heavy Trucks:	59.6	59.0	50.0	51.3	59.6	59.7	
Vehicle Noise:	66.9	66.0	62.8	58.1	66.7	67.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	174	375
CNEL:	40	87	187	403

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Trabuco Road  
 Road Segment: Jeffrey Road to Keystone

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,713 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,131 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.42	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.61	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.8	63.7	62.0	55.9	64.5	65.1
Medium Trucks:	58.6	57.9	51.5	50.0	58.4	58.7
Heavy Trucks:	59.4	58.8	49.8	51.0	59.4	59.5
Vehicle Noise:	66.6	65.7	62.6	57.9	66.4	66.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	168	362
CNEL:	39	84	180	388

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Trabuco Road  
 Road Segment: Culver Drive to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,214 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,090 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.58	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.81	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.77	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.6	61.8	55.8	64.4	65.0
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5
Heavy Trucks:	59.2	58.6	49.6	50.9	59.2	59.3
Vehicle Noise:	66.5	65.6	62.4	57.7	66.3	66.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	164	353
CNEL:	38	82	176	379

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Trabuco Road  
 Road Segment: Monroe to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,866 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,061 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.69	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.93	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.89	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.5	63.5	61.7	55.6	64.3	64.9	
Medium Trucks:	58.3	57.6	51.2	49.7	58.2	58.4	
Heavy Trucks:	59.1	58.5	49.5	50.7	59.1	59.2	
Vehicle Noise:	66.4	65.5	62.3	57.6	66.2	66.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	75	161	347
CNEL:	37	80	173	372

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Trabuco Road  
 Road Segment: I-5 NB Off-Ramp to Monroe

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,616 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,041 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.78	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.02	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.97	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.4	63.4	61.6	55.6	64.2	64.8	
Medium Trucks:	58.2	57.5	51.2	49.6	58.1	58.3	
Heavy Trucks:	59.0	58.4	49.4	50.7	59.0	59.1	
Vehicle Noise:	66.3	65.4	62.2	57.5	66.1	66.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	74	159	342
CNEL:	37	79	170	367

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Trabuco Road  
 Road Segment: Yale Avenue to Remington

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,616 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 958 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.37	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.33	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.1	63.0	61.2	55.2	63.8	64.4	
Medium Trucks:	57.8	57.2	50.8	49.3	57.7	58.0	
Heavy Trucks:	58.7	58.1	49.1	50.3	58.7	58.8	
Vehicle Noise:	65.9	65.0	61.9	57.2	65.7	66.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	70	150	324
CNEL:	35	75	161	348

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Trabuco Road  
 Road Segment: Remington to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,077 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 914 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.58	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.54	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.9	62.8	61.0	55.0	63.6	64.2
Medium Trucks:	57.6	57.0	50.6	49.1	57.5	57.7
Heavy Trucks:	58.5	57.9	48.8	50.1	58.5	58.6
Vehicle Noise:	65.7	64.8	61.7	57.0	65.5	66.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	68	146	314
CNEL:	34	73	156	337



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Turtle Ridge Drive  
 Road Segment: Federation Way to Bonita Canyon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,017 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,734 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.44	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.76	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.6	63.8	57.8	66.4	67.0
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5
Heavy Trucks:	61.3	60.7	51.6	52.9	61.2	61.4
Vehicle Noise:	68.5	67.6	64.4	59.8	68.3	68.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	104	223	481
CNEL:	52	111	240	516

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Turtle Rock Drive  
 Road Segment: Ridgeline to Willowleaf

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,727 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 720 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.38	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-20.62	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-24.57	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.7	64.7	62.9	56.8	65.5	66.1	
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6	
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4	
Vehicle Noise:	67.6	66.6	63.5	58.8	67.4	67.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	116	250
CNEL:	27	58	125	268

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Turtle Rock Drive  
 Road Segment: Silkwood to Sunnyhill

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,572 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 707 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.46	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-20.69	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-24.65	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.6	64.6	62.8	56.8	65.4	66.0	
Medium Trucks:	59.4	58.7	52.4	50.8	59.3	59.5	
Heavy Trucks:	60.2	59.7	50.6	51.9	60.2	60.3	
Vehicle Noise:	67.5	66.6	63.4	58.7	67.3	67.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	53	115	247
CNEL:	27	57	123	265

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Turtle Rock Drive  
 Road Segment: Canyon Park to Ridgeline

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,206 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 595 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.21	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-21.45	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-25.40	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	63.8	62.1	56.0	64.6	65.2
Medium Trucks:	58.7	58.0	51.6	50.1	58.5	58.8
Heavy Trucks:	59.5	58.9	49.9	51.1	59.5	59.6
Vehicle Noise:	66.7	65.8	62.7	58.0	66.5	67.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	102	220
CNEL:	24	51	110	236

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Turtle Rock Drive  
 Road Segment: Sunnyhill to Southernwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,588 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	296 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-7.24	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-24.48	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-28.43	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	60.8	59.0	53.0	61.6	62.2
Medium Trucks:	55.6	55.0	48.6	47.0	55.5	55.7
Heavy Trucks:	56.5	55.9	46.8	48.1	56.4	56.6
Vehicle Noise:	63.7	62.8	59.6	55.0	63.5	64.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	30	64	138
CNEL:	15	32	69	148

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Turtle Rock Drive  
 Road Segment: Campus Drive to Hillgate

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,125 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 588 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.45	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.0	60.9	59.1	53.1	61.7	62.3	
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8	
Heavy Trucks:	56.6	56.0	46.9	48.2	56.5	56.7	
Vehicle Noise:	63.8	62.9	59.7	55.1	63.6	64.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	109	234
CNEL:	25	54	116	251

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Turtle Rock Drive  
 Road Segment: Paseo Segovia to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,066 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 335 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 32.140 Medium Trucks: 32.016 Heavy Trucks: 32.141																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-6.69	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-23.93	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	84.25	-27.89	2.78	-1.20	-5.56	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.3	62.3	60.5	54.5	63.1	63.7
Medium Trucks:	57.1	56.4	50.1	48.5	57.0	57.2
Heavy Trucks:	57.9	57.4	48.3	49.6	57.9	58.0
Vehicle Noise:	65.2	64.3	61.1	56.4	65.0	65.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	40	86	185
CNEL:	20	43	92	199

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: University Drive  
 Road Segment: Golden Glow to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 42,194 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,481 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.19	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.0	69.9	68.1	62.1	70.7	71.3	
Medium Trucks:	64.5	63.9	57.5	56.0	64.4	64.6	
Heavy Trucks:	64.9	64.4	55.3	56.6	64.9	65.1	
Vehicle Noise:	72.7	71.7	68.7	63.9	72.5	72.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	197	423	912
CNEL:	98	211	455	980



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: University Drive  
 Road Segment: Ridgeline to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 51,836 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,276 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.90	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.34	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-17.29	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	69.5	67.7	61.7	70.3	70.9
Medium Trucks:	64.1	63.5	57.1	55.6	64.0	64.3
Heavy Trucks:	64.6	64.0	54.9	56.2	64.5	64.7
Vehicle Noise:	72.3	71.3	68.3	63.5	72.1	72.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	103	222	478	1,030
CNEL:	111	239	514	1,107

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: University Drive  
 Road Segment: Culver Drive to Golden Glow

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 41,000 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,383 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.88	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.31	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.8	68.0	62.0	70.6	71.2
Medium Trucks:	64.4	63.7	57.4	55.8	64.3	64.5
Heavy Trucks:	64.8	64.2	55.2	56.4	64.8	64.9
Vehicle Noise:	72.5	71.6	68.6	63.8	72.3	72.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	193	415	895
CNEL:	96	207	446	962

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: University Drive  
 Road Segment: Yale Avenue to Ridgeline

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 36,567 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,017 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.39	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.85	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.81	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.3	69.3	67.5	61.5	70.1	70.7	
Medium Trucks:	63.9	63.2	56.9	55.3	63.8	64.0	
Heavy Trucks:	64.3	63.7	54.7	56.0	64.3	64.4	
Vehicle Noise:	72.0	71.1	68.1	63.3	71.8	72.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	179	385	829
CNEL:	89	192	414	891

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: University Drive  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 58,027 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,787 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.39	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-12.85	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-16.80	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.6	67.9	61.8	70.4	71.0
Medium Trucks:	64.3	63.6	57.2	55.7	64.1	64.4
Heavy Trucks:	64.7	64.1	55.1	56.3	64.7	64.8
Vehicle Noise:	72.4	71.5	68.4	63.6	72.2	72.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	118	254	546	1,177
CNEL:	126	272	587	1,264

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: University Drive  
 Road Segment: Mesa to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,446 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,667 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 60.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	47.329			
Road Grade: 0.0%	Medium Trucks:	47.244			
Left View: -90.0 degrees	Heavy Trucks:	47.329			
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.23	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.00	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.96	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.5	71.4	69.7	63.6	72.2	72.8	
Medium Trucks:	66.1	65.4	59.0	57.5	65.9	66.2	
Heavy Trucks:	66.5	65.9	56.9	58.1	66.5	66.6	
Vehicle Noise:	74.2	73.3	70.2	65.4	74.0	74.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	111	239	514	1,107
CNEL:	119	256	552	1,189

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred	Project Name: Irvine GP
Road Name: University Drive	Job Number: 15937
Road Segment: MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS															
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>															
Average Daily Traffic (Adt): 43,634 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,600 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15															
<b>Site Data</b>	<b>Vehicle Mix</b>															
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border: none;"> <tr> <td style="text-align: right;">Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td style="text-align: right;">Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td style="text-align: right;">Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </table>	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Autos:	77.5%	12.9%	9.6%	97.42%												
Medium Trucks:	84.8%	4.9%	10.3%	1.84%												
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%												
	<b>Noise Source Elevations (in feet)</b>															
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0															
	<b>Lane Equivalent Distance (in feet)</b>															
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329															

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.15	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.08	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.04	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.4	71.3	69.6	63.5	72.2	72.8	
Medium Trucks:	66.0	65.3	58.9	57.4	65.9	66.1	
Heavy Trucks:	66.4	65.8	56.8	58.0	66.4	66.5	
Vehicle Noise:	74.1	73.2	70.1	65.4	73.9	74.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	109	236	508	1,094
CNEL:	117	253	545	1,175

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: University Drive  
 Road Segment: California Avenue to Mesa

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 43,321 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,574 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.12	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.12	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.07	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.4	71.3	69.6	63.5	72.1	72.7
Medium Trucks:	66.0	65.3	58.9	57.4	65.8	66.1
Heavy Trucks:	66.4	65.8	56.7	58.0	66.3	66.5
Vehicle Noise:	74.1	73.2	70.1	65.3	73.9	74.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	109	234	505	1,088
CNEL:	117	252	543	1,169

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: University Drive  
 Road Segment: Campus Drive to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,432 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,006 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.37	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.87	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.82	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.8	59.8	68.4	69.0	
Medium Trucks:	62.2	61.6	55.2	53.7	62.1	62.4	
Heavy Trucks:	62.7	62.1	53.0	54.3	62.6	62.8	
Vehicle Noise:	70.4	69.5	66.4	61.6	70.2	70.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	186	400	863
CNEL:	93	200	430	927



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred Project Name: Irvine GP  
 Road Name: University Drive Job Number: 15937  
 Road Segment: SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,332 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,595 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.38	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-17.62	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-21.58	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.5	68.5	66.7	60.6	69.3	69.9
Medium Trucks:	63.1	62.4	56.1	54.5	63.0	63.2
Heavy Trucks:	63.5	62.9	53.9	55.1	63.5	63.6
Vehicle Noise:	71.2	70.3	67.3	62.5	71.0	71.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	126	272	586
CNEL:	63	136	292	629

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred Project Name: Irvine GP  
 Road Name: University Drive Job Number: 15937  
 Road Segment: SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,489 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 2,680 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 50 mph																					
Near/Far Lane Distance: 78 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 84.0 feet	Heavy Trucks: 8.006 <span style="float:right">Grade Adjustment: 0.0</span>																				
Centerline Dist. to Observer: 84.0 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 74.458																				
Left View: -90.0 degrees	Medium Trucks: 74.404																				
Right View: 90.0 degrees	Heavy Trucks: 74.458																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.87	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.37	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.32	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.1	65.3	59.3	67.9	68.5
Medium Trucks:	61.7	61.1	54.7	53.2	61.6	61.9
Heavy Trucks:	62.2	61.6	52.5	53.8	62.1	62.3
Vehicle Noise:	69.9	69.0	65.9	61.1	69.7	70.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	172	371	799
CNEL:	86	185	399	859

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: University Drive  
 Road Segment: San Joaquin to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,608 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,443 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.47	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.77	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.72	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	64.9	58.9	67.5	68.1
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	61.8	61.2	52.1	53.4	61.7	61.9
Vehicle Noise:	69.5	68.6	65.5	60.7	69.3	69.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	349	751
CNEL:	81	174	375	807

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: University Drive  
 Road Segment: Harvard Avenue to San Joaquin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,483 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,432 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.45	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.79	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.74	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	66.7	64.9	58.9	67.5	68.1	
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4	
Heavy Trucks:	61.7	61.2	52.1	53.4	61.7	61.8	
Vehicle Noise:	69.5	68.5	65.5	60.7	69.3	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	348	749
CNEL:	80	173	374	805

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Valley Oak Drive  
 Road Segment: Hawkcreek to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,484 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,112 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.95	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.18	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.14	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.0	64.9	63.2	57.1	65.7	66.4	
Medium Trucks:	59.6	58.9	52.5	51.0	59.5	59.7	
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1	
Vehicle Noise:	67.7	66.8	63.7	59.0	67.5	68.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	92	198	426
CNEL:	46	99	213	458

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Valley Oak Drive  
 Road Segment: Irvine Center Drive to Oak Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,004 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 908 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.83	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-20.07	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-24.02	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.1	66.0	64.3	58.2	66.8	67.4	
Medium Trucks:	60.7	60.0	53.6	52.1	60.5	60.8	
Heavy Trucks:	61.1	60.5	51.4	52.7	61.0	61.2	
Vehicle Noise:	68.8	67.9	64.8	60.0	68.6	69.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	87	187	402
CNEL:	43	93	201	432

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Valley Oak Drive  
 Road Segment: Barranca Parkway to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,125 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 835 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-20.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-24.38	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.8	63.7	61.9	55.9	64.5	65.1
Medium Trucks:	58.3	57.7	51.3	49.8	58.2	58.4
Heavy Trucks:	58.7	58.2	49.1	50.4	58.7	58.9
Vehicle Noise:	66.5	65.5	62.5	57.7	66.3	66.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	164	352
CNEL:	38	82	176	378

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Valley Oak Drive  
 Road Segment: Alton Parkway to Hawkcreek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,517 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 538 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.30	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.9	61.8	60.0	54.0	62.6	63.2	
Medium Trucks:	56.4	55.7	49.4	47.8	56.3	56.5	
Heavy Trucks:	56.8	56.2	47.2	48.5	56.8	56.9	
Vehicle Noise:	64.5	63.6	60.6	55.8	64.4	64.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	57	122	263
CNEL:	28	61	131	282



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Marriott to Morse Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,440 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,841 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.58	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.61	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	66.0	59.9	68.5	69.1
Medium Trucks:	62.6	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	70.6	69.7	66.6	61.9	70.4	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	310	669
CNEL:	72	155	333	717

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Michelson Drive to Quartz

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 33,121 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,732 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.41	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.82	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.78	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.6	65.8	59.7	68.4	69.0
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5
Heavy Trucks:	63.2	62.6	53.6	54.9	63.2	63.3
Vehicle Noise:	70.5	69.6	66.4	61.7	70.3	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	140	302	652
CNEL:	70	151	324	699

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,658 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,694 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.35	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.88	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.84	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.7	59.7	68.3	68.9
Medium Trucks:	62.3	61.7	55.3	53.7	62.2	62.4
Heavy Trucks:	63.2	62.6	53.5	54.8	63.1	63.3
Vehicle Noise:	70.4	69.5	66.3	61.7	70.2	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	139	300	646
CNEL:	69	149	321	692

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,666 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,355 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 70.413				
Road Grade: 0.0%		Medium Trucks: 70.356				
Left View: -90.0 degrees		Heavy Trucks: 70.413				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.31	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.93	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	84.25	-17.89	-2.33	-1.20	-5.25	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.2	65.4	59.3	68.0	68.6
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.8	62.2	53.2	54.5	62.8	62.9
Vehicle Noise:	70.1	69.2	66.0	61.3	69.9	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	342	736
CNEL:	79	170	366	789

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Main Street to Anchor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,991 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,639 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.97	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.93	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.6	59.6	68.2	68.8
Medium Trucks:	62.2	61.6	55.2	53.7	62.1	62.4
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	70.3	69.4	66.3	61.6	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	137	296	637
CNEL:	68	147	317	683

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Anchor to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 30,891 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,549 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.08	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.3	65.5	59.4	68.1	68.7
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2
Heavy Trucks:	62.9	62.3	53.3	54.6	62.9	63.0
Vehicle Noise:	70.2	69.3	66.1	61.4	70.0	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	134	289	622
CNEL:	67	144	310	667

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Morse to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,382 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,424 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.89	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.30	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.3	59.2	67.8	68.5
Medium Trucks:	61.9	61.2	54.8	53.3	61.7	62.0
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	69.9	69.0	65.9	61.2	69.8	70.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	279	602
CNEL:	65	139	300	645

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Martin to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,189 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,078 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.01	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.97	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.4	66.4	64.6	58.6	67.2	67.8	
Medium Trucks:	61.2	60.5	54.2	52.6	61.1	61.3	
Heavy Trucks:	62.0	61.5	52.4	53.7	62.0	62.1	
Vehicle Noise:	69.3	68.4	65.2	60.5	69.1	69.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	117	252	543
CNEL:	58	125	270	582



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Campus Drive to Martin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,686 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,037 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.06	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.4	66.3	64.5	58.5	67.1	67.7	
Medium Trucks:	61.1	60.4	54.1	52.5	61.0	61.2	
Heavy Trucks:	62.0	61.4	52.3	53.6	61.9	62.1	
Vehicle Noise:	69.2	68.3	65.1	60.5	69.0	69.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	115	249	536
CNEL:	57	124	267	575

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Dupont Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,689 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,037 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.10	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.06	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.3	64.5	58.5	67.1	67.7
Medium Trucks:	61.1	60.4	54.1	52.5	61.0	61.2
Heavy Trucks:	62.0	61.4	52.3	53.6	61.9	62.1
Vehicle Noise:	69.2	68.3	65.1	60.5	69.0	69.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	115	249	536
CNEL:	57	124	267	575

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Jeffrey Road to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,097 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,813 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.70	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.65	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.8	67.7	65.9	59.9	68.5	69.1	
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6	
Heavy Trucks:	63.4	62.8	53.7	55.0	63.3	63.5	
Vehicle Noise:	70.6	69.7	66.5	61.9	70.4	70.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	143	308	664
CNEL:	71	154	331	713

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Myford Road to Jamboree Road SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,555 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,861 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.75	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.49	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.45	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	65.9	64.1	58.1	66.7	67.3
Medium Trucks:	60.7	60.0	53.7	52.1	60.6	60.8
Heavy Trucks:	61.6	61.0	51.9	53.2	61.5	61.7
Vehicle Noise:	68.8	67.9	64.7	60.1	68.6	69.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	109	234	504
CNEL:	54	117	251	541

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Walnut Avenue  
 Road Segment: The Mall Street to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,739 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,711 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.38	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.86	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.81	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.6	65.5	63.8	57.7	66.3	66.9	
Medium Trucks:	60.4	59.7	53.3	51.8	60.2	60.5	
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3	
Vehicle Noise:	68.4	67.5	64.4	59.7	68.2	68.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	221	477
CNEL:	51	110	237	512

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Harvard Avenue to The Mall Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,671 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,705 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.83	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.5	63.8	57.7	66.3	66.9
Medium Trucks:	60.3	59.7	53.3	51.8	60.2	60.5
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	68.4	67.5	64.4	59.7	68.2	68.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	221	476
CNEL:	51	110	237	510

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Franciscan Street to Ravenwood Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,169 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,581 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.04	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.20	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.15	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.2	63.4	57.4	66.0	66.6
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1
Heavy Trucks:	60.9	60.3	51.2	52.5	60.8	61.0
Vehicle Noise:	68.1	67.2	64.0	59.4	67.9	68.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	97	210	453
CNEL:	49	105	225	485

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Ravenwood Street to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,154 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,580 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.04	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.20	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.16	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.2	63.4	57.4	66.0	66.6
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1
Heavy Trucks:	60.8	60.3	51.2	52.5	60.8	61.0
Vehicle Noise:	68.1	67.2	64.0	59.4	67.9	68.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	97	210	452
CNEL:	49	105	225	485



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Culver Drive to Franciscan Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,884 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,558 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.03	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.22	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	65.1	63.4	57.3	65.9	66.5
Medium Trucks:	59.9	59.3	52.9	51.4	59.8	60.1
Heavy Trucks:	60.8	60.2	51.2	52.4	60.8	60.9
Vehicle Noise:	68.0	67.1	64.0	59.3	67.8	68.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	97	208	448
CNEL:	48	104	223	481

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Peters Canyon Road to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,274 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,085 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.24	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.00	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.95	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.8	64.7	63.0	56.9	65.5	66.1
Medium Trucks:	59.6	58.9	52.5	51.0	59.4	59.7
Heavy Trucks:	60.4	59.8	50.8	52.0	60.4	60.5
Vehicle Noise:	67.6	66.7	63.6	58.9	67.4	67.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	122	263	568
CNEL:	61	131	283	609

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred Project Name: Irvine GP  
 Road Name: Walnut Avenue Job Number: 15937  
 Road Segment: Jamboree Road NB Off-Ramp to Peters Canyon Road

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,408 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,014 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float:right">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.09	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.15	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.11	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.6	62.8	56.8	65.4	66.0
Medium Trucks:	59.4	58.7	52.4	50.8	59.3	59.5
Heavy Trucks:	60.2	59.7	50.6	51.9	60.2	60.4
Vehicle Noise:	67.5	66.6	63.4	58.8	67.3	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	119	257	554
CNEL:	59	128	276	595

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Yale Avenue to Kazan Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,408 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,189 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.20	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.44	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.39	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.0	64.0	62.2	56.1	64.8	65.4	
Medium Trucks:	58.8	58.1	51.7	50.2	58.7	58.9	
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7	
Vehicle Noise:	66.8	65.9	62.8	58.1	66.7	67.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	81	174	374
CNEL:	40	86	186	401

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Wisteria to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,301 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,180 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.47	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.43	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.0	63.9	62.2	56.1	64.7	65.3	
Medium Trucks:	58.7	58.1	51.7	50.2	58.6	58.9	
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7	
Vehicle Noise:	66.8	65.9	62.8	58.1	66.6	67.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	80	173	372
CNEL:	40	86	185	399

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred Project Name: Irvine GP  
 Road Name: Warner Avenue Job Number: 15937  
 Road Segment: Jamboree Road SB Off-ramp to Construction North

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,075 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,399 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
	VehicleType	Day	Evening	Night	Daily
	Autos:	77.5%	12.9%	9.6%	97.42%
	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%	
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<b>Noise Source Elevations (in feet)</b>				
	Autos:	2.000			
	Medium Trucks:	4.000			
	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos:	57.786			
	Medium Trucks:	57.717			
Heavy Trucks:	57.787				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.85	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.35	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.2	59.2	67.8	68.4
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	62.7	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	69.9	69.0	65.8	61.2	69.7	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	277	597
CNEL:	64	138	297	641

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Warner Avenue  
 Road Segment: Construction North to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,183 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,665 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.93	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.5	65.4	63.6	57.6	66.2	66.8	
Medium Trucks:	60.2	59.6	53.2	51.7	60.1	60.4	
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2	
Vehicle Noise:	68.3	67.4	64.3	59.6	68.1	68.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	101	217	468
CNEL:	50	108	233	502

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Warner Avenue  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,998 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,155 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.33	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.52	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.9	63.8	62.1	56.0	64.6	65.2	
Medium Trucks:	58.6	58.0	51.6	50.1	58.5	58.8	
Heavy Trucks:	59.5	58.9	49.9	51.1	59.5	59.6	
Vehicle Noise:	66.7	65.8	62.7	58.0	66.5	67.0	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	170	367
CNEL:	39	85	183	394



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Warner Avenue  
 Road Segment: Santa Ynez to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,117 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 917 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.33	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.52	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.9	62.8	61.1	55.0	63.6	64.2
Medium Trucks:	57.6	57.0	50.6	49.1	57.5	57.8
Heavy Trucks:	58.5	57.9	48.9	50.1	58.5	58.6
Vehicle Noise:	65.7	64.8	61.7	57.0	65.5	66.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	68	146	315
CNEL:	34	73	157	338

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Warner Avenue  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	10,312 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	851 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		57.786		
Left View:	-90.0 degrees	Medium Trucks:		57.717		
Right View:	90.0 degrees	Heavy Trucks:		57.787		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.65	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.89	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.85	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.6	62.5	60.7	54.7	63.3	63.9
Medium Trucks:	57.3	56.6	50.3	48.7	57.2	57.4
Heavy Trucks:	58.2	57.6	48.5	49.8	58.1	58.3
Vehicle Noise:	65.4	64.5	61.3	56.7	65.2	65.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	139	299
CNEL:	32	69	149	321

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: West Yale Loop  
 Road Segment: Alton Parkway to Blue Lake North

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,402 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 776 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.78	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.74	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.7	60.7	58.9	52.8	61.5	62.1	
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8	
Heavy Trucks:	57.0	56.4	47.4	48.6	57.0	57.1	
Vehicle Noise:	63.7	62.8	59.6	55.0	63.5	64.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	232
CNEL:	25	54	115	248

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: West Yale Loop  
 Road Segment: Eagle Run to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,077 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 749 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.70	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.93	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.89	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.6	60.5	58.7	52.7	61.3	61.9	
Medium Trucks:	55.5	54.9	48.5	47.0	55.4	55.7	
Heavy Trucks:	56.9	56.3	47.2	48.5	56.8	57.0	
Vehicle Noise:	63.6	62.7	59.4	54.9	63.4	63.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	49	105	227
CNEL:	24	52	113	243

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: West Yale Loop  
 Road Segment: Thunder Run to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,148 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 755 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.86	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.6	60.5	58.8	52.7	61.3	61.9	
Medium Trucks:	55.6	54.9	48.5	47.0	55.5	55.7	
Heavy Trucks:	56.9	56.3	47.3	48.5	56.9	57.0	
Vehicle Noise:	63.6	62.7	59.4	54.9	63.4	63.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	49	106	228
CNEL:	24	53	113	244

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: West Yale Loop  
 Road Segment: Main Street to Timber Run

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,350 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 606 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.61	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.85	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.81	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.7	59.6	57.8	51.8	60.4	61.0	
Medium Trucks:	54.6	54.0	47.6	46.0	54.5	54.7	
Heavy Trucks:	55.9	55.4	46.3	47.6	55.9	56.1	
Vehicle Noise:	62.7	61.8	58.5	53.9	62.5	62.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	42	91	197
CNEL:	21	45	98	211

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: West Yale Loop  
 Road Segment: Yale Avenue to Shorebird

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,270 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	600 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.85	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.6	59.5	57.8	51.7	60.3	60.9
Medium Trucks:	54.6	53.9	47.5	46.0	54.5	54.7
Heavy Trucks:	55.9	55.3	46.3	47.5	55.9	56.0
Vehicle Noise:	62.6	61.7	58.4	53.9	62.4	62.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	42	91	195
CNEL:	21	45	97	209

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: West Yale Loop  
 Road Segment: Warner Avenue to Stonecreek South

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,777 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 559 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.96	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.20	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.16	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.3	59.2	57.5	51.4	60.0	60.6	
Medium Trucks:	54.3	53.6	47.2	45.7	54.2	54.4	
Heavy Trucks:	55.6	55.0	46.0	47.2	55.6	55.7	
Vehicle Noise:	62.3	61.4	58.1	53.6	62.1	62.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	40	87	187
CNEL:	20	43	93	200



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: West Yale Loop  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,586 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 543 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.09	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.33	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.28	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.2	59.1	57.3	51.3	59.9	60.5	
Medium Trucks:	54.1	53.5	47.1	45.6	54.0	54.3	
Heavy Trucks:	55.5	54.9	45.8	47.1	55.4	55.6	
Vehicle Noise:	62.2	61.3	58.0	53.5	62.0	62.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	85	183
CNEL:	20	42	91	196

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: West Yale Loop  
 Road Segment: Stonecreek North to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 6,484 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 535 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.16	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.35	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.1	59.0	57.3	51.2	59.8	60.5
Medium Trucks:	54.1	53.4	47.0	45.5	54.0	54.2
Heavy Trucks:	55.4	54.8	45.8	47.0	55.4	55.5
Vehicle Noise:	62.1	61.2	57.9	53.4	61.9	62.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	84	181
CNEL:	19	42	90	194

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: West Yale Loop  
 Road Segment: Birdsong to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,405 vehicles	Autos:				15
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):				15
Peak Hour Volume:	528 vehicles	Heavy Trucks (3+ Axles):				15
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.40	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.1	59.0	57.2	51.2	59.8	60.4
Medium Trucks:	54.0	53.4	47.0	45.5	53.9	54.1
Heavy Trucks:	55.3	54.8	45.7	47.0	55.3	55.5
Vehicle Noise:	62.1	61.2	57.9	53.3	61.9	62.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	83	180
CNEL:	19	41	89	192

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Westwood  
 Road Segment: Yorktown to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,072 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	501 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-3.86	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-21.10	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-25.06	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.1	60.0	58.2	52.2	60.8	61.4
Medium Trucks:	55.3	54.6	48.3	46.7	55.2	55.4
Heavy Trucks:	57.1	56.6	47.5	48.8	57.1	57.3
Vehicle Noise:	63.3	62.4	59.0	54.6	63.1	63.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	13	28	61	130
CNEL:	14	30	65	139

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Westwood  
 Road Segment: Bryan Avenue to Leaf

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,762 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 310 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.94	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-23.18	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-27.14	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	59.0	57.9	56.2	50.1	58.7	59.3	
Medium Trucks:	53.2	52.6	46.2	44.6	53.1	53.3	
Heavy Trucks:	55.1	54.5	45.4	46.7	55.0	55.2	
Vehicle Noise:	61.2	60.3	56.9	52.5	61.0	61.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	20	44	95
CNEL:	10	22	47	101

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Yale Avenue  
 Road Segment: Deerfield Avenue to Winvale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,511 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 867 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.57	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-19.81	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-23.76	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.5	65.5	63.7	57.6	66.3	66.9	
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4	
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2	
Vehicle Noise:	68.4	67.5	64.3	59.6	68.2	68.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	131	283
CNEL:	30	65	141	304

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Yale Avenue  
 Road Segment: Hicks Canyon Drive to Meadowood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,814 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 645 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.86	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-21.10	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-25.05	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.2	64.2	62.4	56.4	65.0	65.6	
Medium Trucks:	59.0	58.3	52.0	50.4	58.9	59.1	
Heavy Trucks:	59.8	59.2	50.2	51.5	59.8	59.9	
Vehicle Noise:	67.1	66.2	63.0	58.3	66.9	67.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	232
CNEL:	25	54	116	249

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Yale Avenue  
 Road Segment: Walnut Avenue to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,547 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,200 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 32.140 Medium Trucks: 32.016 Heavy Trucks: 32.141																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.16	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-18.40	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	84.25	-22.35	2.78	-1.20	-5.56	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.8	66.0	60.0	68.6	69.2
Medium Trucks:	62.7	62.0	55.6	54.1	62.5	62.8
Heavy Trucks:	63.5	62.9	53.9	55.1	63.5	63.6
Vehicle Noise:	70.7	69.8	66.7	62.0	70.5	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	93	201	433
CNEL:	46	100	216	465



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Yale Avenue  
 Road Segment: Roosevelt to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,133 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,166 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.48	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	63.9	62.1	56.0	64.7	65.3
Medium Trucks:	58.7	58.0	51.7	50.1	58.6	58.8
Heavy Trucks:	59.5	58.9	49.9	51.2	59.5	59.6
Vehicle Noise:	66.8	65.9	62.7	58.0	66.6	67.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	80	171	369
CNEL:	40	85	184	396

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Yale Avenue  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,725 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,132 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.41	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.61	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.8	63.7	62.0	55.9	64.5	65.1
Medium Trucks:	58.6	57.9	51.5	50.0	58.4	58.7
Heavy Trucks:	59.4	58.8	49.8	51.0	59.4	59.5
Vehicle Noise:	66.6	65.7	62.6	57.9	66.4	66.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	168	362
CNEL:	39	84	180	389

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Yale Avenue  
 Road Segment: West Yale Loop to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,926 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 984 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.22	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.1	61.4	55.3	63.9	64.5
Medium Trucks:	58.0	57.3	50.9	49.4	57.8	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.0	65.1	62.0	57.3	65.8	66.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	330
CNEL:	35	76	164	354

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Yale Avenue  
 Road Segment: Winvale Avenue to Karen Ann Lane

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,310 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 851 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.65	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.89	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.85	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.6	62.5	60.7	54.7	63.3	63.9	
Medium Trucks:	57.3	56.6	50.3	48.7	57.2	57.4	
Heavy Trucks:	58.2	57.6	48.5	49.8	58.1	58.3	
Vehicle Noise:	65.4	64.5	61.3	56.7	65.2	65.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	139	299
CNEL:	32	69	149	321

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Preferred  
 Road Name: Yale Avenue  
 Road Segment: Karen Ann Lane to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,310 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 851 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.65	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.89	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.85	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.6	62.5	60.7	54.7	63.3	63.9
Medium Trucks:	57.3	56.6	50.3	48.7	57.2	57.4
Heavy Trucks:	58.2	57.6	48.5	49.8	58.1	58.3
Vehicle Noise:	65.4	64.5	61.3	56.7	65.2	65.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	139	299
CNEL:	32	69	149	321

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Yale Avenue  
 Road Segment: Trabuco Road to Southwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,111 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 834 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.74	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.93	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.5	62.4	60.6	54.6	63.2	63.8	
Medium Trucks:	57.2	56.6	50.2	48.7	57.1	57.3	
Heavy Trucks:	58.1	57.5	48.5	49.7	58.1	58.2	
Vehicle Noise:	65.3	64.4	61.3	56.6	65.1	65.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	137	295
CNEL:	32	68	147	317

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Yale Avenue  
 Road Segment: Southwood to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,802 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 809 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.87	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.07	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.3	62.3	60.5	54.5	63.1	63.7	
Medium Trucks:	57.1	56.4	50.1	48.5	57.0	57.2	
Heavy Trucks:	57.9	57.4	48.3	49.6	57.9	58.0	
Vehicle Noise:	65.2	64.3	61.1	56.4	65.0	65.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	62	134	289
CNEL:	31	67	144	310

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Yale Avenue  
 Road Segment: Northwood to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,152 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 755 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.41	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.37	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.0	62.0	60.2	54.2	62.8	63.4	
Medium Trucks:	56.8	56.1	49.8	48.2	56.7	56.9	
Heavy Trucks:	57.6	57.1	48.0	49.3	57.6	57.8	
Vehicle Noise:	64.9	64.0	60.8	56.1	64.7	65.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	60	128	276
CNEL:	30	64	138	297



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Yale Avenue  
 Road Segment: Bryan Avenue to Monticello

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,918 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 736 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.48	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.9	61.9	60.1	54.0	62.7	63.3	
Medium Trucks:	56.7	56.0	49.7	48.1	56.6	56.8	
Heavy Trucks:	57.5	56.9	47.9	49.2	57.5	57.6	
Vehicle Noise:	64.8	63.9	60.7	56.0	64.6	65.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	59	126	272
CNEL:	29	63	135	291

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Yale Avenue  
 Road Segment: Irvine Boulevard to Park Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,463 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 616 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.06	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.30	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.25	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.2	61.1	59.3	53.3	61.9	62.5	
Medium Trucks:	55.9	55.2	48.9	47.3	55.8	56.0	
Heavy Trucks:	56.8	56.2	47.1	48.4	56.7	56.9	
Vehicle Noise:	64.0	63.1	59.9	55.3	63.8	64.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	112	241
CNEL:	26	56	120	259

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Yale Avenue  
 Road Segment: University Drive to Royce

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,940 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 325 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-6.83	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	79.45	-24.07	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	84.25	-28.03	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.3	60.3	58.5	52.5	61.1	61.7
Medium Trucks:	55.1	54.4	48.1	46.5	55.0	55.2
Heavy Trucks:	55.9	55.3	46.3	47.6	55.9	56.0
Vehicle Noise:	63.2	62.3	59.1	54.4	63.0	63.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	79	170
CNEL:	18	39	85	183

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Preferred  
 Road Name: Yale Court  
 Road Segment: Arborwood to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,427 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 530 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-2.15	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-19.39	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-23.35	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.2	56.2	54.4	48.3	57.0	57.6
Medium Trucks:	52.1	51.4	45.0	43.5	51.9	52.2
Heavy Trucks:	55.3	54.7	45.6	46.9	55.2	55.4
Vehicle Noise:	60.1	59.3	55.4	51.4	59.9	60.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	80
CNEL:	8	18	39	85

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Ada  
 Road Segment: Barranca Parway to Marine Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,050 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,902 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.35	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-15.89	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-19.84	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.4	65.7	59.6	68.2	68.8	
Medium Trucks:	62.5	61.8	55.4	53.9	62.4	62.6	
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9	
Vehicle Noise:	70.5	69.6	66.3	61.8	70.3	70.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	85	183	394
CNEL:	42	91	196	422

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Ada  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,284 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,581 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.68	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-14.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-18.52	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.9	65.9	64.1	58.1	66.7	67.3
Medium Trucks:	60.9	60.2	53.9	52.3	60.8	61.0
Heavy Trucks:	62.2	61.6	52.6	53.9	62.2	62.3
Vehicle Noise:	69.0	68.1	64.8	60.2	68.8	69.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	111	240	517
CNEL:	55	119	257	554

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Enterprise to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 76,734 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 6,331 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	5.61	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-11.63	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-15.59	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.9	70.8	69.1	63.0	71.7	72.3
Medium Trucks:	65.5	64.8	58.4	56.9	65.4	65.6
Heavy Trucks:	65.9	65.3	56.3	57.5	65.9	66.0
Vehicle Noise:	73.6	72.7	69.6	64.9	73.4	73.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	142	305	658	1,418
CNEL:	152	328	707	1,523

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: I-5 NB Off-Ramp to Technology Drive West

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 80,974 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 6,680 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	5.84	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-11.40	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-15.35	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.6	71.5	69.7	63.7	72.3	72.9
Medium Trucks:	66.1	65.4	59.1	57.5	66.0	66.2
Heavy Trucks:	66.5	65.9	56.9	58.2	66.5	66.6
Vehicle Noise:	74.3	73.3	70.3	65.5	74.1	74.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	149	321	692	1,490
CNEL:	160	345	743	1,601



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: East Yale Loop to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,275 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,663 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.84	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.35	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	67.0	60.9	69.5	70.1
Medium Trucks:	63.4	62.7	56.3	54.8	63.3	63.5
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9
Vehicle Noise:	71.5	70.6	67.5	62.8	71.3	71.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	164	354	763
CNEL:	82	177	380	820

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Gateway Boulevard to Enterprise

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,790 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,860 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.46	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.78	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.74	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.8	68.7	66.9	60.9	69.5	70.1	
Medium Trucks:	63.3	62.7	56.3	54.7	63.2	63.4	
Heavy Trucks:	63.7	63.2	54.1	55.4	63.7	63.9	
Vehicle Noise:	71.5	70.5	67.5	62.7	71.3	71.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	102	220	473	1,019
CNEL:	110	236	508	1,095

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Jeffrey Road to Royal Oak

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,682 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,119 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.85	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.34	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	66.0	59.9	68.5	69.2
Medium Trucks:	62.4	61.7	55.3	53.8	62.3	62.5
Heavy Trucks:	62.8	62.2	53.2	54.4	62.8	62.9
Vehicle Noise:	70.5	69.6	66.5	61.8	70.3	70.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	141	304	655
CNEL:	70	152	327	704

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Daimler Street to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,892 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,054 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.72	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.48	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.2	61.6	55.2	53.7	62.1	62.4
Heavy Trucks:	62.7	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	70.4	69.5	66.4	61.6	70.2	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	138	298	642
CNEL:	69	149	320	689

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,826 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,048 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.70	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.53	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.49	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.2	61.6	55.2	53.7	62.1	62.3
Heavy Trucks:	62.6	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	70.4	69.4	66.4	61.6	70.2	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	138	297	641
CNEL:	69	148	319	688

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: West Yale Loop to Lake Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,661 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,035 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.68	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.52	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.6	65.8	59.7	68.4	69.0
Medium Trucks:	62.2	61.5	55.2	53.6	62.1	62.3
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	70.3	69.4	66.4	61.6	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	137	296	638
CNEL:	69	148	318	685

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Technology Drive West to Ada

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 49,944 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,120 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.74	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.50	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.45	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.5	69.4	67.6	61.6	70.2	70.8	
Medium Trucks:	64.0	63.3	57.0	55.4	63.9	64.1	
Heavy Trucks:	64.4	63.9	54.8	56.1	64.4	64.5	
Vehicle Noise:	72.2	71.2	68.2	63.4	72.0	72.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	108	233	501	1,080
CNEL:	116	250	539	1,160

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Creek Road to East Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,400 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,013 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.63	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.61	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.56	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	68.9
Medium Trucks:	62.2	61.5	55.1	53.6	62.0	62.3
Heavy Trucks:	62.6	62.0	52.9	54.2	62.6	62.7
Vehicle Noise:	70.3	69.4	66.3	61.5	70.1	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	294	633
CNEL:	68	147	316	680



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Red Hill Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,050 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,984 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.67	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.63	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.5	65.7	59.6	68.3	68.9
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	70.2	69.3	66.3	61.5	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	135	291	627
CNEL:	67	145	313	674

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Lake Road to Creek Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,143 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,909 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.40	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.84	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.79	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	61.9	61.3	54.9	53.3	61.8	62.0
Heavy Trucks:	62.3	61.8	52.7	54.0	62.3	62.4
Vehicle Noise:	70.1	69.1	66.1	61.3	69.9	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	284	611
CNEL:	66	141	305	657

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Telemetry to Banting

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,349 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,926 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.44	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.76	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	62.0	61.3	54.9	53.4	61.8	62.1
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5
Vehicle Noise:	70.1	69.2	66.1	61.3	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	285	615
CNEL:	66	142	307	661

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Irvine Boulevard to Commercentre

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 38,497 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,176 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.61	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.63	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.58	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.9	67.9	66.1	60.0	68.7	69.3	
Medium Trucks:	62.5	61.8	55.4	53.9	62.4	62.6	
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0	
Vehicle Noise:	70.6	69.7	66.7	61.9	70.4	70.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	193	415	895
CNEL:	96	207	446	962

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Jenner to Telemetry

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,981 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,896 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.82	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.3	65.5	59.4	68.1	68.7	
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0	
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4	
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	282	608
CNEL:	65	141	303	654

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Irvine Center Drive to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,393 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,250 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.48	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	68.0	66.2	60.1	68.8	69.4
Medium Trucks:	62.6	61.9	55.5	54.0	62.5	62.7
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	70.7	69.8	66.8	62.0	70.5	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	196	422	909
CNEL:	98	210	453	977

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Sand Canyon Avenue to Hospital

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 37,269 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,075 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 47.329				
Road Grade: 0.0%	Medium Trucks: 47.244				
Left View: -90.0 degrees	Heavy Trucks: 47.329				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.47	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.77	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.72	0.25	-1.20	-5.34	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.7	70.7	68.9	62.8	71.5	72.1	
Medium Trucks:	65.3	64.6	58.3	56.7	65.2	65.4	
Heavy Trucks:	65.7	65.1	56.1	57.3	65.7	65.8	
Vehicle Noise:	73.4	72.5	69.5	64.7	73.2	73.7	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	212	457	984
CNEL:	106	228	491	1,058

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Laguna Canyon Road to Jenner

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,495 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,856 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.96	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.92	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.2	65.4	59.4	68.0	68.6
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	69.9	69.0	66.0	61.2	69.7	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	278	600
CNEL:	64	139	299	644



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred Project Name: Irvine GP  
 Road Name: Alton Parkway Job Number: 15937  
 Road Segment: Technology Drive East to Barranca Pkwy/Muirlands Blvd

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 38,222 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,153 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.58	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.66	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.62	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.8	66.1	60.0	68.6	69.2
Medium Trucks:	62.4	61.8	55.4	53.9	62.3	62.6
Heavy Trucks:	62.9	62.3	53.2	54.5	62.8	63.0
Vehicle Noise:	70.6	69.7	66.6	61.8	70.4	70.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	192	413	891
CNEL:	96	206	444	957

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Royal Oak to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,595 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,782 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.14	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.09	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.2	59.2	67.8	68.4
Medium Trucks:	61.6	61.0	54.6	53.0	61.5	61.7
Heavy Trucks:	62.0	61.5	52.4	53.7	62.0	62.1
Vehicle Noise:	69.8	68.8	65.8	61.0	69.6	70.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	126	271	584
CNEL:	63	135	291	627

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Banting to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,170 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,746 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.23	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.18	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	66.9	65.1	59.1	67.7	68.3
Medium Trucks:	61.5	60.9	54.5	53.0	61.4	61.7
Heavy Trucks:	62.0	61.4	52.3	53.6	61.9	62.1
Vehicle Noise:	69.7	68.7	65.7	60.9	69.5	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	124	267	576
CNEL:	62	133	287	619

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred	Project Name: Irvine GP
Road Name: Alton Parkway	Job Number: 15937
Road Segment: Barranca Pkwy/Muirlands Blvd to Jeronimo Road	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 33,780 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,787 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.04	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.20	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.15	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0
Heavy Trucks:	62.3	61.7	52.7	54.0	62.3	62.4
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	381	820
CNEL:	88	190	409	881

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Ada to Technology Drive East

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,965 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,802 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.07	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.17	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.13	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.3	65.5	59.5	68.1	68.7	
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.1	
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5	
Vehicle Noise:	70.1	69.1	66.1	61.3	69.9	70.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	382	823
CNEL:	88	191	411	885

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,836 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,636 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.51	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.46	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.6	64.9	58.8	67.4	68.0
Medium Trucks:	61.3	60.6	54.2	52.7	61.1	61.4
Heavy Trucks:	61.7	61.1	52.0	53.3	61.7	61.8
Vehicle Noise:	69.4	68.5	65.4	60.6	69.2	69.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	119	256	552
CNEL:	59	128	275	593

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Jeronimo Road to Hughes

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,395 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,590 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.72	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.51	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.47	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	67.0	65.2	59.1	67.8	68.4
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	69.7	68.8	65.8	61.0	69.5	70.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	168	363	781
CNEL:	84	181	390	839

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Hughes to Morgan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,715 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,451 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.49	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.75	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.71	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.7	65.0	58.9	67.5	68.1
Medium Trucks:	61.4	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	69.5	68.6	65.5	60.7	69.3	69.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	350	753
CNEL:	81	174	376	809



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Morgan to Toledo Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,095 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,070 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.75	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.49	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.44	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.0	64.2	58.2	66.8	67.4
Medium Trucks:	60.6	59.9	53.6	52.0	60.5	60.7
Heavy Trucks:	61.0	60.5	51.4	52.7	61.0	61.1
Vehicle Noise:	68.8	67.8	64.8	60.0	68.6	69.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	145	312	673
CNEL:	72	156	336	723

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: San Marino to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,692 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,120 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.85	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.38	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.34	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.1	64.3	58.3	66.9	67.5
Medium Trucks:	60.7	60.1	53.7	52.1	60.6	60.8
Heavy Trucks:	61.1	60.6	51.5	52.8	61.1	61.2
Vehicle Noise:	68.9	67.9	64.9	60.1	68.7	69.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	147	317	684
CNEL:	73	158	341	734

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Jamboree Road to Murphy Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,799 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,128 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.87	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.37	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.32	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.1	64.3	58.3	66.9	67.5
Medium Trucks:	60.7	60.1	53.7	52.2	60.6	60.9
Heavy Trucks:	61.2	60.6	51.5	52.8	61.1	61.3
Vehicle Noise:	68.9	68.0	64.9	60.1	68.7	69.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	148	318	685
CNEL:	74	159	342	736

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Hospital to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,005 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,063 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.74	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.50	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.46	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.0	68.9	67.2	61.1	69.7	70.3	
Medium Trucks:	63.6	62.9	56.5	55.0	63.4	63.7	
Heavy Trucks:	64.0	63.4	54.4	55.6	64.0	64.1	
Vehicle Noise:	71.7	70.8	67.7	62.9	71.5	72.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	163	350	754
CNEL:	81	175	376	811

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,016 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,981 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.56	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.68	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.63	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.8	67.0	60.9	69.6	70.2
Medium Trucks:	63.4	62.7	56.4	54.8	63.3	63.5
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9
Vehicle Noise:	71.5	70.6	67.6	62.8	71.3	71.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	158	341	734
CNEL:	79	170	366	789

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Murphy Avenue to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,679 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,036 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.68	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.56	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.52	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.0	65.9	64.2	58.1	66.7	67.3	
Medium Trucks:	60.5	59.9	53.5	52.0	60.4	60.7	
Heavy Trucks:	61.0	60.4	51.3	52.6	60.9	61.1	
Vehicle Noise:	68.7	67.8	64.7	59.9	68.5	68.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	143	309	665
CNEL:	71	154	332	715

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Foster to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,362 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,927 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.44	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.80	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.75	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4
Heavy Trucks:	60.7	60.1	51.1	52.4	60.7	60.8
Vehicle Noise:	68.4	67.5	64.5	59.7	68.2	68.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	138	298	642
CNEL:	69	149	320	689

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Fairbanks to Foster

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,132 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,826 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.03	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.99	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.5	65.4	63.7	57.6	66.3	66.9	
Medium Trucks:	60.1	59.4	53.0	51.5	60.0	60.2	
Heavy Trucks:	60.5	59.9	50.9	52.1	60.5	60.6	
Vehicle Noise:	68.2	67.3	64.2	59.5	68.0	68.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	62	133	287	619
CNEL:	66	143	309	665



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Toledo Way to Berteau

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,840 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,802 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.05	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.4	63.6	57.6	66.2	66.8
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1
Heavy Trucks:	60.4	59.8	50.8	52.1	60.4	60.5
Vehicle Noise:	68.1	67.2	64.2	59.4	68.0	68.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	285	613
CNEL:	66	142	306	659

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Pacifica to Meridian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,898 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,889 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.35	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.88	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.84	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.8	60.7	69.4	70.0
Medium Trucks:	63.2	62.5	56.1	54.6	63.1	63.3
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7
Vehicle Noise:	71.3	70.4	67.3	62.6	71.1	71.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	153	330	711
CNEL:	76	165	355	764

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Bertea to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,315 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,758 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.04	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.20	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.15	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.3	63.5	57.5	66.1	66.7
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0
Heavy Trucks:	60.3	59.7	50.7	52.0	60.3	60.4
Vehicle Noise:	68.0	67.1	64.1	59.3	67.8	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	280	604
CNEL:	65	140	301	648

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Meridian to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,652 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,704 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.09	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.33	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.29	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	65.1	63.4	57.3	66.0	66.6
Medium Trucks:	59.8	59.1	52.7	51.2	59.7	59.9
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3
Vehicle Noise:	67.9	67.0	63.9	59.2	67.7	68.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	127	274	591
CNEL:	63	137	295	635

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Paseo Westpark to San Marino

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,780 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,714 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.07	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.31	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.26	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.2	65.2	63.4	57.4	66.0	66.6	
Medium Trucks:	59.8	59.1	52.8	51.2	59.7	59.9	
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3	
Vehicle Noise:	67.9	67.0	64.0	59.2	67.7	68.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	128	275	593
CNEL:	64	137	296	638

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Alton Parkway  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,451 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,522 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.58	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.82	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-21.78	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.7	62.9	56.8	65.5	66.1
Medium Trucks:	59.3	58.6	52.3	50.7	59.2	59.4
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8
Vehicle Noise:	67.4	66.5	63.5	58.7	67.2	67.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	254	548
CNEL:	59	127	273	589

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Astor  
 Road Segment: Lynx to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,506 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,609 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 37.138				
Road Grade: 0.0%		Medium Trucks: 37.030				
Left View: -90.0 degrees		Heavy Trucks: 37.139				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	1.88	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-15.36	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-19.32	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.2	61.4	55.4	64.0	64.6
Medium Trucks:	58.8	58.1	51.7	50.2	58.7	58.9
Heavy Trucks:	61.2	60.7	51.6	52.9	61.2	61.3
Vehicle Noise:	66.8	65.9	62.3	58.1	66.6	67.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	48	103	222
CNEL:	24	51	110	237

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Astor  
 Road Segment: Cadence to Lynx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,820 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,223 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	0.68	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-16.56	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-20.51	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.1	62.0	60.2	54.2	62.8	63.4	
Medium Trucks:	57.6	56.9	50.5	49.0	57.5	57.7	
Heavy Trucks:	60.0	59.5	50.4	51.7	60.0	60.2	
Vehicle Noise:	65.6	64.7	61.1	56.9	65.4	65.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	40	86	185
CNEL:	20	43	92	197



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bake Parkway  
 Road Segment: I-5 NB Off-Ramp to Rockfield Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 95,791 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 7,903 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	6.57	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-10.67	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-14.62	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	74.7	73.6	71.8	65.8	74.4	75.0	
Medium Trucks:	68.2	67.6	61.2	59.7	68.1	68.3	
Heavy Trucks:	68.6	68.1	59.0	60.3	68.6	68.8	
Vehicle Noise:	76.4	75.4	72.4	67.6	76.2	76.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	257	555	1,195	2,574
CNEL:	277	596	1,284	2,766

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bake Parkway  
 Road Segment: Muirlands Boulevard to Jeronimo Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 61,823 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,100 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.67	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-12.57	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-16.53	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.0	69.9	68.1	62.1	70.7	71.3
Medium Trucks:	64.5	63.9	57.5	56.0	64.4	64.7
Heavy Trucks:	65.0	64.4	55.3	56.6	64.9	65.1
Vehicle Noise:	72.7	71.8	68.7	63.9	72.5	72.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	264	570	1,227
CNEL:	132	284	612	1,319

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bake Parkway  
 Road Segment: Rockfield Boulevard to Muirlands Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 66,605 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,495 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos: 77.5% 12.9% 9.6% 97.42% Medium Trucks: 84.8% 4.9% 10.3% 1.84% Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
	<b>Noise Source Elevations (in feet)</b>				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0				
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.99	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-12.25	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-16.20	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.1	72.0	70.3	64.2	72.8	73.4	
Medium Trucks:	66.7	66.0	59.6	58.1	66.5	66.8	
Heavy Trucks:	67.1	66.5	57.4	58.7	67.0	67.2	
Vehicle Noise:	74.8	73.9	70.8	66.0	74.6	75.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	202	435	938	2,021
CNEL:	217	468	1,008	2,171

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bake Parkway  
 Road Segment: Jeronimo Road to Toledo Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 49,866 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,114 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.73	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.50	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.46	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	69.0	67.2	61.2	69.8	70.4
Medium Trucks:	63.6	62.9	56.6	55.0	63.5	63.7
Heavy Trucks:	64.0	63.4	54.4	55.6	64.0	64.1
Vehicle Noise:	71.7	70.8	67.8	63.0	71.5	72.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	229	494	1,064
CNEL:	114	246	530	1,143

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bake Parkway  
 Road Segment: Toledo Way to Cromwell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 46,021 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,797 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.39	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.85	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.81	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.7	68.6	66.9	60.8	69.4	70.0	
Medium Trucks:	63.3	62.6	56.2	54.7	63.1	63.4	
Heavy Trucks:	63.7	63.1	54.0	55.3	63.7	63.8	
Vehicle Noise:	71.4	70.5	67.4	62.6	71.2	71.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	217	468	1,008
CNEL:	108	233	503	1,083

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bake Parkway  
 Road Segment: Cromwell to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,675 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,768 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.35	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.89	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.84	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.6	66.8	60.8	69.4	70.0
Medium Trucks:	63.2	62.5	56.2	54.6	63.1	63.3
Heavy Trucks:	63.6	63.1	54.0	55.3	63.6	63.7
Vehicle Noise:	71.4	70.4	67.4	62.6	71.2	71.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	466	1,003
CNEL:	108	232	500	1,078

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Bake Parkway  
 Road Segment: Research Drive to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,545 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,355 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.31	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.93	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.88	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.6	64.8	58.7	67.4	68.0
Medium Trucks:	61.2	60.5	54.1	52.6	61.1	61.3
Heavy Trucks:	61.6	61.0	52.0	53.2	61.6	61.7
Vehicle Noise:	69.3	68.4	65.4	60.6	69.1	69.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	158	340	733
CNEL:	79	170	366	788

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bake Parkway  
 Road Segment: Irvine Center Drive to Research Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,944 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 820 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.27	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-20.51	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-24.46	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.0	62.0	60.2	54.2	62.8	63.4	
Medium Trucks:	56.6	55.9	49.6	48.0	56.5	56.7	
Heavy Trucks:	57.0	56.4	47.4	48.6	57.0	57.1	
Vehicle Noise:	64.7	63.8	60.8	56.0	64.5	65.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	169	363
CNEL:	39	84	181	390



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Bake Parkway  
 Road Segment: Lake Forest Drive to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,379 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	609 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	84.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 74.458				
Road Grade:	0.0%	Medium Trucks: 74.404				
Left View:	-90.0 degrees	Heavy Trucks: 74.458				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.56	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-21.80	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-25.76	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.7	60.7	58.9	52.9	61.5	62.1
Medium Trucks:	55.3	54.6	48.3	46.7	55.2	55.4
Heavy Trucks:	55.7	55.1	46.1	47.3	55.7	55.8
Vehicle Noise:	63.4	62.5	59.5	54.7	63.2	63.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	138	298
CNEL:	32	69	148	320

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Banting  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,367 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 443 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-4.40	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-21.64	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-25.59	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	57.7	56.6	54.8	48.8	57.4	58.0	
Medium Trucks:	51.9	51.2	44.8	43.3	51.8	52.0	
Heavy Trucks:	53.7	53.1	44.1	45.4	53.7	53.8	
Vehicle Noise:	59.9	59.0	55.6	51.2	59.7	60.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	13	28	60	129
CNEL:	14	30	64	137

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Pacifica to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,481 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,845 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.72	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-15.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.48	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.3	70.2	68.4	62.4	71.0	71.6
Medium Trucks:	64.6	64.0	57.6	56.1	64.5	64.8
Heavy Trucks:	64.7	64.1	55.1	56.3	64.7	64.8
Vehicle Noise:	72.8	71.9	68.9	64.1	72.6	73.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	94	202	434	936
CNEL:	101	217	467	1,007

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Banting to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,533 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,601 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.33	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-15.91	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.86	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.9	69.8	68.0	62.0	70.6	71.2
Medium Trucks:	64.3	63.6	57.2	55.7	64.1	64.4
Heavy Trucks:	64.3	63.7	54.7	55.9	64.3	64.4
Vehicle Noise:	72.4	71.5	68.6	63.7	72.2	72.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	190	409	882
CNEL:	95	204	440	948

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: I-5 HOV Ramp to Technology Drive West

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,208 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,575 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos: 77.5% 12.9% 9.6% 97.42% Medium Trucks: 84.8% 4.9% 10.3% 1.84% Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
	<b>Noise Source Elevations (in feet)</b>				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0				
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-15.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.91	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.8	69.8	68.0	61.9	70.6	71.2	
Medium Trucks:	64.2	63.5	57.2	55.6	64.1	64.3	
Heavy Trucks:	64.2	63.7	54.6	55.9	64.2	64.3	
Vehicle Noise:	72.4	71.5	68.5	63.6	72.2	72.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	189	406	876
CNEL:	94	203	437	942

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Technology Drive West to Ada

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,730 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,535 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.02	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-19.98	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.7	67.9	61.9	70.5	71.1
Medium Trucks:	64.1	63.5	57.1	55.6	64.0	64.3
Heavy Trucks:	64.2	63.6	54.6	55.8	64.2	64.3
Vehicle Noise:	72.3	71.4	68.4	63.6	72.1	72.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	187	402	867
CNEL:	93	201	433	932

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Irvine Center Drive to I-5 HOV Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,070 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,398 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.98	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.22	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	69.4	67.7	61.6	70.2	70.9
Medium Trucks:	63.9	63.2	56.9	55.3	63.8	64.0
Heavy Trucks:	63.9	63.3	54.3	55.6	63.9	64.0
Vehicle Noise:	72.1	71.2	68.2	63.3	71.9	72.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	180	388	835
CNEL:	90	194	417	898

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,213 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,328 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.85	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.35	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.4	69.3	67.6	61.5	70.1	70.7
Medium Trucks:	63.8	63.1	56.7	55.2	63.7	63.9
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9
Vehicle Noise:	72.0	71.0	68.1	63.2	71.8	72.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	176	380	819
CNEL:	88	190	409	881



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: East Yale Loop to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,535 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,272 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.74	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.45	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.2	67.4	61.4	70.0	70.6
Medium Trucks:	63.7	63.0	56.6	55.1	63.6	63.8
Heavy Trucks:	63.7	63.1	54.1	55.3	63.7	63.8
Vehicle Noise:	71.9	70.9	68.0	63.1	71.7	72.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	374	805
CNEL:	87	187	402	866

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: West Yale Loop to Lake Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,880 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,218 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.64	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.60	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.56	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	69.1	67.3	61.3	69.9	70.5
Medium Trucks:	63.6	62.9	56.5	55.0	63.4	63.7
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7
Vehicle Noise:	71.7	70.8	67.9	63.0	71.5	72.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	171	368	793
CNEL:	85	184	396	853

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Ada to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,022 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,229 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.58	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.53	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	69.1	67.4	61.3	69.9	70.5
Medium Trucks:	63.6	62.9	56.6	55.0	63.5	63.7
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7
Vehicle Noise:	71.8	70.8	67.9	63.0	71.6	72.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	171	369	795
CNEL:	86	184	397	856

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Lake Road to Creek Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,130 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,073 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.89	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.85	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	68.8	67.0	61.0	69.6	70.2
Medium Trucks:	63.3	62.6	56.2	54.7	63.2	63.4
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4
Vehicle Noise:	71.5	70.5	67.6	62.7	71.3	71.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	163	352	758
CNEL:	82	176	378	815

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Red Hill Avenue to Armstrong Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 48,369 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,990 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.19	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-14.05	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-18.01	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.9	71.8	70.0	64.0	72.6	73.2
Medium Trucks:	66.3	65.6	59.2	57.7	66.1	66.4
Heavy Trucks:	66.3	65.7	56.7	57.9	66.3	66.4
Vehicle Noise:	74.4	73.5	70.6	65.7	74.2	74.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	192	413	889	1,916
CNEL:	206	444	957	2,061

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Discovery/Herchel to Banting

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,373 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,011 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.03	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.98	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.7	66.9	60.9	69.5	70.1
Medium Trucks:	63.1	62.5	56.1	54.6	63.0	63.3
Heavy Trucks:	63.2	62.6	53.5	54.8	63.1	63.3
Vehicle Noise:	71.3	70.4	67.4	62.6	71.1	71.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	345	743
CNEL:	80	172	371	799

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Lyon to East Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,735 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,958 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.14	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.10	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.6	66.8	60.7	69.4	70.0
Medium Trucks:	63.0	62.4	56.0	54.4	62.9	63.1
Heavy Trucks:	63.1	62.5	53.4	54.7	63.0	63.2
Vehicle Noise:	71.2	70.3	67.3	62.5	71.0	71.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	339	730
CNEL:	78	169	364	785

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Creek Road to Lyon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,344 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,926 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.21	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.17	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.7	60.7	69.3	69.9
Medium Trucks:	63.0	62.3	55.9	54.4	62.8	63.1
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	71.1	70.2	67.3	62.4	70.9	71.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	72	155	335	721
CNEL:	78	167	360	776



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 41,730 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,443 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.55	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.69	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.65	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.8	68.0	62.0	70.6	71.2
Medium Trucks:	64.2	63.6	57.2	55.7	64.1	64.3
Heavy Trucks:	64.3	63.7	54.6	55.9	64.2	64.4
Vehicle Noise:	72.4	71.5	68.5	63.7	72.2	72.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	112	242	522	1,124
CNEL:	121	261	561	1,209

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Sand Canyon Avenue to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,369 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,680 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.81	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.76	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.0	67.9	66.1	60.1	68.7	69.3	
Medium Trucks:	62.4	61.7	55.3	53.8	62.2	62.5	
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5	
Vehicle Noise:	70.5	69.6	66.7	61.8	70.3	70.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	142	306	659
CNEL:	71	153	329	709

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Armstrong Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,026 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,220 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.26	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.98	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.94	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	69.5	67.7	61.7	70.3	70.9
Medium Trucks:	63.9	63.3	56.9	55.4	63.8	64.1
Heavy Trucks:	64.0	63.4	54.3	55.6	64.0	64.1
Vehicle Noise:	72.1	71.2	68.2	63.4	71.9	72.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	108	232	499	1,075
CNEL:	116	249	537	1,157

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,863 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,639 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.68	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.92	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.87	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.9	67.8	66.0	60.0	68.6	69.2	
Medium Trucks:	62.2	61.6	55.2	53.7	62.1	62.4	
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4	
Vehicle Noise:	70.4	69.5	66.6	61.7	70.2	70.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	140	301	648
CNEL:	70	150	323	697

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Jamboree Road to Construction Circle

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,487 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,598 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.32	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.91	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.87	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.1	66.4	60.3	68.9	69.6
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	62.6	62.0	53.0	54.3	62.6	62.7
Vehicle Noise:	70.8	69.9	66.9	62.0	70.6	71.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	426	919
CNEL:	99	213	459	988

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Santa Rosa to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,840 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,544 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.23	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.01	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.96	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.1	66.3	60.2	68.9	69.5
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6
Heavy Trucks:	62.5	62.0	52.9	54.2	62.5	62.6
Vehicle Noise:	70.7	69.8	66.8	61.9	70.5	71.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	195	421	906
CNEL:	97	210	452	975

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: FedEx to Discovery/Herchel

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,901 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,477 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.13	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.37	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.32	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	61.8	61.2	52.2	53.5	61.8	61.9
Vehicle Noise:	70.0	69.1	66.1	61.2	69.8	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	281	604
CNEL:	65	140	302	650

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Jeffrey Road to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,889 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,476 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.13	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.37	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.33	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	61.8	61.2	52.2	53.5	61.8	61.9
Vehicle Noise:	70.0	69.1	66.1	61.2	69.8	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	280	604
CNEL:	65	140	302	650



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Laguna Canyon Road to FedEx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,450 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,440 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.43	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.2	65.5	59.4	68.0	68.6
Medium Trucks:	61.7	61.0	54.7	53.1	61.6	61.8
Heavy Trucks:	61.7	61.1	52.1	53.3	61.7	61.8
Vehicle Noise:	69.9	68.9	66.0	61.1	69.7	70.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	128	276	594
CNEL:	64	138	297	639

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Pullman Street to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 37,245 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,073 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.05	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-15.19	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-19.14	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.7	70.7	68.9	62.8	71.5	72.1
Medium Trucks:	65.1	64.4	58.1	56.5	65.0	65.2
Heavy Trucks:	65.1	64.6	55.5	56.8	65.1	65.3
Vehicle Noise:	73.3	72.4	69.4	64.5	73.1	73.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	161	347	747	1,609
CNEL:	173	373	804	1,731

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Construction Circle to Fire Station

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,622 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,279 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.75	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.48	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.44	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.6	67.6	65.8	59.8	68.4	69.0	
Medium Trucks:	62.0	61.4	55.0	53.4	61.9	62.1	
Heavy Trucks:	62.1	61.5	52.4	53.7	62.0	62.2	
Vehicle Noise:	70.2	69.3	66.3	61.5	70.0	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	391	842
CNEL:	91	195	420	906

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Fire Station to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,622 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,279 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.75	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.48	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.44	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.0	61.4	55.0	53.4	61.9	62.1
Heavy Trucks:	62.1	61.5	52.4	53.7	62.0	62.2
Vehicle Noise:	70.2	69.3	66.3	61.5	70.0	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	391	842
CNEL:	91	195	420	906

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Paseo Westpark to Santa Rosa

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,925 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,304 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.80	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.44	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.39	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.9	59.8	68.4	69.0
Medium Trucks:	62.1	61.4	55.0	53.5	62.0	62.2
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	70.3	69.3	66.4	61.5	70.1	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	183	394	848
CNEL:	91	197	423	912

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Barranca Parkway  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,798 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,128 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.46	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.78	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.74	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	61.7	61.1	54.7	53.2	61.6	61.8
Heavy Trucks:	61.8	61.2	52.1	53.4	61.7	61.9
Vehicle Noise:	69.9	69.0	66.0	61.2	69.7	70.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	173	373	804
CNEL:	87	186	402	865

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bay Tree  
 Road Segment: Trabuco Road to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,720 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 224 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-7.35	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-24.59	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-28.54	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	54.7	53.6	51.9	45.8	54.4	55.1	
Medium Trucks:	48.9	48.3	41.9	40.3	48.8	49.0	
Heavy Trucks:	50.8	50.2	41.2	42.4	50.8	50.9	
Vehicle Noise:	56.9	56.1	52.6	48.2	56.8	57.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	18	38	82
CNEL:	9	19	41	87

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Beacon  
 Road Segment: Ridge Valley to Benchmark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,587 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	296 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-5.48	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-22.72	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-26.67	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.9	55.8	54.1	48.0	56.6	57.3
Medium Trucks:	51.4	50.7	44.4	42.8	51.3	51.5
Heavy Trucks:	53.9	53.3	44.3	45.5	53.9	54.0
Vehicle Noise:	59.4	58.6	54.9	50.7	59.2	59.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	15	33	72
CNEL:	8	17	36	77



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Benchmark (LN Street)  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,743 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 144 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-8.61	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-25.85	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-29.81	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	53.8	52.7	50.9	44.9	53.5	54.1	
Medium Trucks:	48.3	47.6	41.2	39.7	48.2	48.4	
Heavy Trucks:	50.7	50.2	41.1	42.4	50.7	50.9	
Vehicle Noise:	56.3	55.4	51.8	47.6	56.1	56.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	10	21	44
CNEL:	5	10	22	47

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bison Avenue  
 Road Segment: SR-73 NB Off-Ramp to California Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,152 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,158 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.39	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.85	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.81	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.5	64.8	58.7	67.3	67.9
Medium Trucks:	61.4	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	69.4	68.5	65.4	60.7	69.2	69.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	120	258	557
CNEL:	60	129	277	597

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bonita Canyon Drive  
 Road Segment: MacArthur Boulevard to SR-73

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,797 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,541 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 75.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	70.413			
Road Grade: 0.0%	Medium Trucks:	70.356			
Left View: -90.0 degrees	Heavy Trucks:	70.413			
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.64	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.60	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-19.55	-2.33	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.2	65.5	59.4	68.0	68.7	
Medium Trucks:	61.9	61.2	54.8	53.3	61.8	62.0	
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4	
Vehicle Noise:	70.0	69.1	66.0	61.3	69.8	70.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	338	728
CNEL:	78	169	363	782

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bonita Canyon Drive  
 Road Segment: Turtle Ridge to Shady Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,746 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,712 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 70.413				
Road Grade: 0.0%	Medium Trucks: 70.356				
Left View: -90.0 degrees	Heavy Trucks: 70.413				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.07	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.31	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-21.27	-2.33	-1.20	-5.25	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.5	63.8	57.7	66.3	66.9
Medium Trucks:	60.2	59.5	53.1	51.6	60.0	60.3
Heavy Trucks:	60.6	60.0	51.0	52.2	60.6	60.7
Vehicle Noise:	68.3	67.4	64.3	59.5	68.1	68.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	121	260	560
CNEL:	60	130	279	601

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bonita Canyon Drive  
 Road Segment: Newport Coast Drive to Turtle Ridge

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,113 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,577 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 70.413				
Road Grade: 0.0%	Medium Trucks: 70.356				
Left View: -90.0 degrees	Heavy Trucks: 70.413				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.43	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.67	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-21.62	-2.33	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.2	65.2	63.4	57.4	66.0	66.6	
Medium Trucks:	59.8	59.1	52.8	51.2	59.7	59.9	
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3	
Vehicle Noise:	67.9	67.0	64.0	59.2	67.7	68.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	246	530
CNEL:	57	123	264	569

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bonita Canyon Drive  
 Road Segment: SR-73 NB Off-Ramp to Newport Coast Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 18,182 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,500 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 75.0 feet Centerline Dist. to Observer: 75.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 70.413 Medium Trucks: 70.356 Heavy Trucks: 70.413																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.65	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-17.89	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-21.84	-2.33	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.0	65.0	63.2	57.1	65.8	66.4	
Medium Trucks:	59.6	58.9	52.6	51.0	59.5	59.7	
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1	
Vehicle Noise:	67.7	66.8	63.8	59.0	67.5	68.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	110	238	513
CNEL:	55	119	256	551

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bosque  
 Road Segment: Cadence to Great Park Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,864 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,061 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	0.07	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-17.17	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-21.13	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.5	61.4	59.6	53.6	62.2	62.8	
Medium Trucks:	57.0	56.3	49.9	48.4	56.8	57.1	
Heavy Trucks:	59.4	58.8	49.8	51.1	59.4	59.5	
Vehicle Noise:	65.0	64.1	60.5	56.3	64.8	65.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	36	78	169
CNEL:	18	39	83	180

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bosque  
 Road Segment: Irvine Boulevard to Benchmark (LN Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 8,621 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 711 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 37.138				
Road Grade: 0.0%	Medium Trucks: 37.030				
Left View: -90.0 degrees	Heavy Trucks: 37.139				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-1.67	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-18.91	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-22.86	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.7	59.7	57.9	51.8	60.5	61.1
Medium Trucks:	55.2	54.6	48.2	46.6	55.1	55.3
Heavy Trucks:	57.7	57.1	48.1	49.3	57.7	57.8
Vehicle Noise:	63.2	62.4	58.7	54.5	63.1	63.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	13	28	60	129
CNEL:	14	30	64	138



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bosque  
 Road Segment: Benchmark to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,923 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 654 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-2.04	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-19.27	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-23.23	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.3	59.3	57.5	51.5	60.1	60.7	
Medium Trucks:	54.9	54.2	47.8	46.3	54.7	55.0	
Heavy Trucks:	57.3	56.7	47.7	49.0	57.3	57.4	
Vehicle Noise:	62.9	62.0	58.4	54.2	62.7	63.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	26	57	122
CNEL:	13	28	60	130

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Bosque  
 Road Segment: Great Park Boulevard to Beacon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1,837 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	152 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-8.39	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-25.62	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-29.58	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.0	52.9	51.2	45.1	53.7	54.3
Medium Trucks:	48.5	47.8	41.5	39.9	48.4	48.6
Heavy Trucks:	51.0	50.4	41.4	42.6	51.0	51.1
Vehicle Noise:	56.5	55.6	52.0	47.8	56.3	56.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	10	21	46
CNEL:	5	11	23	49

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Bosque  
 Road Segment: Beacon to S 5th Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	1,592 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	131 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-9.01	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	73.48	-26.24	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	79.92	-30.20	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.4	52.3	50.5	44.5	53.1	53.7
Medium Trucks:	47.9	47.2	40.9	39.3	47.8	48.0
Heavy Trucks:	50.4	49.8	40.7	42.0	50.3	50.5
Vehicle Noise:	55.9	55.0	51.4	47.2	55.7	56.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	19	42
CNEL:	4	10	21	45

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bryan Avenue  
 Road Segment: Jamboree Road to Market Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,217 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,833 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.68	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.51	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.9	65.8	64.1	58.0	66.6	67.2	
Medium Trucks:	60.7	60.0	53.6	52.1	60.5	60.8	
Heavy Trucks:	61.5	60.9	51.9	53.1	61.5	61.6	
Vehicle Noise:	68.7	67.8	64.7	60.0	68.5	69.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	108	232	499
CNEL:	54	115	249	536

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bryan Avenue  
 Road Segment: Market Place to El Camino Real

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,675 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,788 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.67	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.62	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	64.0	57.9	66.5	67.1
Medium Trucks:	60.5	59.9	53.5	52.0	60.4	60.7
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5
Vehicle Noise:	68.6	67.7	64.6	59.9	68.4	68.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	106	228	491
CNEL:	53	114	245	527

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Bryan Avenue  
 Road Segment: Rubicon to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,708 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,791 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.58	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.66	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.61	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	64.0	57.9	66.5	67.1
Medium Trucks:	60.6	59.9	53.5	52.0	60.4	60.7
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5
Vehicle Noise:	68.6	67.7	64.6	59.9	68.4	68.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	106	228	492
CNEL:	53	114	245	527

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Bryan Avenue  
 Road Segment: El Camino Real to Rubicon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,532 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,776 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.54	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.69	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.65	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	61.4	60.8	51.7	53.0	61.3	61.5
Vehicle Noise:	68.6	67.7	64.5	59.9	68.4	68.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	49	105	227	489
CNEL:	52	113	243	525

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bryan Avenue  
 Road Segment: Eastwood to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,067 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,161 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.30	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.54	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.50	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	63.8	62.1	56.0	64.6	65.3
Medium Trucks:	58.7	58.0	51.6	50.1	58.6	58.8
Heavy Trucks:	59.5	58.9	49.9	51.1	59.5	59.6
Vehicle Noise:	66.7	65.8	62.7	58.0	66.6	67.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	171	368
CNEL:	39	85	183	395



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Bryan Avenue  
 Road Segment: Westwood to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,963 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,069 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.85	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.5	61.7	55.7	64.3	64.9
Medium Trucks:	58.3	57.6	51.3	49.7	58.2	58.4
Heavy Trucks:	59.2	58.6	49.5	50.8	59.1	59.3
Vehicle Noise:	66.4	65.5	62.3	57.7	66.2	66.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	75	162	349
CNEL:	37	81	174	374

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Bryan Avenue  
 Road Segment: Culver Drive to Westwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,769 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,053 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.72	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.96	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.92	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.5	63.4	61.7	55.6	64.2	64.8	
Medium Trucks:	58.2	57.6	51.2	49.7	58.1	58.4	
Heavy Trucks:	59.1	58.5	49.5	50.7	59.1	59.2	
Vehicle Noise:	66.3	65.4	62.3	57.6	66.1	66.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	74	160	345
CNEL:	37	80	172	370

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Bryan Avenue  
 Road Segment: Yale Avenue to Eastwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,526 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,033 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.00	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.4	63.3	61.6	55.5	64.1	64.7
Medium Trucks:	58.2	57.5	51.1	49.6	58.0	58.3
Heavy Trucks:	59.0	58.4	49.4	50.6	59.0	59.1
Vehicle Noise:	66.2	65.3	62.2	57.5	66.0	66.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	73	158	341
CNEL:	37	79	170	366

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Cadence  
 Road Segment: Pusan to Chinon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,014 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	579 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.82	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-21.05	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-25.01	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.3	62.3	60.5	54.4	63.1	63.7
Medium Trucks:	57.3	56.6	50.3	48.7	57.2	57.4
Heavy Trucks:	58.6	58.0	49.0	50.2	58.6	58.7
Vehicle Noise:	65.3	64.4	61.2	56.6	65.2	65.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	38	83	178
CNEL:	19	41	89	191

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Cadence  
 Road Segment: Bosque to Pusan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,558 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 541 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.11	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-21.35	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-25.30	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.0	62.0	60.2	54.2	62.8	63.4	
Medium Trucks:	57.0	56.4	50.0	48.4	56.9	57.1	
Heavy Trucks:	58.3	57.7	48.7	50.0	58.3	58.4	
Vehicle Noise:	65.0	64.2	60.9	56.3	64.9	65.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	79	170
CNEL:	18	39	85	182

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Cadence  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,749 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 392 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.51	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-22.75	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-26.70	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.6	60.6	58.8	52.8	61.4	62.0	
Medium Trucks:	55.6	54.9	48.6	47.0	55.5	55.7	
Heavy Trucks:	56.9	56.3	47.3	48.6	56.9	57.0	
Vehicle Noise:	63.6	62.8	59.5	54.9	63.5	63.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	30	64	137
CNEL:	15	32	68	147

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Cadence  
 Road Segment: Chinon to Merit

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,233 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 267 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-7.18	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-24.42	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-28.37	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.0	58.9	57.1	51.1	59.7	60.3	
Medium Trucks:	54.0	53.3	46.9	45.4	53.8	54.1	
Heavy Trucks:	55.3	54.7	45.6	46.9	55.2	55.4	
Vehicle Noise:	62.0	61.1	57.8	53.3	61.8	62.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	23	49	106
CNEL:	11	25	53	114

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Cadence  
 Road Segment: Merit to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,697 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 140 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-9.98	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-27.22	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-31.17	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.2	56.1	54.3	48.3	56.9	57.5
Medium Trucks:	51.2	50.5	44.1	42.6	51.0	51.3
Heavy Trucks:	52.5	51.9	42.8	44.1	52.4	52.6
Vehicle Noise:	59.2	58.3	55.0	50.5	59.0	59.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	15	32	69
CNEL:	7	16	34	74



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: California Avenue  
 Road Segment: University Drive to Academy Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,919 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,643 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.72	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.48	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.0	63.9	62.2	56.1	64.7	65.3
Medium Trucks:	59.0	58.3	51.9	50.4	58.8	59.1
Heavy Trucks:	60.3	59.7	50.6	51.9	60.3	60.4
Vehicle Noise:	67.0	66.1	62.8	58.3	66.8	67.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	178	383
CNEL:	41	88	190	410

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: California Avenue  
 Road Segment: Campus Drive to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,803 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 809 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.36	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.60	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.56	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.9	60.8	59.1	53.0	61.6	62.2	
Medium Trucks:	55.9	55.2	48.8	47.3	55.8	56.0	
Heavy Trucks:	57.2	56.6	47.6	48.8	57.2	57.3	
Vehicle Noise:	63.9	63.0	59.7	55.2	63.7	64.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	51	111	239
CNEL:	26	55	119	255

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: California Avenue  
 Road Segment: Theory to Bison Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,378 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 774 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.55	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.79	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.75	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.7	60.6	58.9	52.8	61.4	62.1	
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8	
Heavy Trucks:	57.0	56.4	47.4	48.6	57.0	57.1	
Vehicle Noise:	63.7	62.8	59.5	55.0	63.5	64.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	232
CNEL:	25	53	115	248

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Campus Drive  
 Road Segment: Carlson Avenue to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,153 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,405 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 42.814				
Road Grade: 0.0%		Medium Trucks: 42.720				
Left View: -90.0 degrees		Heavy Trucks: 42.814				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.40	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-15.84	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-19.79	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.3	70.3	68.5	62.4	71.1	71.7
Medium Trucks:	64.9	64.2	57.9	56.3	64.8	65.0
Heavy Trucks:	65.3	64.7	55.7	56.9	65.3	65.4
Vehicle Noise:	73.0	72.1	69.0	64.3	72.8	73.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	357	770
CNEL:	83	178	384	827

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Campus Drive  
 Road Segment: University Drive to Bridge Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,999 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,640 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.39	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	66.9	60.9	69.5	70.1
Medium Trucks:	63.3	62.7	56.3	54.8	63.2	63.4
Heavy Trucks:	63.7	63.2	54.1	55.4	63.7	63.9
Vehicle Noise:	71.5	70.5	67.5	62.7	71.3	71.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	163	352	759
CNEL:	82	176	378	815

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Campus Drive  
 Road Segment: Jamboree Road to Carlson Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,629 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,527 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.62	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-15.62	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-19.58	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.7	60.7	69.3	69.9
Medium Trucks:	63.1	62.5	56.1	54.6	63.0	63.3
Heavy Trucks:	63.6	63.0	53.9	55.2	63.5	63.7
Vehicle Noise:	71.3	70.4	67.3	62.5	71.1	71.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	342	737
CNEL:	79	171	367	792

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Campus Drive  
 Road Segment: Stanford Court to Berkeley Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,357 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,257 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.13	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.07	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.3	60.2	68.8	69.4
Medium Trucks:	62.7	62.0	55.6	54.1	62.5	62.8
Heavy Trucks:	63.1	62.5	53.4	54.7	63.0	63.2
Vehicle Noise:	70.8	69.9	66.8	62.0	70.6	71.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	147	317	683
CNEL:	73	158	341	734

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Campus Drive  
 Road Segment: California Avenue to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,405 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,178 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.97	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.27	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.22	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.9	66.1	60.0	68.7	69.3
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0
Vehicle Noise:	70.6	69.7	66.7	61.9	70.4	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	310	667
CNEL:	72	154	333	717



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Campus Drive  
 Road Segment: Berkeley Avenue to Cornell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,031 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,735 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.25	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.21	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.9	66.9	65.1	59.1	67.7	68.3	
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6	
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0	
Vehicle Noise:	69.6	68.7	65.7	60.9	69.4	69.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	124	266	573
CNEL:	62	133	286	616

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Campus Drive  
 Road Segment: Martin to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,561 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,449 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.80	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.04	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.99	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.2	66.1	64.3	58.3	66.9	67.5	
Medium Trucks:	60.7	60.1	53.7	52.1	60.6	60.8	
Heavy Trucks:	61.1	60.6	51.5	52.8	61.1	61.2	
Vehicle Noise:	68.9	67.9	64.9	60.1	68.7	69.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	110	236	509
CNEL:	55	118	254	546

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred	Project Name: Irvine GP
Road Name: Campus Drive	Job Number: 15937
Road Segment: Culver Drive to Paseo Montoya (Turtle Rock Drive)	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 15,896 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 1,311 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 50 mph																					
Near/Far Lane Distance: 48 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 62.5 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
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Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 57.786																				
Left View: -90.0 degrees	Medium Trucks: 57.717																				
Right View: 90.0 degrees	Heavy Trucks: 57.787																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.47	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.43	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.8	66.5	67.1
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4
Heavy Trucks:	60.7	60.1	51.1	52.3	60.7	60.8
Vehicle Noise:	68.4	67.5	64.5	59.7	68.2	68.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	221	476
CNEL:	51	110	237	511

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Campus Drive  
 Road Segment: Von Karman Avenue to Teller Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,040 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,241 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.47	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.71	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.67	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.5	65.4	63.7	57.6	66.2	66.8	
Medium Trucks:	60.1	59.4	53.0	51.5	59.9	60.2	
Heavy Trucks:	60.5	59.9	50.8	52.1	60.4	60.6	
Vehicle Noise:	68.2	67.3	64.2	59.4	68.0	68.5	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	99	213	459
CNEL:	49	106	229	493

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Campus Drive  
 Road Segment: MacArthur Boulevard to Martin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,413 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,189 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-18.89	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-22.85	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.3	65.2	63.5	57.4	66.0	66.6	
Medium Trucks:	59.9	59.2	52.8	51.3	59.7	60.0	
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4	
Vehicle Noise:	68.0	67.1	64.0	59.3	67.8	68.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	96	207	446
CNEL:	48	103	222	479

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Campus Drive  
 Road Segment: Teller Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,202 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,007 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.38	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.62	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.57	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.5	62.7	56.7	65.3	65.9
Medium Trucks:	59.1	58.5	52.1	50.6	59.0	59.3
Heavy Trucks:	59.6	59.0	49.9	51.2	59.5	59.7
Vehicle Noise:	67.3	66.4	63.3	58.5	67.1	67.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	86	185	399
CNEL:	43	92	199	429

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Carlson Avenue  
 Road Segment: Michelson Drive to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,323 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,099 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.19	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.1	57.1	65.7	66.3
Medium Trucks:	59.5	58.9	52.5	50.9	59.4	59.6
Heavy Trucks:	59.9	59.4	50.3	51.6	59.9	60.0
Vehicle Noise:	67.7	66.7	63.7	58.9	67.5	67.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	91	196	423
CNEL:	45	98	211	454

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Chinon  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,756 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	392 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-3.46	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-20.70	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-24.66	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.9	54.8	53.1	47.0	55.6	56.3
Medium Trucks:	50.7	50.1	43.7	42.2	50.6	50.9
Heavy Trucks:	54.0	53.4	44.3	45.6	53.9	54.1
Vehicle Noise:	58.8	58.0	54.0	50.1	58.6	59.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	14	30	65
CNEL:	7	15	32	70



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Creek Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,796 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	396 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-3.42	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-20.66	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-24.62	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.1	52.0	50.2	44.2	52.8	53.4
Medium Trucks:	47.9	47.2	40.9	39.3	47.8	48.0
Heavy Trucks:	51.1	50.5	41.5	42.7	51.1	51.2
Vehicle Noise:	55.9	55.1	51.2	47.3	55.8	56.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	7	15	33	71
CNEL:	7	16	35	75

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 60,961 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,029 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.19	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.05	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.00	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.1	71.0	69.2	63.2	71.8	72.4
Medium Trucks:	65.5	64.8	58.4	56.9	65.3	65.6
Heavy Trucks:	65.5	64.9	55.9	57.1	65.5	65.6
Vehicle Noise:	73.7	72.7	69.8	64.9	73.5	73.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	307	662	1,427
CNEL:	154	331	713	1,535

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 59,836 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,936 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.11	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.13	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.08	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.0	70.9	69.2	63.1	71.7	72.3
Medium Trucks:	65.4	64.7	58.4	56.8	65.3	65.5
Heavy Trucks:	65.4	64.8	55.8	57.0	65.4	65.5
Vehicle Noise:	73.6	72.6	69.7	64.8	73.4	73.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	141	304	654	1,409
CNEL:	152	327	704	1,516

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: I-5 SB Off-Ramp to I-5 NB On-Ramp (Trabuco)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 60,896 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,024 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.19	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.05	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.01	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.1	71.0	69.2	63.2	71.8	72.4
Medium Trucks:	65.5	64.8	58.4	56.9	65.3	65.6
Heavy Trucks:	65.5	64.9	55.9	57.1	65.5	65.6
Vehicle Noise:	73.6	72.7	69.8	64.9	73.4	73.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	307	662	1,426
CNEL:	153	331	712	1,534

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Scottsdale Drive to I-5 SB Off- Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 59,899 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,942 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.12	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.08	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.0	70.9	69.2	63.1	71.7	72.3	
Medium Trucks:	65.4	64.7	58.4	56.8	65.3	65.5	
Heavy Trucks:	65.4	64.8	55.8	57.0	65.4	65.5	
Vehicle Noise:	73.6	72.7	69.7	64.8	73.4	73.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	141	304	655	1,410
CNEL:	152	327	704	1,517

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: I-405 NB Off-Ramp to San Leandro

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 56,751 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,682 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.88	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.36	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.31	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.8	70.7	68.9	62.9	71.5	72.1
Medium Trucks:	65.2	64.5	58.1	56.6	65.0	65.3
Heavy Trucks:	65.2	64.6	55.6	56.8	65.2	65.3
Vehicle Noise:	73.3	72.4	69.5	64.6	73.1	73.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	136	293	631	1,360
CNEL:	146	315	679	1,464

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: San Leandro to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 53,116 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,382 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.59	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.64	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.60	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.4	68.6	62.6	71.2	71.8
Medium Trucks:	64.9	64.2	57.8	56.3	64.7	65.0
Heavy Trucks:	64.9	64.3	55.3	56.5	64.9	65.0
Vehicle Noise:	73.1	72.1	69.2	64.3	72.9	73.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	130	280	604	1,302
CNEL:	140	302	650	1,400

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Harvard Avenue to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 53,212 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,390 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.60	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.64	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.59	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.4	68.7	62.6	71.2	71.8
Medium Trucks:	64.9	64.2	57.8	56.3	64.8	65.0
Heavy Trucks:	64.9	64.3	55.3	56.5	64.9	65.0
Vehicle Noise:	73.1	72.1	69.2	64.3	72.9	73.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	130	281	605	1,303
CNEL:	140	302	651	1,402



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Trabuco Road to Farwell Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 59,466 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,906 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.08	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.15	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.11	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.4	71.3	69.5	63.5	72.1	72.7
Medium Trucks:	65.8	65.1	58.7	57.2	65.7	65.9
Heavy Trucks:	65.8	65.2	56.2	57.4	65.8	65.9
Vehicle Noise:	74.0	73.0	70.1	65.2	73.8	74.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	142	307	661	1,424
CNEL:	153	330	711	1,532

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 51,527 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,251 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.46	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.78	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.73	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.3	70.3	68.5	62.5	71.1	71.7	
Medium Trucks:	64.7	64.1	57.7	56.2	64.6	64.8	
Heavy Trucks:	64.8	64.2	55.1	56.4	64.7	64.9	
Vehicle Noise:	72.9	72.0	69.0	64.2	72.7	73.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	128	275	592	1,276
CNEL:	137	296	637	1,372

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Main Street to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 50,100 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,133 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.34	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.90	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.85	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.2	70.2	68.4	62.3	71.0	71.6
Medium Trucks:	64.6	63.9	57.6	56.0	64.5	64.7
Heavy Trucks:	64.6	64.1	55.0	56.3	64.6	64.8
Vehicle Noise:	72.8	71.9	68.9	64.0	72.6	73.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	125	270	581	1,252
CNEL:	135	290	625	1,347

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Warner Avenue to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 49,101 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,051 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.25	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.99	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.94	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	70.1	68.3	62.3	70.9	71.5
Medium Trucks:	64.5	63.9	57.5	55.9	64.4	64.6
Heavy Trucks:	64.6	64.0	54.9	56.2	64.5	64.7
Vehicle Noise:	72.7	71.8	68.8	64.0	72.5	73.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	124	266	573	1,235
CNEL:	133	286	617	1,329

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Walnut Avenue to Scottsdale Dive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 48,057 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,965 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.16	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.08	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.03	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.0	70.0	68.2	62.2	70.8	71.4	
Medium Trucks:	64.4	63.8	57.4	55.9	64.3	64.5	
Heavy Trucks:	64.5	63.9	54.8	56.1	64.4	64.6	
Vehicle Noise:	72.6	71.7	68.7	63.9	72.4	72.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	122	262	565	1,218
CNEL:	131	282	608	1,310

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 47,820 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,945 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.14	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.10	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.06	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.0	70.0	68.2	62.1	70.8	71.4	
Medium Trucks:	64.4	63.7	57.4	55.8	64.3	64.5	
Heavy Trucks:	64.4	63.9	54.8	56.1	64.4	64.6	
Vehicle Noise:	72.6	71.7	68.7	63.8	72.4	72.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	261	563	1,214
CNEL:	131	281	606	1,306

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Shady Canyon Drive to Palo Verde

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,587 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,193 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.59	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.61	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.1	69.1	67.3	61.2	69.9	70.5	
Medium Trucks:	63.5	62.8	56.5	54.9	63.4	63.6	
Heavy Trucks:	63.5	63.0	53.9	55.2	63.5	63.7	
Vehicle Noise:	71.7	70.8	67.8	62.9	71.5	72.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	170	365	787
CNEL:	85	182	393	846

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Deerfield Avenue to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,310 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,656 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.81	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.43	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.39	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.7	69.6	67.9	61.8	70.4	71.0	
Medium Trucks:	64.1	63.4	57.0	55.5	64.0	64.2	
Heavy Trucks:	64.1	63.5	54.5	55.7	64.1	64.2	
Vehicle Noise:	72.3	71.3	68.4	63.5	72.1	72.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	249	535	1,154
CNEL:	124	267	576	1,241



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Sandburg Way to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,084 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,637 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.78	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.45	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.41	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.7	69.6	67.8	61.8	70.4	71.0	
Medium Trucks:	64.1	63.4	57.0	55.5	63.9	64.2	
Heavy Trucks:	64.1	63.5	54.5	55.7	64.1	64.2	
Vehicle Noise:	72.2	71.3	68.4	63.5	72.0	72.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	115	248	534	1,150
CNEL:	124	266	574	1,237

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 43,249 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,568 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.70	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.54	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.49	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	69.5	67.8	61.7	70.3	70.9
Medium Trucks:	64.0	63.3	56.9	55.4	63.9	64.1
Heavy Trucks:	64.0	63.4	54.4	55.6	64.0	64.1
Vehicle Noise:	72.2	71.2	68.3	63.4	72.0	72.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	245	527	1,135
CNEL:	122	263	567	1,221

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Palo Verde to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,255 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,001 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.00	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.7	66.9	60.8	69.5	70.1
Medium Trucks:	63.1	62.4	56.1	54.5	63.0	63.2
Heavy Trucks:	63.1	62.6	53.5	54.8	63.1	63.3
Vehicle Noise:	71.3	70.4	67.4	62.5	71.1	71.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	159	344	740
CNEL:	80	172	370	796

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: University Drive to Sandburg Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 40,762 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,363 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.44	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.79	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.75	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.3	67.5	61.4	70.1	70.7
Medium Trucks:	63.7	63.0	56.7	55.1	63.6	63.8
Heavy Trucks:	63.7	63.2	54.1	55.4	63.7	63.9
Vehicle Noise:	71.9	71.0	68.0	63.2	71.7	72.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	109	235	506	1,091
CNEL:	117	253	545	1,174

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Farwell Avenue to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,855 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,866 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.05	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.19	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.14	-2.29	-1.20	-5.23	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.3	70.3	68.5	62.5	71.1	71.7	
Medium Trucks:	64.7	64.1	57.7	56.2	64.6	64.8	
Heavy Trucks:	64.8	64.2	55.1	56.4	64.7	64.9	
Vehicle Noise:	72.9	72.0	69.0	64.2	72.7	73.2	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	121	262	564	1,214
CNEL:	131	281	606	1,307

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Campus Drive to High School

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,109 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,309 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.37	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.86	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.82	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.2	67.4	61.4	70.0	70.6
Medium Trucks:	63.6	63.0	56.6	55.1	63.5	63.8
Heavy Trucks:	63.7	63.1	54.1	55.3	63.7	63.8
Vehicle Noise:	71.8	70.9	68.0	63.1	71.6	72.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	108	233	501	1,079
CNEL:	116	250	539	1,161

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: High School to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,343 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,246 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.29	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.95	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.90	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.2	69.1	67.3	61.3	69.9	70.5	
Medium Trucks:	63.6	62.9	56.5	55.0	63.4	63.7	
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7	
Vehicle Noise:	71.8	70.8	67.9	63.0	71.6	72.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	107	230	495	1,066
CNEL:	115	247	532	1,146

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Bryan Avenue to Florence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,291 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,076 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">VehicleType</th> <th style="text-align: center;">Day</th> <th style="text-align: center;">Evening</th> <th style="text-align: center;">Night</th> <th style="text-align: center;">Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td style="text-align: center;">77.5%</td> <td style="text-align: center;">12.9%</td> <td style="text-align: center;">9.6%</td> <td style="text-align: center;">97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td style="text-align: center;">84.8%</td> <td style="text-align: center;">4.9%</td> <td style="text-align: center;">10.3%</td> <td style="text-align: center;">1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td style="text-align: center;">86.5%</td> <td style="text-align: center;">2.7%</td> <td style="text-align: center;">10.8%</td> <td style="text-align: center;">0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.06	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.18	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.14	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	68.9	67.1	61.1	69.7	70.3
Medium Trucks:	63.3	62.7	56.3	54.8	63.2	63.4
Heavy Trucks:	63.4	62.8	53.7	55.0	63.3	63.5
Vehicle Noise:	71.5	70.6	67.6	62.8	71.3	71.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	103	222	477	1,028
CNEL:	111	238	513	1,106



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Portola Parkway to Settlers

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,133 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,826 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.21	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.40	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.3	66.5	60.4	69.1	69.7
Medium Trucks:	62.7	62.0	55.7	54.1	62.6	62.8
Heavy Trucks:	62.7	62.2	53.1	54.4	62.7	62.9
Vehicle Noise:	70.9	70.0	67.0	62.2	70.7	71.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	70	150	323	696
CNEL:	75	161	348	749

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Florence to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 36,478 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,009 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.96	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.28	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.23	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.8	68.8	67.0	61.0	69.6	70.2	
Medium Trucks:	63.2	62.6	56.2	54.7	63.1	63.3	
Heavy Trucks:	63.3	62.7	53.6	54.9	63.2	63.4	
Vehicle Noise:	71.4	70.5	67.5	62.7	71.2	71.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	218	470	1,013
CNEL:	109	235	506	1,090

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Irvine Boulevard to Viewpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,880 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,300 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.79	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.44	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.40	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.1	61.4	55.0	53.5	61.9	62.2
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	70.3	69.3	66.4	61.5	70.1	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	182	393	847
CNEL:	91	196	423	911

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Viewpark to Meadowood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,007 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,228 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.66	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.58	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.54	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.5	65.7	59.7	68.3	68.9	
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.0	
Heavy Trucks:	62.0	61.4	52.3	53.6	61.9	62.1	
Vehicle Noise:	70.1	69.2	66.2	61.4	69.9	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	179	385	829
CNEL:	89	192	414	892

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Settlers to Furrow

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	11,905 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	982 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.90	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-20.14	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-24.09	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.6	63.8	57.7	66.4	67.0
Medium Trucks:	60.0	59.4	53.0	51.4	59.9	60.1
Heavy Trucks:	60.1	59.5	50.4	51.7	60.0	60.2
Vehicle Noise:	68.2	67.3	64.3	59.5	68.0	68.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	99	214	461
CNEL:	50	107	230	495

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Culver Drive  
 Road Segment: Meadowood to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,491 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,608 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.76	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-18.00	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.95	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.1	66.1	64.3	58.2	66.9	67.5	
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6	
Heavy Trucks:	60.5	60.0	50.9	52.2	60.5	60.7	
Vehicle Noise:	68.7	67.8	64.8	59.9	68.5	69.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	144	310	667
CNEL:	72	155	333	718

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Discovery Drive  
 Road Segment: Irvine Center Drive to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,390 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	775 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.55	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.79	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.74	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.7	60.7	58.9	52.8	61.5	62.1
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8
Heavy Trucks:	57.0	56.4	47.4	48.6	57.0	57.1
Vehicle Noise:	63.7	62.8	59.6	55.0	63.5	64.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	232
CNEL:	25	53	115	248

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Discovery Drive  
 Road Segment: Waterworks Way to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	5,001 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	413 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-22.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-26.48	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.0	57.9	56.2	50.1	58.7	59.3
Medium Trucks:	53.0	52.3	45.9	44.4	52.8	53.1
Heavy Trucks:	54.3	53.7	44.6	45.9	54.3	54.4
Vehicle Noise:	61.0	60.1	56.8	52.3	60.8	61.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	15	33	71	152
CNEL:	16	35	76	163



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: East Yale Loop  
 Road Segment: Alton Parkway to Witherspoon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,347 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,101 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.22	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.2	62.2	60.4	54.4	63.0	63.6	
Medium Trucks:	57.2	56.5	50.2	48.6	57.1	57.3	
Heavy Trucks:	58.5	57.9	48.9	50.2	58.5	58.6	
Vehicle Noise:	65.3	64.4	61.1	56.5	65.1	65.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	136	293
CNEL:	31	68	146	314

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: East Yale Loop  
 Road Segment: Osborn Street to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,680 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,046 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.44	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.0	62.0	60.2	54.1	62.8	63.4
Medium Trucks:	57.0	56.3	50.0	48.4	56.9	57.1
Heavy Trucks:	58.3	57.7	48.7	49.9	58.3	58.4
Vehicle Noise:	65.0	64.1	60.9	56.3	64.8	65.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	131	283
CNEL:	30	65	141	303

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: East Yale Loop  
 Road Segment: Yale Avenue to Springbrook South

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,525 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 951 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.85	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.6	61.5	59.8	53.7	62.3	63.0
Medium Trucks:	56.6	55.9	49.5	48.0	56.5	56.7
Heavy Trucks:	57.9	57.3	48.3	49.5	57.9	58.0
Vehicle Noise:	64.6	63.7	60.4	55.9	64.4	64.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	57	123	266
CNEL:	28	61	132	285

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: East Yale Loop  
 Road Segment: Springbrook North to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,506 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	702 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.98	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.22	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.17	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.3	60.2	58.5	52.4	61.0	61.6
Medium Trucks:	55.3	54.6	48.2	46.7	55.1	55.4
Heavy Trucks:	56.6	56.0	47.0	48.2	56.6	56.7
Vehicle Noise:	63.3	62.4	59.1	54.6	63.1	63.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	101	217
CNEL:	23	50	108	232

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: East Yale Loop  
 Road Segment: Woodspring to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,059 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	582 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.79	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.03	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.98	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.5	59.4	57.6	51.6	60.2	60.8
Medium Trucks:	54.5	53.8	47.4	45.9	54.3	54.6
Heavy Trucks:	55.8	55.2	46.1	47.4	55.7	55.9
Vehicle Noise:	62.5	61.6	58.3	53.8	62.3	62.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	41	89	192
CNEL:	21	44	95	205

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: East Yale Loop  
 Road Segment: Barranca Parkway to Eastshore

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,558 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 541 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.30	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.2	59.1	57.3	51.3	59.9	60.5	
Medium Trucks:	54.1	53.5	47.1	45.6	54.0	54.2	
Heavy Trucks:	55.4	54.9	45.8	47.1	55.4	55.6	
Vehicle Noise:	62.2	61.3	58.0	53.4	62.0	62.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	85	182
CNEL:	20	42	91	195

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Eastwood  
 Road Segment: Bryan Avenue to Monticello

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,212 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 265 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-6.63	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-23.87	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-27.82	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.3	57.2	55.5	49.4	58.0	58.7
Medium Trucks:	52.5	51.9	45.5	44.0	52.4	52.7
Heavy Trucks:	54.4	53.8	44.8	46.0	54.4	54.5
Vehicle Noise:	60.5	59.7	56.2	51.8	60.4	60.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	18	40	85
CNEL:	9	20	42	91

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Eastwood  
 Road Segment: Columbus to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,017 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 166 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
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	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-8.65	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-25.89	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-29.84	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	56.3	55.2	53.5	47.4	56.0	56.6	
Medium Trucks:	50.5	49.8	43.5	41.9	50.4	50.6	
Heavy Trucks:	52.4	51.8	42.7	44.0	52.3	52.5	
Vehicle Noise:	58.5	57.6	54.2	49.8	58.3	58.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	13	29	63
CNEL:	7	14	31	67



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: El Camino Real  
 Road Segment: Jamboree Road to Alliance (SR-261 Bridge)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,372 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,598 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.64	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.60	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	63.8	62.0	56.0	64.6	65.2
Medium Trucks:	58.8	58.2	51.8	50.3	58.7	58.9
Heavy Trucks:	60.2	59.6	50.5	51.8	60.1	60.3
Vehicle Noise:	66.9	66.0	62.7	58.1	66.7	67.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	174	376
CNEL:	40	87	187	402

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: El Camino Real North  
 Road Segment: El Camino Real to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,466 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 533 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.41	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.36	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.1	59.0	57.3	51.2	59.8	60.4	
Medium Trucks:	54.1	53.4	47.0	45.5	54.0	54.2	
Heavy Trucks:	55.4	54.8	45.8	47.0	55.4	55.5	
Vehicle Noise:	62.1	61.2	57.9	53.4	61.9	62.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	84	181
CNEL:	19	42	90	194

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Fairbanks  
 Road Segment: Alton Parkway to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 18,297 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,510 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.35	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-16.89	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-20.85	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.4	64.7	58.6	67.2	67.8
Medium Trucks:	61.5	60.8	54.4	52.9	61.4	61.6
Heavy Trucks:	62.8	62.2	53.2	54.4	62.8	62.9
Vehicle Noise:	69.5	68.6	65.3	60.8	69.3	69.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	73	157	338
CNEL:	36	78	168	362

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Fairbanks  
 Road Segment: Irvine Boulevard to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,527 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	786 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.49	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-19.72	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-23.68	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.7	63.6	61.8	55.8	64.4	65.0
Medium Trucks:	58.6	58.0	51.6	50.1	58.5	58.8
Heavy Trucks:	59.9	59.4	50.3	51.6	59.9	60.1
Vehicle Noise:	66.7	65.8	62.5	57.9	66.5	66.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	101	219
CNEL:	23	50	109	234

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Fairchild Road  
 Road Segment: MacArthur Boulevard to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,094 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 585 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.47	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.9	60.9	59.1	53.1	61.7	62.3	
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8	
Heavy Trucks:	56.5	55.9	46.9	48.2	56.5	56.6	
Vehicle Noise:	63.8	62.9	59.7	55.0	63.6	64.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	233
CNEL:	25	54	116	250

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Gateway Boulevard  
 Road Segment: Alton Parkway to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,953 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,316 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	1.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-16.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-20.19	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.5	59.4	57.7	51.6	60.2	60.9
Medium Trucks:	55.0	54.3	48.0	46.4	54.9	55.1
Heavy Trucks:	57.5	56.9	47.9	49.1	57.5	57.6
Vehicle Noise:	63.0	62.2	58.5	54.3	62.8	63.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	45	97	208
CNEL:	22	48	103	222

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred	Project Name: Irvine GP
Road Name: Gateway Boulevard	Job Number: 15937
Road Segment: Spectrum Center Drive (Fortune Drive) to Alton Parkway	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,135 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 1,001 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 30 mph																					
Near/Far Lane Distance: 48 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 62.5 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 62.5 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 57.786																				
Left View: -90.0 degrees	Medium Trucks: 57.717																				
Right View: 90.0 degrees	Heavy Trucks: 57.787																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.42	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.38	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.3	58.3	56.5	50.4	59.1	59.7
Medium Trucks:	53.8	53.1	46.8	45.2	53.7	53.9
Heavy Trucks:	56.3	55.7	46.7	47.9	56.3	56.4
Vehicle Noise:	61.8	61.0	57.3	53.1	61.7	62.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	81	174
CNEL:	18	40	86	185

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Gateway Boulevard  
 Road Segment: Irvine Center Drive to Meridian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,204 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 512 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-3.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-20.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-24.29	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.4	55.3	53.6	47.5	56.1	56.8
Medium Trucks:	50.9	50.2	43.9	42.3	50.8	51.0
Heavy Trucks:	53.4	52.8	43.8	45.0	53.4	53.5
Vehicle Noise:	58.9	58.0	54.4	50.2	58.7	59.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	111
CNEL:	12	25	55	118



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Great Park Boulevard  
 Road Segment: Sand Canyon to Ridge Valley

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,530 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,674 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 47.329				
Road Grade: 0.0%	Medium Trucks: 47.244				
Left View: -90.0 degrees	Heavy Trucks: 47.329				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.24	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.00	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.95	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.5	71.4	69.7	63.6	72.2	72.8
Medium Trucks:	66.1	65.4	59.0	57.5	66.0	66.2
Heavy Trucks:	66.5	65.9	56.9	58.1	66.5	66.6
Vehicle Noise:	74.2	73.3	70.2	65.5	74.0	74.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	111	239	515	1,108
CNEL:	119	257	553	1,191

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Great Park Boulevard  
 Road Segment: Ridge Valley (O Street) to Bosque (LY Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,566 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,862 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.90	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.2	67.2	65.4	59.4	68.0	68.6
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	62.2	61.6	52.6	53.9	62.2	62.3
Vehicle Noise:	69.9	69.0	66.0	61.2	69.7	70.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	279	601
CNEL:	65	139	300	646

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Great Park Boulevard (EB)  
 Road Segment: Bosque to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,512 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 702 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.94	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-21.18	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-25.14	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.9	65.8	64.1	58.0	66.6	67.2
Medium Trucks:	60.5	59.8	53.4	51.9	60.4	60.6
Heavy Trucks:	60.9	60.3	51.3	52.5	60.9	61.0
Vehicle Noise:	68.6	67.7	64.6	59.8	68.4	68.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	136	293
CNEL:	31	68	146	315

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Great Park Boulevard (WB)  
 Road Segment: Bosque to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,517 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 620 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.48	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-21.72	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-25.68	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.4	65.3	63.5	57.5	66.1	66.7	
Medium Trucks:	59.9	59.3	52.9	51.4	59.8	60.0	
Heavy Trucks:	60.3	59.7	50.7	52.0	60.3	60.4	
Vehicle Noise:	68.1	67.1	64.1	59.3	67.9	68.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	125	270
CNEL:	29	62	135	290

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: University Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,043 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,901 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.84	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-16.40	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-20.36	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	68.9	67.1	61.0	69.7	70.3
Medium Trucks:	63.7	63.0	56.7	55.1	63.6	63.8
Heavy Trucks:	64.5	63.9	54.9	56.2	64.5	64.6
Vehicle Noise:	71.8	70.9	67.7	63.0	71.6	72.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	222	478
CNEL:	51	110	238	513

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Michelson Drive to Coronado

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,293 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,582 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.03	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	62.1	61.5	55.1	53.6	62.0	62.3
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1
Vehicle Noise:	70.2	69.3	66.2	61.5	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	135	291	627
CNEL:	67	145	312	673

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: San Marino to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,486 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,433 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.91	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.33	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.28	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.1	65.3	59.2	67.9	68.5
Medium Trucks:	61.9	61.2	54.8	53.3	61.8	62.0
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.0	69.1	65.9	61.2	69.8	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	280	603
CNEL:	65	139	300	647

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Coronado to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,124 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,403 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.86	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.34	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.2	59.2	67.8	68.4
Medium Trucks:	61.8	61.2	54.8	53.3	61.7	61.9
Heavy Trucks:	62.7	62.1	53.0	54.3	62.7	62.8
Vehicle Noise:	69.9	69.0	65.8	61.2	69.7	70.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	278	598
CNEL:	64	138	298	642



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: San Carlo to San Marino

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,700 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,368 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.79	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.45	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.40	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.0	66.9	65.2	59.1	67.7	68.4	
Medium Trucks:	61.8	61.1	54.7	53.2	61.6	61.9	
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7	
Vehicle Noise:	69.8	68.9	65.8	61.1	69.6	70.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	128	275	592
CNEL:	64	137	295	635

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Main Street to San Carlo

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,170 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,324 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.71	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.53	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.48	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.9	65.1	59.0	67.7	68.3
Medium Trucks:	61.7	61.0	54.7	53.1	61.6	61.8
Heavy Trucks:	62.5	61.9	52.9	54.2	62.5	62.6
Vehicle Noise:	69.8	68.9	65.7	61.0	69.6	70.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	126	272	585
CNEL:	63	135	291	627

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Alton Parkway to San Leon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 20,344 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,678 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.30	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.94	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.90	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.4	63.7	57.6	66.3	66.9
Medium Trucks:	60.3	59.6	53.2	51.7	60.2	60.4
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2
Vehicle Noise:	68.3	67.4	64.3	59.6	68.2	68.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	101	219	471
CNEL:	51	109	234	505

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: San Juan to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,616 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,701 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.36	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.88	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.84	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.5	63.7	57.7	66.3	66.9
Medium Trucks:	60.3	59.7	53.3	51.7	60.2	60.4
Heavy Trucks:	61.2	60.6	51.5	52.8	61.2	61.3
Vehicle Noise:	68.4	67.5	64.3	59.7	68.2	68.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	102	220	475
CNEL:	51	110	237	510

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: San Leon to San Juan

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,160 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,663 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.94	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.4	63.6	57.6	66.2	66.8
Medium Trucks:	60.2	59.6	53.2	51.7	60.1	60.3
Heavy Trucks:	61.1	60.5	51.4	52.7	61.1	61.2
Vehicle Noise:	68.3	67.4	64.3	59.6	68.1	68.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	101	217	468
CNEL:	50	108	233	502

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,471 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,276 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.89	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.09	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.3	64.3	62.5	56.4	65.1	65.7
Medium Trucks:	59.1	58.4	52.0	50.5	59.0	59.2
Heavy Trucks:	59.9	59.3	50.3	51.5	59.9	60.0
Vehicle Noise:	67.2	66.3	63.1	58.4	67.0	67.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	85	182	392
CNEL:	42	91	195	421

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Deerfield Avenue to Poplar Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,226 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,256 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.96	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.20	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.15	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.3	64.2	62.4	56.4	65.0	65.6
Medium Trucks:	59.0	58.3	52.0	50.4	58.9	59.1
Heavy Trucks:	59.9	59.3	50.2	51.5	59.8	60.0
Vehicle Noise:	67.1	66.2	63.0	58.4	66.9	67.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	180	388
CNEL:	42	90	193	416

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,230 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,421 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.42	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.66	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.62	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.8	64.7	63.0	56.9	65.5	66.1
Medium Trucks:	59.5	58.9	52.5	51.0	59.4	59.7
Heavy Trucks:	60.4	59.8	50.8	52.0	60.4	60.5
Vehicle Noise:	67.6	66.7	63.6	58.9	67.4	67.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	91	196	421
CNEL:	45	97	210	452



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Bridge Road to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,811 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,387 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.72	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.6	62.9	56.8	65.4	66.0
Medium Trucks:	59.4	58.8	52.4	50.9	59.3	59.6
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	67.5	66.6	63.5	58.8	67.3	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	89	192	415
CNEL:	44	96	206	445

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Paseo Westpark to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,894 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,394 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.51	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.75	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.70	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.6	62.9	56.8	65.4	66.0
Medium Trucks:	59.5	58.8	52.4	50.9	59.3	59.6
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	67.5	66.6	63.5	58.8	67.3	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	90	193	416
CNEL:	45	96	207	446

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Poplar Street to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,424 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,107 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.51	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	79.45	-18.75	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	84.25	-22.70	0.91	-1.20	-5.43	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.7	65.6	63.8	57.8	66.4	67.0	
Medium Trucks:	60.4	59.8	53.4	51.8	60.3	60.5	
Heavy Trucks:	61.3	60.7	51.6	52.9	61.2	61.4	
Vehicle Noise:	68.5	67.6	64.4	59.8	68.3	68.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	83	179	385
CNEL:	41	89	192	413

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: California Avenue to Berkeley Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,793 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,220 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.09	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.32	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.28	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.1	62.3	56.2	64.9	65.5
Medium Trucks:	58.9	58.2	51.9	50.3	58.8	59.0
Heavy Trucks:	59.7	59.1	50.1	51.4	59.7	59.8
Vehicle Noise:	67.0	66.1	62.9	58.2	66.8	67.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	177	381
CNEL:	41	88	190	408

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Culver Drive to California Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,558 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,201 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.16	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.35	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.0	62.2	56.2	64.8	65.4
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9
Heavy Trucks:	59.7	59.1	50.0	51.3	59.6	59.8
Vehicle Noise:	66.9	66.0	62.8	58.2	66.7	67.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	175	377
CNEL:	40	87	188	404

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Berkeley to Bridge Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,466 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,193 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.42	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.38	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.0	64.0	62.2	56.1	64.8	65.4	
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9	
Heavy Trucks:	59.6	59.0	50.0	51.3	59.6	59.7	
Vehicle Noise:	66.9	66.0	62.8	58.1	66.7	67.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	174	375
CNEL:	40	87	187	402

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Harvard Avenue  
 Road Segment: Warner Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,352 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,102 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.53	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.77	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.73	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.7	63.6	61.9	55.8	64.4	65.0	
Medium Trucks:	58.4	57.8	51.4	49.9	58.3	58.6	
Heavy Trucks:	59.3	58.7	49.7	50.9	59.3	59.4	
Vehicle Noise:	66.5	65.6	62.5	57.8	66.3	66.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	165	356
CNEL:	38	82	177	381

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Hicks Canyon Drive  
 Road Segment: Delamesa to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,209 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 182 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-8.25	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	75.75	-25.49	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	81.57	-29.45	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.8	54.7	52.9	46.9	55.5	56.1
Medium Trucks:	50.0	49.3	42.9	41.4	49.9	50.1
Heavy Trucks:	51.8	51.2	42.2	43.5	51.8	51.9
Vehicle Noise:	58.0	57.1	53.7	49.3	57.8	58.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	36	77
CNEL:	8	18	38	82



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Hornet (5th St)  
 Road Segment: Ridge Valley (O Street) to Bosque

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,393 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	280 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-4.93	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-22.17	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-26.12	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.4	53.4	51.6	45.6	54.2	54.8
Medium Trucks:	49.3	48.6	42.2	40.7	49.2	49.4
Heavy Trucks:	52.5	51.9	42.9	44.1	52.5	52.6
Vehicle Noise:	57.3	56.5	52.6	48.7	57.2	57.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	5	11	24	52
CNEL:	6	12	26	56

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Hubble  
 Road Segment: Irvine Center Drive to Bunsen

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,425 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 200 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-6.39	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-23.62	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-27.58	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	53.0	51.9	50.2	44.1	52.7	53.3	
Medium Trucks:	47.8	47.2	40.8	39.2	47.7	47.9	
Heavy Trucks:	51.0	50.4	41.4	42.7	51.0	51.1	
Vehicle Noise:	55.9	55.0	51.1	47.2	55.7	56.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	19	42
CNEL:	4	10	21	44

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred Project Name: Irvine GP  
 Road Name: Irvine Boulevard Job Number: 15937  
 Road Segment: SR-133 NB Off- Ramp to Ridge Valley (O Street)

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b> Average Daily Traffic (Adt): 42,105 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,474 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	<b>Site Conditions (Hard = 10, Soft = 15)</b> Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b> Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<b>Vehicle Mix</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table> <b>Noise Source Elevations (in feet)</b> Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Lane Equivalent Distance (in feet)</b> Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.59	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.65	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.61	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.5	69.4	67.6	61.6	70.2	70.8
Medium Trucks:	63.9	63.2	56.8	55.3	63.7	64.0
Heavy Trucks:	63.9	63.3	54.3	55.5	63.9	64.0
Vehicle Noise:	72.0	71.1	68.2	63.3	71.8	72.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	111	240	518	1,115
CNEL:	120	258	557	1,200

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: SR-133 SB Off-Ramp to SR-133 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,173 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,314 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.38	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.86	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.81	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.2	67.4	61.4	70.0	70.6
Medium Trucks:	63.7	63.0	56.6	55.1	63.5	63.8
Heavy Trucks:	63.7	63.1	54.1	55.3	63.7	63.8
Vehicle Noise:	71.8	70.9	68.0	63.1	71.6	72.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	108	233	502	1,081
CNEL:	116	250	540	1,163

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Sand Canyon to SR-133 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,675 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,768 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.94	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.30	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.26	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.2	70.2	68.4	62.3	71.0	71.6
Medium Trucks:	64.6	63.9	57.6	56.0	64.5	64.7
Heavy Trucks:	64.7	64.1	55.0	56.3	64.6	64.8
Vehicle Noise:	72.8	71.9	68.9	64.1	72.6	73.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	119	257	554	1,194
CNEL:	128	277	596	1,285

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Merit to Alton

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,805 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,954 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.88	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.36	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.31	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.8	68.7	66.9	60.9	69.5	70.1	
Medium Trucks:	63.2	62.5	56.1	54.6	63.0	63.3	
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3	
Vehicle Noise:	71.3	70.4	67.5	62.6	71.1	71.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	216	465	1,001
CNEL:	108	232	500	1,077

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Journey to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 36,360 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,000 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.95	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.29	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.25	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.8	68.8	67.0	60.9	69.6	70.2	
Medium Trucks:	63.2	62.5	56.2	54.6	63.1	63.3	
Heavy Trucks:	63.3	62.7	53.6	54.9	63.2	63.4	
Vehicle Noise:	71.4	70.5	67.5	62.7	71.2	71.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	101	218	469	1,011
CNEL:	109	234	505	1,088

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Ridge Valley (O Street) to Bosque (LY Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,486 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,598 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.32	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.92	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.87	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.1	66.4	60.3	68.9	69.6
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7
Heavy Trucks:	62.6	62.0	53.0	54.3	62.6	62.7
Vehicle Noise:	70.8	69.9	66.9	62.0	70.6	71.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	426	919
CNEL:	99	213	459	988



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Pusan Way to Chinon (B Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,080 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,564 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.27	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.97	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.93	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.1	66.3	60.3	68.9	69.5
Medium Trucks:	62.5	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	62.6	62.0	52.9	54.2	62.6	62.7
Vehicle Noise:	70.7	69.8	66.8	62.0	70.5	71.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	196	423	911
CNEL:	98	211	455	980

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Palo Lado to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,379 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,671 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.44	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.79	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.75	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.3	66.5	60.4	69.1	69.7
Medium Trucks:	62.7	62.0	55.7	54.1	62.6	62.8
Heavy Trucks:	62.7	62.2	53.1	54.4	62.7	62.9
Vehicle Noise:	70.9	70.0	67.0	62.2	70.7	71.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	94	202	434	936
CNEL:	101	217	467	1,007

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Culver Drive to Palo Lado

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,081 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,647 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.40	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.83	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.79	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.2	66.5	60.4	69.0	69.6
Medium Trucks:	62.7	62.0	55.6	54.1	62.6	62.8
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.9	69.9	67.0	62.1	70.7	71.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	93	200	432	930
CNEL:	100	216	464	1,001

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: SR-261 SB Off-Ramp to SR-261 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,115 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,567 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.27	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.97	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.92	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.1	66.3	60.3	68.9	69.5
Medium Trucks:	62.5	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	70.7	69.8	66.9	62.0	70.5	71.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	196	423	911
CNEL:	98	211	455	980

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Old Myford Road to Market Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,303 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,583 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.30	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-15.94	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.90	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.1	66.4	60.3	68.9	69.5
Medium Trucks:	62.6	61.9	55.5	54.0	62.5	62.7
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	70.8	69.8	66.9	62.0	70.6	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	197	425	915
CNEL:	98	212	457	984

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Bosque (LY Street) to Modjeska

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,785 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,540 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.23	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.01	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.97	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.3	60.2	68.8	69.5
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6
Heavy Trucks:	62.5	61.9	52.9	54.2	62.5	62.6
Vehicle Noise:	70.7	69.8	66.8	61.9	70.5	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	195	420	905
CNEL:	97	210	452	974

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Jamboree Road to Old Myford Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,658 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,529 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.03	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.99	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.3	60.2	68.8	69.4
Medium Trucks:	62.5	61.8	55.4	53.9	62.4	62.6
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	70.7	69.7	66.8	61.9	70.5	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	194	419	902
CNEL:	97	209	451	971

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Market Place to SR-261 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,542 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,520 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.19	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.05	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.00	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.2	60.2	68.8	69.4
Medium Trucks:	62.5	61.8	55.4	53.9	62.3	62.6
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6
Vehicle Noise:	70.7	69.7	66.8	61.9	70.5	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	194	418	900
CNEL:	97	209	449	968



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Jeffrey Road to Groveland

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,798 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,541 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	1.23	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.01	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-19.97	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	68.0	66.3	60.2	68.8	69.5
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6
Heavy Trucks:	62.5	61.9	52.9	54.2	62.5	62.6
Vehicle Noise:	70.7	69.8	66.8	61.9	70.5	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	195	420	905
CNEL:	97	210	452	974

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Bake Parkway to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,721 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,370 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.92	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.31	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.27	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.8	67.7	66.0	59.9	68.5	69.2	
Medium Trucks:	62.2	61.5	55.2	53.6	62.1	62.3	
Heavy Trucks:	62.2	61.6	52.6	53.9	62.2	62.3	
Vehicle Noise:	70.4	69.5	66.5	61.6	70.2	70.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	186	401	864
CNEL:	93	200	431	930

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred Project Name: Irvine GP  
 Road Name: Irvine Boulevard Job Number: 15937  
 Road Segment: Independence Way (The Groves)/The Groves to Jeffrey Road

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,654 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,364 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.91	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.32	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.28	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	66.0	59.9	68.5	69.1
Medium Trucks:	62.2	61.5	55.2	53.6	62.1	62.3
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	70.4	69.4	66.5	61.6	70.2	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	186	400	863
CNEL:	93	200	431	928

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Chinon (B Street) to Merit

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,405 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,261 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.72	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.52	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.47	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	68.9
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.0	61.4	52.4	53.7	62.0	62.1
Vehicle Noise:	70.2	69.3	66.3	61.4	70.0	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	180	389	837
CNEL:	90	194	418	901

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: SR-261 NB Off-Ramp to Central Park

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,914 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,303 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.80	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.44	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.39	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.9	59.8	68.4	69.0
Medium Trucks:	62.1	61.4	55.0	53.5	62.0	62.2
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2
Vehicle Noise:	70.3	69.3	66.4	61.5	70.1	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	183	393	848
CNEL:	91	196	423	912

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred Project Name: Irvine GP  
 Road Name: Irvine Boulevard Job Number: 15937  
 Road Segment: Pueblo Norte to Independence Way (The Groves)/ Parkwood

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 27,208 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,245 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos: 77.5% 12.9% 9.6% 97.42% Medium Trucks: 84.8% 4.9% 10.3% 1.84% Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
	<b>Noise Source Elevations (in feet)</b>				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0				
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.69	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.55	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.51	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.7	59.7	68.3	68.9
Medium Trucks:	62.0	61.3	54.9	53.4	61.8	62.1
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	70.2	69.2	66.3	61.4	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	180	387	833
CNEL:	90	193	416	897

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Yale Avenue to Pueblo Norte

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,027 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,230 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.66	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.58	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.53	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.5	65.7	59.7	68.3	68.9
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.0
Heavy Trucks:	62.0	61.4	52.3	53.6	61.9	62.1
Vehicle Noise:	70.1	69.2	66.2	61.4	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	179	385	830
CNEL:	89	192	414	893

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Modjeska to Pusan Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,040 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,148 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.50	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.74	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.70	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	61.8	61.1	54.7	53.2	61.7	61.9
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	70.0	69.0	66.1	61.2	69.8	70.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	376	809
CNEL:	87	188	404	871



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Central Park Avenue to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,271 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,002 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.19	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.05	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.00	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.0	65.2	59.2	67.8	68.4
Medium Trucks:	61.5	60.8	54.4	52.9	61.3	61.6
Heavy Trucks:	61.5	60.9	51.9	53.1	61.5	61.6
Vehicle Noise:	69.7	68.7	65.8	60.9	69.5	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	358	772
CNEL:	83	179	386	831

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Parker to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,781 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,879 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.08	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.32	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.28	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	66.7	65.0	58.9	67.5	68.1	
Medium Trucks:	61.2	60.5	54.2	52.6	61.1	61.3	
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3	
Vehicle Noise:	69.4	68.5	65.5	60.6	69.2	69.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	344	740
CNEL:	80	172	370	796

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Boulevard  
 Road Segment: Alton Parkway to Fairbanks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,955 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,481 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-18.35	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-22.31	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.8	65.7	63.9	57.9	66.5	67.1	
Medium Trucks:	60.2	59.5	53.1	51.6	60.0	60.3	
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3	
Vehicle Noise:	68.3	67.4	64.5	59.6	68.1	68.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	293	632
CNEL:	68	146	315	680

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred Project Name: Irvine GP  
 Road Name: Irvine Center Drive Job Number: 15937  
 Road Segment: Entertainment (Enterprise/Fortune) to I-405 SB Off- Ramp

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 52,865 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,361 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos: 77.5% 12.9% 9.6% 97.42%				
	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
	<b>Noise Source Elevations (in feet)</b>				
	Autos: 2.000				
	Medium Trucks: 4.000				
	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos: 69.914				
	Medium Trucks: 69.857				
	Heavy Trucks: 69.914				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.99	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.25	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.21	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.6	67.9	61.8	70.4	71.0
Medium Trucks:	64.3	63.6	57.2	55.7	64.1	64.4
Heavy Trucks:	64.7	64.1	55.1	56.3	64.7	64.8
Vehicle Noise:	72.4	71.5	68.4	63.7	72.2	72.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	112	242	521	1,122
CNEL:	121	260	559	1,205

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Orange Tree to Valley Oak Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 48,280 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,983 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.59	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.64	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.60	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.9	68.8	67.1	61.0	69.6	70.2
Medium Trucks:	63.5	62.8	56.4	54.9	63.3	63.6
Heavy Trucks:	63.9	63.3	54.3	55.5	63.9	64.0
Vehicle Noise:	71.6	70.7	67.6	62.8	71.4	71.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	104	224	483	1,041
CNEL:	112	241	519	1,118

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: I-405 SB Off-Ramp to Research

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 48,133 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,971 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.58	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.66	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.61	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.3	69.2	67.5	61.4	70.0	70.6
Medium Trucks:	63.9	63.2	56.8	55.3	63.7	64.0
Heavy Trucks:	64.3	63.7	54.7	55.9	64.3	64.4
Vehicle Noise:	72.0	71.1	68.0	63.2	71.8	72.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	105	227	489	1,054
CNEL:	113	244	525	1,132

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Irvine Valley College to Orange Tree

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 47,178 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,892 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.49	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.74	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.70	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.8	68.7	67.0	60.9	69.5	70.1	
Medium Trucks:	63.4	62.7	56.3	54.8	63.2	63.5	
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9	
Vehicle Noise:	71.5	70.6	67.5	62.7	71.3	71.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	102	221	476	1,025
CNEL:	110	237	511	1,101

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Fontaine Avenue to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,870 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,702 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.28	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.96	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.92	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.8	60.7	69.3	69.9
Medium Trucks:	63.1	62.5	56.1	54.6	63.0	63.3
Heavy Trucks:	63.6	63.0	53.9	55.2	63.5	63.7
Vehicle Noise:	71.3	70.4	67.3	62.5	71.1	71.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	99	214	460	991
CNEL:	107	229	494	1,065



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Culver Drive to Deerwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,248 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,650 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.02	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.98	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.5	68.5	66.7	60.6	69.3	69.9
Medium Trucks:	63.1	62.4	56.1	54.5	63.0	63.2
Heavy Trucks:	63.5	62.9	53.9	55.1	63.5	63.6
Vehicle Noise:	71.2	70.3	67.3	62.5	71.0	71.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	212	456	982
CNEL:	106	227	490	1,055

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Deerwood to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 43,804 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,614 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.17	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.07	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.02	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.5	68.4	66.6	60.6	69.2	69.8
Medium Trucks:	63.0	62.4	56.0	54.5	62.9	63.2
Heavy Trucks:	63.5	62.9	53.8	55.1	63.4	63.6
Vehicle Noise:	71.2	70.3	67.2	62.4	71.0	71.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	210	453	976
CNEL:	105	226	486	1,048

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Yale Avenue to Fontaine Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,189 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,646 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.03	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.99	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.5	68.5	66.7	60.6	69.3	69.9	
Medium Trucks:	63.1	62.4	56.0	54.5	63.0	63.2	
Heavy Trucks:	63.5	62.9	53.9	55.1	63.5	63.6	
Vehicle Noise:	71.2	70.3	67.2	62.5	71.0	71.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	98	211	455	981
CNEL:	105	227	489	1,054

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Jeffrey Road to Irvine Valley College

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 43,078 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,554 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.10	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.14	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.10	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.4	68.3	66.6	60.5	69.1	69.7
Medium Trucks:	63.0	62.3	55.9	54.4	62.9	63.1
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	71.1	70.2	67.1	62.4	70.9	71.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	96	208	448	965
CNEL:	104	223	481	1,036

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Alton Parkway to Spectrum

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 40,201 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,317 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.80	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.44	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.40	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.1	68.0	66.3	60.2	68.8	69.4	
Medium Trucks:	62.7	62.0	55.6	54.1	62.5	62.8	
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2	
Vehicle Noise:	70.8	69.9	66.8	62.1	70.6	71.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	428	921
CNEL:	99	213	459	990

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Spectrum to Pacifica

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,643 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,271 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.74	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.50	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.46	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.0	68.0	66.2	60.2	68.8	69.4	
Medium Trucks:	62.6	61.9	55.6	54.0	62.5	62.7	
Heavy Trucks:	63.0	62.4	53.4	54.7	63.0	63.1	
Vehicle Noise:	70.7	69.8	66.8	62.0	70.5	71.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	91	197	424	913
CNEL:	98	211	455	981

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Hearthstone to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 38,654 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,189 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.63	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.61	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.57	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.9	66.1	60.1	68.7	69.3
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0
Vehicle Noise:	70.6	69.7	66.7	61.9	70.4	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	193	417	897
CNEL:	96	208	448	964

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Charter to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 36,795 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,036 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.41	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.82	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.78	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.7	65.9	59.8	68.5	69.1
Medium Trucks:	62.3	61.6	55.2	53.7	62.2	62.4
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.4	69.5	66.5	61.7	70.2	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	187	403	868
CNEL:	93	201	433	933



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Jamboree Road to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 35,164 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,901 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.22	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.02	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.98	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.5	67.5	65.7	59.6	68.3	68.9	
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2	
Heavy Trucks:	62.5	61.9	52.9	54.1	62.5	62.6	
Vehicle Noise:	70.2	69.3	66.3	61.5	70.0	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	182	391	843
CNEL:	91	195	420	905

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Pacifica to Entertainment (Enterprise/Fortune)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 35,691 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,944 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.28	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.96	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.91	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	68.9
Medium Trucks:	62.2	61.5	55.1	53.6	62.0	62.3
Heavy Trucks:	62.6	62.0	52.9	54.2	62.6	62.7
Vehicle Noise:	70.3	69.4	66.3	61.5	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	183	395	851
CNEL:	91	197	424	914

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 35,398 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,920 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.25	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.99	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.95	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.7	59.7	68.3	68.9
Medium Trucks:	62.1	61.4	55.1	53.5	62.0	62.2
Heavy Trucks:	62.5	61.9	52.9	54.2	62.5	62.6
Vehicle Noise:	70.2	69.3	66.3	61.5	70.0	70.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	182	393	846
CNEL:	91	196	422	909

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Harvard Avenue to Hearthstone

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,081 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,729 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.95	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.29	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.24	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.2	65.4	59.4	68.0	68.6
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9
Heavy Trucks:	62.2	61.7	52.6	53.9	62.2	62.3
Vehicle Noise:	70.0	69.0	66.0	61.2	69.8	70.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	376	809
CNEL:	87	187	403	869

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Research to Hubble

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,315 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,584 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.52	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.48	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	67.0	65.2	59.1	67.8	68.4
Medium Trucks:	61.6	60.9	54.5	53.0	61.5	61.7
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	69.7	68.8	65.8	61.0	69.5	70.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	168	362	780
CNEL:	84	181	389	838

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Barranca Parkway to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,428 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,510 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.59	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.65	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.61	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.8	65.1	59.0	67.6	68.2
Medium Trucks:	61.5	60.8	54.4	52.9	61.3	61.6
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	69.6	68.7	65.6	60.8	69.4	69.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	355	765
CNEL:	82	177	382	822

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Bake Parkway to Muller

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 30,410 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,509 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.59	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.65	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.61	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.9	66.8	65.1	59.0	67.6	68.2	
Medium Trucks:	61.5	60.8	54.4	52.9	61.3	61.6	
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0	
Vehicle Noise:	69.6	68.7	65.6	60.8	69.4	69.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	165	355	765
CNEL:	82	177	381	822

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Discovery to Charter

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,581 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,523 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.61	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.63	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.58	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.9	65.1	59.0	67.7	68.3
Medium Trucks:	61.5	60.8	54.4	52.9	61.4	61.6
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	69.6	68.7	65.7	60.9	69.4	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	356	768
CNEL:	82	178	383	825



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Hubble to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,602 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,360 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.32	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.92	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.87	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.6	66.6	64.8	58.7	67.4	68.0	
Medium Trucks:	61.2	60.5	54.2	52.6	61.1	61.3	
Heavy Trucks:	61.6	61.0	52.0	53.2	61.6	61.7	
Vehicle Noise:	69.3	68.4	65.4	60.6	69.1	69.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	158	341	734
CNEL:	79	170	366	789

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Muller to Tesla

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,299 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,252 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.12	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.08	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.4	64.6	58.5	67.2	67.8
Medium Trucks:	61.0	60.3	54.0	52.4	60.9	61.1
Heavy Trucks:	61.4	60.8	51.8	53.0	61.4	61.5
Vehicle Noise:	69.1	68.2	65.2	60.4	68.9	69.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	71	153	330	712
CNEL:	76	165	355	765

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Sand Canyon Avenue to Odyssey

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 26,025 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,147 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.91	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.33	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.28	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.2	66.2	64.4	58.3	67.0	67.6	
Medium Trucks:	60.8	60.1	53.7	52.2	60.7	60.9	
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3	
Vehicle Noise:	68.9	68.0	65.0	60.2	68.7	69.2	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	149	320	689
CNEL:	74	160	344	741

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Tesla to Scientific Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,537 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,107 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.83	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.41	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.37	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.1	64.3	58.2	66.9	67.5
Medium Trucks:	60.7	60.0	53.7	52.1	60.6	60.8
Heavy Trucks:	61.1	60.5	51.5	52.7	61.1	61.2
Vehicle Noise:	68.8	67.9	64.9	60.1	68.6	69.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	68	147	316	681
CNEL:	73	158	339	731

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Scientific Way to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,377 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,011 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.63	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.61	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.57	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.9	65.9	64.1	58.0	66.7	67.3
Medium Trucks:	60.5	59.8	53.5	51.9	60.4	60.6
Heavy Trucks:	60.9	60.3	51.3	52.5	60.9	61.0
Vehicle Noise:	68.6	67.7	64.7	59.9	68.4	68.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	142	306	660
CNEL:	71	153	329	709

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Gateway Boulevard to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,257 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,919 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.42	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.82	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.77	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.7	63.9	57.8	66.5	67.1
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4
Heavy Trucks:	60.7	60.1	51.1	52.3	60.7	60.8
Vehicle Noise:	68.4	67.5	64.5	59.7	68.2	68.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	138	297	640
CNEL:	69	148	319	687

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Laguna Canyon Road to Discovery

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,090 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,905 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.39	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.85	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.80	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.6	63.9	57.8	66.4	67.0
Medium Trucks:	60.3	59.6	53.2	51.7	60.1	60.4
Heavy Trucks:	60.7	60.1	51.1	52.3	60.7	60.8
Vehicle Noise:	68.4	67.5	64.4	59.6	68.2	68.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	137	295	637
CNEL:	68	147	317	684

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive  
 Road Segment: Odyssey to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,690 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,872 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.31	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-16.92	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-20.88	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.6	63.8	57.7	66.4	67.0
Medium Trucks:	60.2	59.5	53.1	51.6	60.1	60.3
Heavy Trucks:	60.6	60.0	51.0	52.2	60.6	60.7
Vehicle Noise:	68.3	67.4	64.4	59.6	68.1	68.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	136	292	629
CNEL:	68	146	314	676



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Irvine Center Drive (Edinger)  
 Road Segment: Redhill Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,103 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,226 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.68	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.56	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.52	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.0	67.9	66.2	60.1	68.7	69.3
Medium Trucks:	62.5	61.9	55.5	54.0	62.4	62.7
Heavy Trucks:	63.0	62.4	53.3	54.6	62.9	63.1
Vehicle Noise:	70.7	69.8	66.7	61.9	70.5	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	195	420	904
CNEL:	97	209	451	972

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: I-5 SB Off-Ramp to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 69,825 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,761 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.78	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-12.46	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-16.41	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.7	71.6	69.8	63.8	72.4	73.0
Medium Trucks:	66.1	65.4	59.0	57.5	65.9	66.2
Heavy Trucks:	66.1	65.5	56.5	57.7	66.1	66.2
Vehicle Noise:	74.2	73.3	70.4	65.5	74.0	74.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	156	337	725	1,562
CNEL:	168	362	780	1,681

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 81,685 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 6,739 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.46	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-11.77	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-15.73	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.8	72.7	70.9	64.9	73.5	74.1
Medium Trucks:	67.1	66.5	60.1	58.6	67.0	67.3
Heavy Trucks:	67.2	66.6	57.6	58.8	67.2	67.3
Vehicle Noise:	75.3	74.4	71.5	66.6	75.1	75.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	176	379	817	1,759
CNEL:	189	408	878	1,893

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Walnut Avenue to Michelle Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 60,362 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,980 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.04	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.0	71.0	69.2	63.1	71.8	72.4	
Medium Trucks:	65.4	64.7	58.4	56.8	65.3	65.5	
Heavy Trucks:	65.5	64.9	55.8	57.1	65.4	65.6	
Vehicle Noise:	73.6	72.7	69.7	64.9	73.4	73.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	142	305	658	1,418
CNEL:	153	329	708	1,525

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: I-405 NB Off-Ramp to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 81,725 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 6,742 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.47	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-11.77	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-15.73	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	75.1	74.1	72.3	66.3	74.9	75.5	
Medium Trucks:	68.5	67.9	61.5	60.0	68.4	68.6	
Heavy Trucks:	68.6	68.0	58.9	60.2	68.5	68.7	
Vehicle Noise:	76.7	75.8	72.8	68.0	76.5	77.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	272	585	1,261	2,718
CNEL:	292	630	1,357	2,924

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Michelle Drive to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 57,750 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,764 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.96	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.28	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.24	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.8	70.8	69.0	63.0	71.6	72.2	
Medium Trucks:	65.2	64.6	58.2	56.7	65.1	65.3	
Heavy Trucks:	65.3	64.7	55.6	56.9	65.2	65.4	
Vehicle Noise:	73.4	72.5	69.5	64.7	73.2	73.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	138	297	639	1,376
CNEL:	148	319	687	1,481

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Main Street to Kelvin Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 70,902 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,849 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.85	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.39	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.35	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.5	73.5	71.7	65.6	74.3	74.9
Medium Trucks:	67.9	67.2	60.9	59.3	67.8	68.0
Heavy Trucks:	67.9	67.4	58.3	59.6	67.9	68.0
Vehicle Noise:	76.1	75.2	72.2	67.3	75.9	76.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	247	533	1,147	2,472
CNEL:	266	573	1,234	2,659

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 87,488 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 7,218 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 130 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 110.0 feet Centerline Dist. to Observer: 110.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 88.792 Medium Trucks: 88.747 Heavy Trucks: 88.792																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.76	-3.84	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-11.48	-3.84	-1.20	-4.96	0.000	0.000
Heavy Trucks:	86.40	-15.43	-3.84	-1.20	-5.14	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.5	71.4	69.7	63.6	72.2	72.8
Medium Trucks:	65.9	65.2	58.9	57.3	65.8	66.0
Heavy Trucks:	65.9	65.3	56.3	57.5	65.9	66.0
Vehicle Noise:	74.1	73.1	70.2	65.3	73.9	74.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	199	430	925	1,994
CNEL:	214	462	996	2,145



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Kelvin Avenue to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 65,797 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,428 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.52	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.71	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.67	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	74.2	73.1	71.4	65.3	73.9	74.5	
Medium Trucks:	67.6	66.9	60.6	59.0	67.5	67.7	
Heavy Trucks:	67.6	67.0	58.0	59.2	67.6	67.7	
Vehicle Noise:	75.8	74.8	71.9	67.0	75.6	76.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	235	507	1,092	2,352
CNEL:	253	545	1,174	2,530

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 65,261 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,384 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.49	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-12.75	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-16.71	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.2	73.1	71.3	65.3	73.9	74.5
Medium Trucks:	67.6	66.9	60.5	59.0	67.4	67.7
Heavy Trucks:	67.6	67.0	58.0	59.2	67.6	67.7
Vehicle Noise:	75.7	74.8	71.9	67.0	75.5	76.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	234	504	1,086	2,339
CNEL:	252	542	1,168	2,516

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Birch Street to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 48,881 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,033 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.23	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.00	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.96	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.1	70.1	68.3	62.2	70.9	71.5
Medium Trucks:	64.5	63.8	57.5	55.9	64.4	64.6
Heavy Trucks:	64.5	64.0	54.9	56.2	64.5	64.6
Vehicle Noise:	72.7	71.8	68.8	63.9	72.5	73.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	123	265	572	1,232
CNEL:	132	285	615	1,325

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Dupont Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 54,705 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,513 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.72	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.52	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.47	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.0	71.0	69.2	63.1	71.8	72.4
Medium Trucks:	65.4	64.7	58.4	56.8	65.3	65.5
Heavy Trucks:	65.4	64.9	55.8	57.1	65.4	65.5
Vehicle Noise:	73.6	72.7	69.7	64.8	73.4	73.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	135	290	625	1,347
CNEL:	145	312	672	1,449

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Alton Parkway to Beckman

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 59,551 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,913 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.09	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.15	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.10	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.8	72.7	70.9	64.9	73.5	74.1	
Medium Trucks:	67.2	66.5	60.1	58.6	67.0	67.3	
Heavy Trucks:	67.2	66.6	57.6	58.8	67.2	67.3	
Vehicle Noise:	75.3	74.4	71.5	66.6	75.1	75.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	220	474	1,021	2,201
CNEL:	237	510	1,099	2,367

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Fairchild Road to Birch Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 50,091 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,133 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.34	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.90	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.85	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.6	70.6	68.8	62.7	71.4	72.0
Medium Trucks:	65.0	64.4	58.0	56.4	64.9	65.1
Heavy Trucks:	65.1	64.5	55.4	56.7	65.0	65.2
Vehicle Noise:	73.2	72.3	69.3	64.5	73.0	73.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	127	274	589	1,270
CNEL:	137	294	634	1,366

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Beckman to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 55,555 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,583 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.79	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.45	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.40	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.5	72.4	70.6	64.6	73.2	73.8
Medium Trucks:	66.9	66.2	59.8	58.3	66.7	67.0
Heavy Trucks:	66.9	66.3	57.3	58.5	66.9	67.0
Vehicle Noise:	75.0	74.1	71.2	66.3	74.8	75.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	210	453	975	2,101
CNEL:	226	487	1,049	2,260

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: I-5 NB Off-Ramp to El Camino Real

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 52,710 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,349 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.56	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.68	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.63	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.2	72.2	70.4	64.3	73.0	73.6	
Medium Trucks:	66.6	66.0	59.6	58.0	66.5	66.7	
Heavy Trucks:	66.7	66.1	57.0	58.3	66.6	66.8	
Vehicle Noise:	74.8	73.9	70.9	66.1	74.6	75.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	203	437	942	2,029
CNEL:	218	470	1,013	2,182



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Campus Drive to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 46,225 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,814 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.99	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.25	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.20	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	71.3	70.2	68.5	62.4	71.0	71.6	
Medium Trucks:	64.7	64.0	57.6	56.1	64.6	64.8	
Heavy Trucks:	64.7	64.1	55.1	56.3	64.7	64.8	
Vehicle Noise:	72.9	71.9	69.0	64.1	72.7	73.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	120	259	559	1,204
CNEL:	129	279	601	1,295

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: El Camino Real to West Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 51,075 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,214 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.42	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.81	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.77	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	73.1	72.0	70.3	64.2	72.8	73.4
Medium Trucks:	66.5	65.8	59.5	57.9	66.4	66.6
Heavy Trucks:	66.5	65.9	56.9	58.1	66.5	66.6
Vehicle Noise:	74.7	73.7	70.8	65.9	74.5	74.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	199	428	922	1,987
CNEL:	214	460	992	2,137

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: West Drive to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 51,212 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,225 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
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	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.44	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-13.80	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-17.76	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	73.1	72.0	70.3	64.2	72.8	73.5	
Medium Trucks:	66.5	65.8	59.5	57.9	66.4	66.6	
Heavy Trucks:	66.5	65.9	56.9	58.2	66.5	66.6	
Vehicle Noise:	74.7	73.8	70.8	65.9	74.5	75.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	199	429	924	1,990
CNEL:	214	461	994	2,141

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Bryan Avenue to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 47,448 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,914 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.10	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	82.40	-14.13	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	86.40	-18.09	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.8	71.7	69.9	63.9	72.5	73.1	
Medium Trucks:	66.2	65.5	59.1	57.6	66.0	66.3	
Heavy Trucks:	66.2	65.6	56.6	57.8	66.2	66.3	
Vehicle Noise:	74.4	73.4	70.5	65.6	74.2	74.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	189	407	878	1,891
CNEL:	203	438	944	2,035

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Koll Center to Fairchild Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 42,241 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,485 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.60	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.64	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.59	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.9	69.8	68.1	62.0	70.6	71.2
Medium Trucks:	64.3	63.6	57.2	55.7	64.2	64.4
Heavy Trucks:	64.3	63.7	54.7	55.9	64.3	64.4
Vehicle Noise:	72.5	71.5	68.6	63.7	72.3	72.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	244	526	1,133
CNEL:	122	263	566	1,219

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: MacArthur Boulevard to Koll Center

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 41,473 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,422 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	2.52	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-14.72	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-18.67	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.8	69.8	68.0	61.9	70.6	71.2	
Medium Trucks:	64.2	63.5	57.2	55.6	64.1	64.3	
Heavy Trucks:	64.2	63.6	54.6	55.9	64.2	64.3	
Vehicle Noise:	72.4	71.5	68.5	63.6	72.2	72.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	112	241	520	1,120
CNEL:	120	259	559	1,204

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Irvine Boulevard to Portola Pakway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,128 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,403 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos:	77.5%	12.9%	9.6%	97.42%
	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
	<b>Noise Source Elevations (in feet)</b>				
	Autos:	2.000			
	Medium Trucks:	4.000			
	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos:	74.458			
	Medium Trucks:	74.404			
	Heavy Trucks:	74.458			

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.99	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.25	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.21	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.9	67.8	66.0	60.0	68.6	69.2	
Medium Trucks:	62.3	61.6	55.2	53.7	62.1	62.4	
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4	
Vehicle Noise:	70.4	69.5	66.6	61.7	70.2	70.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	188	405	872
CNEL:	94	202	436	938

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Warner Avenue to Edinger Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 87,248 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 7,198 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 96 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 64.0 feet Centerline Dist. to Observer: 64.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.438 Medium Trucks: 42.344 Heavy Trucks: 42.439																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	5.75	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-11.49	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-15.44	0.96	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	77.3	76.2	74.5	68.4	77.0	77.6	
Medium Trucks:	70.7	70.0	63.7	62.1	70.6	70.8	
Heavy Trucks:	70.7	70.1	61.1	62.3	70.7	70.8	
Vehicle Noise:	78.9	77.9	75.0	70.1	78.7	79.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	242	522	1,125	2,423
CNEL:	261	562	1,210	2,607



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Barranca Parkway to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 72,206 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,957 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 96 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 64.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 64.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 42.438				
Road Grade: 0.0%	Medium Trucks: 42.344				
Left View: -90.0 degrees	Heavy Trucks: 42.439				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.93	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-12.31	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-16.27	0.96	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	76.5	75.4	73.6	67.6	76.2	76.8	
Medium Trucks:	69.9	69.2	62.8	61.3	69.8	70.0	
Heavy Trucks:	69.9	69.3	60.3	61.5	69.9	70.0	
Vehicle Noise:	78.1	77.1	74.2	69.3	77.9	78.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	214	460	991	2,136
CNEL:	230	495	1,067	2,298

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jamboree Road  
 Road Segment: Edinger Avenue to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 66,688 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,502 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 96 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 64.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 64.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 42.438				
Road Grade: 0.0%	Medium Trucks: 42.344				
Left View: -90.0 degrees	Heavy Trucks: 42.439				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	4.58	0.96	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-12.66	0.98	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-16.61	0.96	-1.20	-5.31	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	76.1	75.1	73.3	67.2	75.9	76.5	
Medium Trucks:	69.5	68.9	62.5	60.9	69.4	69.6	
Heavy Trucks:	69.5	69.0	59.9	61.2	69.5	69.7	
Vehicle Noise:	77.7	76.8	73.8	69.0	77.5	78.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	203	436	940	2,026
CNEL:	218	469	1,012	2,179

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Walnut Avenue to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 56,176 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,635 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.49	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.3	68.2	66.4	60.4	69.0	69.6	
Medium Trucks:	63.0	62.4	56.0	54.4	62.9	63.1	
Heavy Trucks:	63.9	63.3	54.2	55.5	63.9	64.0	
Vehicle Noise:	71.1	70.2	67.1	62.4	70.9	71.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	97	208	449	967
CNEL:	104	223	481	1,037

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Jeffrey Road  
 Road Segment: I-5 NB Off-Ramp to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 63,037 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,201 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	5.21	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.03	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-15.98	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.2	69.1	67.4	61.3	69.9	70.5
Medium Trucks:	63.9	63.3	56.9	55.4	63.8	64.1
Heavy Trucks:	64.8	64.2	55.2	56.4	64.8	64.9
Vehicle Noise:	72.0	71.1	68.0	63.3	71.8	72.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	106	228	491	1,059
CNEL:	114	245	527	1,136

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Poplar (Meadows) to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 50,683 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,181 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.26	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-12.98	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-16.93	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.8	66.0	59.9	68.6	69.2
Medium Trucks:	62.6	61.9	55.5	54.0	62.5	62.7
Heavy Trucks:	63.4	62.8	53.8	55.1	63.4	63.5
Vehicle Noise:	70.7	69.8	66.6	61.9	70.5	70.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	194	419	903
CNEL:	97	209	449	968

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 49,443 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,079 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.08	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.04	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.7	65.9	59.8	68.5	69.1	
Medium Trucks:	62.5	61.8	55.4	53.9	62.4	62.6	
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4	
Vehicle Noise:	70.6	69.6	66.5	61.8	70.4	70.8	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	89	191	412	888
CNEL:	95	205	442	952

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Center Drive to Poplar (Meadows)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 48,484 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,000 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.07	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.17	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.12	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.6	65.8	59.7	68.4	69.0
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5
Heavy Trucks:	63.2	62.6	53.6	54.9	63.2	63.3
Vehicle Noise:	70.5	69.6	66.4	61.7	70.3	70.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	189	407	876
CNEL:	94	203	436	940

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Jeffrey Road  
 Road Segment: I-405 NB Off-Ramp to Quail Creek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 49,021 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,044 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	4.12	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.12	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.08	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.9	59.8	68.4	69.0
Medium Trucks:	62.4	61.8	55.4	53.9	62.3	62.6
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4
Vehicle Noise:	70.5	69.6	66.5	61.8	70.3	70.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	190	410	883
CNEL:	95	204	439	947



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Barranca Parkway to Irvine Valley College

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,228 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,896 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.96	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.28	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.24	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.5	65.7	59.6	68.3	68.9
Medium Trucks:	62.3	61.6	55.2	53.7	62.2	62.4
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	70.4	69.4	66.3	61.6	70.2	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	400	861
CNEL:	92	199	429	924

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Quail Creek to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 47,578 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,925 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.99	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.25	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.21	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.6	67.5	65.7	59.7	68.3	68.9	
Medium Trucks:	62.3	61.6	55.3	53.7	62.2	62.4	
Heavy Trucks:	63.1	62.6	53.5	54.8	63.1	63.3	
Vehicle Noise:	70.4	69.5	66.3	61.7	70.2	70.7	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	186	402	865
CNEL:	93	200	431	928

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Valley College to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,665 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,685 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.48	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.2	65.4	59.4	68.0	68.6	
Medium Trucks:	62.0	61.4	55.0	53.5	61.9	62.1	
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0	
Vehicle Noise:	70.1	69.2	66.1	61.4	69.9	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	83	179	385	830
CNEL:	89	192	413	890

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Trabuco Road to Hideaway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 38,113 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,144 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.02	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.21	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.17	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.5	64.8	58.7	67.3	67.9
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	69.4	68.5	65.4	60.7	69.2	69.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	346	746
CNEL:	80	172	372	801

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Hideaway to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 38,065 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,140 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.02	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.22	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.18	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.6	66.5	64.8	58.7	67.3	67.9
Medium Trucks:	61.3	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3
Vehicle Noise:	69.4	68.5	65.4	60.7	69.2	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	346	746
CNEL:	80	172	371	800

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Roosevelt to Grove

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 40,531 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,344 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.29	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.95	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.90	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.2	65.4	59.4	68.0	68.6	
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1	
Heavy Trucks:	62.9	62.3	53.2	54.5	62.8	63.0	
Vehicle Noise:	70.1	69.2	66.0	61.4	69.9	70.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	79	170	366	789
CNEL:	85	182	393	846

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Grove to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,167 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,231 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.14	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.10	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.05	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.1	65.3	59.2	67.9	68.5
Medium Trucks:	61.9	61.2	54.8	53.3	61.8	62.0
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8
Vehicle Noise:	70.0	69.0	65.9	61.2	69.8	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	166	358	771
CNEL:	83	178	384	827

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Bryan Avenue to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,277 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,415 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.88	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.36	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.32	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.4	63.6	57.6	66.2	66.8
Medium Trucks:	60.2	59.5	53.2	51.6	60.1	60.3
Heavy Trucks:	61.0	60.5	51.4	52.7	61.0	61.1
Vehicle Noise:	68.3	67.4	64.2	59.5	68.1	68.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	135	291	626
CNEL:	67	145	312	672



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Encore to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,766 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,218 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.09	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-18.33	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-22.29	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.5	62.4	60.6	54.6	63.2	63.8
Medium Trucks:	57.2	56.6	50.2	48.6	57.1	57.3
Heavy Trucks:	58.1	57.5	48.4	49.7	58.0	58.2
Vehicle Noise:	65.3	64.4	61.2	56.6	65.1	65.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	85	184	397
CNEL:	43	92	197	425

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jeffrey Road  
 Road Segment: Irvine Boulevard to Encore

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,204 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,172 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.26	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-18.50	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-22.46	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.3	62.2	60.5	54.4	63.0	63.6
Medium Trucks:	57.1	56.4	50.0	48.5	56.9	57.2
Heavy Trucks:	57.9	57.3	48.3	49.5	57.9	58.0
Vehicle Noise:	65.1	64.2	61.1	56.4	64.9	65.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	83	179	386
CNEL:	41	89	192	415

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Jeronimo Road  
 Road Segment: Goodyear to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,959 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	657 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.78	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.02	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.97	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.4	61.4	59.6	53.6	62.2	62.8
Medium Trucks:	56.2	55.5	49.2	47.6	56.1	56.3
Heavy Trucks:	57.0	56.4	47.4	48.7	57.0	57.1
Vehicle Noise:	64.3	63.4	60.2	55.5	64.1	64.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	117	252
CNEL:	27	58	125	270

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Jeronimo Road  
 Road Segment: Alton Parkway to Goodyear

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,468 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 616 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.05	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.29	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.25	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.2	61.1	59.3	53.3	61.9	62.5	
Medium Trucks:	55.9	55.2	48.9	47.3	55.8	56.0	
Heavy Trucks:	56.8	56.2	47.1	48.4	56.7	56.9	
Vehicle Noise:	64.0	63.1	59.9	55.3	63.8	64.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	112	241
CNEL:	26	56	120	259

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Old Laguna Canyon Road to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 53,875 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,445 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	3.66	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-13.58	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-17.54	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.5	68.7	62.7	71.3	71.9
Medium Trucks:	64.9	64.3	57.9	56.3	64.8	65.0
Heavy Trucks:	65.0	64.4	55.3	56.6	64.9	65.1
Vehicle Noise:	73.1	72.2	69.2	64.4	72.9	73.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	131	283	610	1,314
CNEL:	141	305	656	1,414

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Laguna Canyon Freeway to Quail Hill Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,794 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,386 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.41	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.64	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.60	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.1	65.3	59.2	67.9	68.5
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6
Heavy Trucks:	61.5	61.0	51.9	53.2	61.5	61.7
Vehicle Noise:	69.7	68.8	65.8	61.0	69.5	70.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	125	269	579
CNEL:	62	134	289	623

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Discovery to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,867 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,144 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.43	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.2	64.5	58.4	67.0	67.6
Medium Trucks:	60.7	60.0	53.7	52.1	60.6	60.8
Heavy Trucks:	60.7	60.1	51.1	52.3	60.7	60.8
Vehicle Noise:	68.9	67.9	65.0	60.1	68.7	69.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	110	237	510
CNEL:	55	118	255	548

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: I-405 Overcrossing to Pasteur

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,576 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 707 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.91	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-21.15	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.11	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.2	57.1	65.7	66.3
Medium Trucks:	59.6	58.9	52.5	51.0	59.5	59.7
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1
Vehicle Noise:	67.7	66.8	63.7	59.0	67.5	68.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	73	158	341
CNEL:	37	79	170	366



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Irvine Center Drive to Discovery

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,516 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 785 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-3.87	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-21.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-25.07	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.7	64.6	62.8	56.8	65.4	66.0	
Medium Trucks:	59.1	58.4	52.0	50.5	58.9	59.2	
Heavy Trucks:	59.1	58.5	49.5	50.7	59.1	59.2	
Vehicle Noise:	67.2	66.3	63.4	58.5	67.0	67.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	85	184	397
CNEL:	43	92	198	427

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Quail Hill Parkway to I-405 Overcrossing

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,576 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	707 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	50.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 42.814				
Road Grade:	0.0%	Medium Trucks: 42.720				
Left View:	-90.0 degrees	Heavy Trucks: 42.814				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.91	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-21.15	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.11	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.2	57.1	65.7	66.3
Medium Trucks:	59.6	58.9	52.5	51.0	59.5	59.7
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1
Vehicle Noise:	67.7	66.8	63.7	59.0	67.5	68.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	73	158	341
CNEL:	37	79	170	366

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Pasteur to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,455 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 698 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-4.39	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-21.63	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-25.58	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.1	64.1	62.3	56.3	64.9	65.5	
Medium Trucks:	58.5	57.9	51.5	50.0	58.4	58.7	
Heavy Trucks:	58.6	58.0	48.9	50.2	58.6	58.7	
Vehicle Noise:	66.7	65.8	62.8	58.0	66.5	67.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	170	367
CNEL:	39	85	183	394

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Waterworks to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,346 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	606 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-5.00	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-22.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-26.19	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.5	63.5	61.7	55.7	64.3	64.9
Medium Trucks:	57.9	57.3	50.9	49.4	57.8	58.0
Heavy Trucks:	58.0	57.4	48.3	49.6	57.9	58.1
Vehicle Noise:	66.1	65.2	62.2	57.4	65.9	66.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	72	155	334
CNEL:	36	77	167	359

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 6,917 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 571 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-5.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-22.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-26.45	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.2	61.4	55.4	64.0	64.6
Medium Trucks:	57.7	57.0	50.6	49.1	57.6	57.8
Heavy Trucks:	57.7	57.1	48.1	49.3	57.7	57.8
Vehicle Noise:	65.9	64.9	62.0	57.1	65.7	66.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	149	321
CNEL:	34	74	160	345

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Laguna Canyon Road  
 Road Segment: Barranca Parkway to Waterworks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,120 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	505 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-5.79	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-23.03	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-26.98	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.7	62.7	60.9	54.9	63.5	64.1
Medium Trucks:	57.1	56.5	50.1	48.6	57.0	57.3
Heavy Trucks:	57.2	56.6	47.5	48.8	57.1	57.3
Vehicle Noise:	65.3	64.4	61.4	56.6	65.1	65.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	137	296
CNEL:	32	68	148	318

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Lake Forest Drive  
 Road Segment: Hidden Canyon to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,173 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,582 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.42	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.66	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.61	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.5	64.7	58.7	67.3	67.9
Medium Trucks:	61.1	60.4	54.1	52.5	61.0	61.2
Heavy Trucks:	61.5	60.9	51.9	53.1	61.5	61.6
Vehicle Noise:	69.2	68.3	65.3	60.5	69.0	69.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	250	539
CNEL:	58	125	269	579

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Lake Forest Drive  
 Road Segment: Bake Parkway to Hidden Canyon (Romano)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,999 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,567 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.46	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.70	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.65	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	66.4	64.7	58.6	67.2	67.8
Medium Trucks:	61.1	60.4	54.0	52.5	60.9	61.2
Heavy Trucks:	61.5	60.9	51.9	53.1	61.5	61.6
Vehicle Noise:	69.2	68.3	65.2	60.4	69.0	69.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	115	249	536
CNEL:	58	124	267	576



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Lake Forest Drive  
 Road Segment: Tesla to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,318 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,181 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.69	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-18.92	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-22.88	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.6	61.8	55.7	64.4	65.0
Medium Trucks:	58.2	57.5	51.2	49.6	58.1	58.3
Heavy Trucks:	58.6	58.0	49.0	50.2	58.6	58.7
Vehicle Noise:	66.3	65.4	62.4	57.6	66.1	66.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	100	215	463
CNEL:	50	107	231	497

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Lake Road  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,144 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 507 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 42.814 Medium Trucks: 42.720 Heavy Trucks: 42.814																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-2.35	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	70.80	-19.59	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	77.97	-23.54	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.1	55.0	53.3	47.2	55.8	56.4
Medium Trucks:	50.9	50.3	43.9	42.4	50.8	51.0
Heavy Trucks:	54.1	53.6	44.5	45.8	54.1	54.2
Vehicle Noise:	59.0	58.1	54.2	50.3	58.8	59.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	42	90
CNEL:	10	21	44	95

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Lynx  
 Road Segment: Irvine Boulevard to Astor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,246 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 103 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-9.28	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-26.52	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-30.47	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	50.1	49.0	47.3	41.2	49.8	50.4
Medium Trucks:	44.9	44.3	37.9	36.4	44.8	45.0
Heavy Trucks:	48.1	47.5	38.5	39.8	48.1	48.2
Vehicle Noise:	53.0	52.1	48.2	44.3	52.8	53.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	3	6	12	27
CNEL:	3	6	13	28

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: I-405 SB Off-Ramp to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 61,683 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,089 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.87	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-13.37	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-17.33	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	75.0	73.9	72.1	66.1	74.7	75.3
Medium Trucks:	68.2	67.5	61.2	59.6	68.1	68.3
Heavy Trucks:	67.9	67.3	58.3	59.5	67.9	68.0
Vehicle Noise:	76.5	75.5	72.6	67.7	76.3	76.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	261	562	1,212	2,610
CNEL:	281	606	1,305	2,812

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Main Street to I-405 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 60,713 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 5,009 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 60 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.80	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-13.44	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-17.40	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.9	73.8	72.1	66.0	74.6	75.3
Medium Trucks:	68.1	67.5	61.1	59.6	68.0	68.3
Heavy Trucks:	67.8	67.2	58.2	59.4	67.8	67.9
Vehicle Noise:	76.4	75.5	72.6	67.6	76.2	76.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	258	556	1,199	2,583
CNEL:	278	599	1,291	2,782

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: I-405 NB Off-Ramp and I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 59,791 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,933 vehicles Vehicle Speed: 60 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	73.22	3.73	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	83.68	-13.51	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	87.33	-17.46	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	74.8	73.8	72.0	66.0	74.6	75.2
Medium Trucks:	68.1	67.4	61.0	59.5	68.0	68.2
Heavy Trucks:	67.8	67.2	58.1	59.4	67.7	67.9
Vehicle Noise:	76.3	75.4	72.5	67.6	76.1	76.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	256	551	1,187	2,557
CNEL:	275	593	1,278	2,754

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Jamboree Road to Fairchild Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,795 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,283 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.21	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.03	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.98	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	66.7	64.9	58.9	67.5	68.1	
Medium Trucks:	61.5	60.9	54.5	53.0	61.4	61.6	
Heavy Trucks:	62.4	61.8	52.8	54.0	62.4	62.5	
Vehicle Noise:	69.6	68.7	65.6	60.9	69.4	69.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	357	768
CNEL:	82	178	382	824

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Fairchild Road to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 39,408 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,251 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.17	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.07	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.02	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.7	66.7	64.9	58.8	67.5	68.1
Medium Trucks:	61.5	60.8	54.5	52.9	61.4	61.6
Heavy Trucks:	62.3	61.7	52.7	54.0	62.3	62.4
Vehicle Noise:	69.6	68.7	65.5	60.8	69.4	69.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	164	354	763
CNEL:	82	176	380	819



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Fitch to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 41,553 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,428 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.40	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.84	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.79	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	62.1	61.5	55.1	53.5	62.0	62.2
Heavy Trucks:	63.0	62.4	53.3	54.6	63.0	63.1
Vehicle Noise:	70.2	69.3	66.2	61.5	70.0	70.5

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	173	372	802
CNEL:	86	185	399	860

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Michelson Drive to Douglas

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,212 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,730 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.77	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-13.47	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-17.43	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.1	67.3	61.2	69.9	70.5
Medium Trucks:	63.9	63.2	56.8	55.3	63.8	64.0
Heavy Trucks:	64.7	64.1	55.1	56.3	64.7	64.8
Vehicle Noise:	72.0	71.0	67.9	63.2	71.8	72.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	131	282	608	1,310
CNEL:	141	303	652	1,405

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Douglas to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,000 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,713 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.75	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-13.49	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-17.45	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.0	67.3	61.2	69.8	70.4
Medium Trucks:	63.9	63.2	56.8	55.3	63.7	64.0
Heavy Trucks:	64.7	64.1	55.1	56.3	64.7	64.8
Vehicle Noise:	71.9	71.0	67.9	63.2	71.7	72.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	131	281	606	1,306
CNEL:	140	302	650	1,401

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Skypark to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,180 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,737 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.42	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.82	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.77	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.3	64.6	58.5	67.1	67.7
Medium Trucks:	61.2	60.5	54.1	52.6	61.0	61.3
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	69.2	68.3	65.2	60.5	69.0	69.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	149	320	690
CNEL:	74	160	344	740

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Redhill Avenue to Skypark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,075 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,316 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.70	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.54	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.50	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.3	65.2	63.4	57.4	66.0	66.6	
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1	
Heavy Trucks:	60.9	60.3	51.2	52.5	60.8	61.0	
Vehicle Noise:	68.1	67.2	64.0	59.4	67.9	68.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	283	609
CNEL:	65	141	303	653

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Birch Street to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 21,177 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,747 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.47	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.77	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.72	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.0	64.0	62.2	56.2	64.8	65.4
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9
Heavy Trucks:	59.6	59.0	50.0	51.3	59.6	59.7
Vehicle Noise:	66.9	66.0	62.8	58.1	66.7	67.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	50	109	234	504
CNEL:	54	117	251	541

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: MacArthur Boulevard  
 Road Segment: Campus Drive to Birch Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,909 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,972 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.00	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	79.45	-16.24	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	84.25	-20.20	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.3	64.5	58.5	67.1	67.7
Medium Trucks:	61.1	60.4	54.1	52.5	61.0	61.2
Heavy Trucks:	61.9	61.4	52.3	53.6	61.9	62.1
Vehicle Noise:	69.2	68.3	65.1	60.4	69.0	69.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	398	857
CNEL:	92	198	427	919

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Main Street  
 Road Segment: Gillette Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 44,818 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,697 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 69.914				
Road Grade: 0.0%	Medium Trucks: 69.857				
Left View: -90.0 degrees	Heavy Trucks: 69.914				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.73	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.51	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-17.47	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.9	59.8	68.4	69.0
Medium Trucks:	62.5	61.8	55.4	53.9	62.3	62.6
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4
Vehicle Noise:	70.5	69.6	66.5	61.8	70.3	70.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	182	391	843
CNEL:	90	195	420	905



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Main Street  
 Road Segment: MacArthur Boulevard to Mercantile

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,493 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,258 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.18	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-14.06	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-18.02	-2.29	-1.20	-5.23	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	67.1	65.3	59.3	67.9	68.5	
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0	
Heavy Trucks:	62.7	62.2	53.1	54.4	62.7	62.9	
Vehicle Noise:	70.0	69.1	65.9	61.3	69.8	70.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	167	360	775
CNEL:	83	179	386	832

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Main Street  
 Road Segment: Executive Park to MacArthur Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 28,337 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,338 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.74	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.50	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.46	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.2	63.5	57.4	66.0	66.6
Medium Trucks:	60.1	59.4	53.0	51.5	59.9	60.2
Heavy Trucks:	60.9	60.3	51.3	52.5	60.9	61.0
Vehicle Noise:	68.1	67.2	64.1	59.4	67.9	68.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	284	613
CNEL:	66	142	305	657

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Main Street  
 Road Segment: Von Karman Avenue to Cartwright

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,170 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,324 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.48	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.3	65.2	63.4	57.4	66.0	66.6
Medium Trucks:	60.0	59.4	53.0	51.5	59.9	60.1
Heavy Trucks:	60.9	60.3	51.3	52.5	60.9	61.0
Vehicle Noise:	68.1	67.2	64.1	59.4	67.9	68.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	131	283	610
CNEL:	65	141	304	654

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Main Street  
 Road Segment: McDermott to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,342 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,173 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.42	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.82	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.77	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.2	57.1	65.7	66.3
Medium Trucks:	59.7	59.1	52.7	51.2	59.6	59.9
Heavy Trucks:	60.6	60.0	51.0	52.2	60.6	60.7
Vehicle Noise:	67.8	66.9	63.8	59.1	67.6	68.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	126	271	583
CNEL:	63	135	290	626

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Main Street  
 Road Segment: Red Hill Avenue to Executive Circle

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,776 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,127 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.33	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.91	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.87	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.9	64.8	63.1	57.0	65.6	66.2	
Medium Trucks:	59.6	59.0	52.6	51.1	59.5	59.8	
Heavy Trucks:	60.5	59.9	50.9	52.1	60.5	60.6	
Vehicle Noise:	67.7	66.8	63.7	59.0	67.5	68.0	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	58	124	267	575
CNEL:	62	133	286	617

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Main Street  
 Road Segment: Jamboree Road to Union

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,761 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,043 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.15	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.04	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.7	62.9	56.8	65.5	66.1
Medium Trucks:	59.5	58.8	52.4	50.9	59.4	59.6
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	67.5	66.6	63.5	58.8	67.4	67.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	121	260	560
CNEL:	60	129	279	601

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Main Street  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,599 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,204 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.34	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.0	62.2	56.2	64.8	65.4
Medium Trucks:	58.8	58.2	51.8	50.3	58.7	58.9
Heavy Trucks:	59.7	59.1	50.0	51.3	59.7	59.8
Vehicle Noise:	66.9	66.0	62.9	58.2	66.7	67.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	175	377
CNEL:	40	87	188	405

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Main Street  
 Road Segment: Siglo to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,041 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,983 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.02	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.22	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.17	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.5	62.8	56.7	65.3	65.9
Medium Trucks:	59.3	58.7	52.3	50.8	59.2	59.5
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3
Vehicle Noise:	67.4	66.5	63.4	58.7	67.2	67.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	255	549
CNEL:	59	127	273	589



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Main Street  
 Road Segment: Veneto to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,207 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,915 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.87	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.37	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.32	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.4	64.4	62.6	56.5	65.2	65.8
Medium Trucks:	59.2	58.5	52.2	50.6	59.1	59.3
Heavy Trucks:	60.0	59.4	50.4	51.7	60.0	60.1
Vehicle Noise:	67.3	66.4	63.2	58.5	67.1	67.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	249	536
CNEL:	58	124	267	575

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Main Street  
 Road Segment: Paseo Westpark to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,068 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 996 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.97	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.21	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.16	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.2	61.4	55.4	64.0	64.6
Medium Trucks:	58.0	57.3	51.0	49.4	57.9	58.1
Heavy Trucks:	58.8	58.3	49.2	50.5	58.8	59.0
Vehicle Noise:	66.1	65.2	62.0	57.3	65.9	66.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	72	154	332
CNEL:	36	77	166	357

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Main Street  
 Road Segment: Harvard Avenue to San Mateo

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,928 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 984 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.26	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.22	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.1	61.4	55.3	63.9	64.5
Medium Trucks:	58.0	57.3	50.9	49.4	57.8	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.0	65.1	62.0	57.3	65.8	66.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	330
CNEL:	35	76	164	354

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Marine Way  
 Road Segment: Sand Canyon Avenue to Ridge Valley (O Street)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 40,541 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,345 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 42.814				
Road Grade: 0.0%	Medium Trucks: 42.720				
Left View: -90.0 degrees	Heavy Trucks: 42.814				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	3.80	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	77.72	-13.43	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	82.99	-17.39	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.0	69.0	67.2	61.1	69.8	70.4
Medium Trucks:	64.0	63.3	57.0	55.4	63.9	64.1
Heavy Trucks:	65.3	64.7	55.7	56.9	65.3	65.4
Vehicle Noise:	72.0	71.1	67.9	63.3	71.8	72.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	66	143	308	664
CNEL:	71	153	330	711

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Marine Way  
 Road Segment: Alton Parkway to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 31,983 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,639 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.77	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-14.46	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-18.42	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.0	66.0	64.2	58.2	66.8	67.4	
Medium Trucks:	61.0	60.3	54.0	52.4	60.9	61.1	
Heavy Trucks:	62.3	61.7	52.7	54.0	62.3	62.4	
Vehicle Noise:	69.0	68.2	64.9	60.3	68.9	69.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	113	244	525
CNEL:	56	121	261	562

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Marine Way  
 Road Segment: Lynx to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,277 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,663 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">VehicleType</th> <th style="text-align: center;">Day</th> <th style="text-align: center;">Evening</th> <th style="text-align: center;">Night</th> <th style="text-align: center;">Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td style="text-align: center;">77.5%</td> <td style="text-align: center;">12.9%</td> <td style="text-align: center;">9.6%</td> <td style="text-align: center;">97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td style="text-align: center;">84.8%</td> <td style="text-align: center;">4.9%</td> <td style="text-align: center;">10.3%</td> <td style="text-align: center;">1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td style="text-align: center;">86.5%</td> <td style="text-align: center;">2.7%</td> <td style="text-align: center;">10.8%</td> <td style="text-align: center;">0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-14.42	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-18.38	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.1	66.0	64.2	58.2	66.8	67.4	
Medium Trucks:	61.1	60.4	54.0	52.5	60.9	61.2	
Heavy Trucks:	62.4	61.8	52.7	54.0	62.4	62.5	
Vehicle Noise:	69.1	68.2	64.9	60.4	68.9	69.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	245	528
CNEL:	57	122	262	565

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Marine Way  
 Road Segment: County Access to Treble

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 26,072 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,151 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.89	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.31	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.2	65.1	63.3	57.3	65.9	66.5	
Medium Trucks:	60.1	59.5	53.1	51.5	60.0	60.2	
Heavy Trucks:	61.4	60.9	51.8	53.1	61.4	61.5	
Vehicle Noise:	68.2	67.3	64.0	59.4	68.0	68.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	99	213	458
CNEL:	49	106	228	490

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Marine Way  
 Road Segment: Ridge Valley (O Street) to Skyhawk

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,784 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,045 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.67	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.57	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.53	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.9	63.1	57.0	65.7	66.3
Medium Trucks:	59.9	59.2	52.9	51.3	59.8	60.0
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3
Vehicle Noise:	67.9	67.0	63.8	59.2	67.8	68.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	95	205	443
CNEL:	47	102	220	474



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Marine Way  
 Road Segment: Skyhawk to County Access

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,473 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,607 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.62	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.62	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.57	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	63.8	62.1	56.0	64.6	65.2
Medium Trucks:	58.9	58.2	51.8	50.3	58.7	59.0
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3
Vehicle Noise:	66.9	66.0	62.7	58.2	66.7	67.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	175	377
CNEL:	40	87	187	404

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Marine Way  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,909 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,478 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.94	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.5	63.5	61.7	55.6	64.3	64.9	
Medium Trucks:	58.5	57.8	51.5	49.9	58.4	58.6	
Heavy Trucks:	59.8	59.2	50.2	51.4	59.8	59.9	
Vehicle Noise:	66.5	65.6	62.4	57.8	66.3	66.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	165	356
CNEL:	38	82	177	382

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Marine Way  
 Road Segment: Treble to Lynx

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,505 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,362 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.34	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.29	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.1	61.3	55.3	63.9	64.5
Medium Trucks:	58.1	57.5	51.1	49.6	58.0	58.3
Heavy Trucks:	59.5	58.9	49.8	51.1	59.4	59.6
Vehicle Noise:	66.2	65.3	62.0	57.5	66.0	66.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	73	157	338
CNEL:	36	78	168	361

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: McGaw Avenue  
 Road Segment: Von Karman Avenue to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,966 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,152 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-0.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-17.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-21.44	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.8	60.7	59.0	52.9	61.5	62.2	
Medium Trucks:	56.0	55.4	49.0	47.4	55.9	56.1	
Heavy Trucks:	57.9	57.3	48.3	49.5	57.9	58.0	
Vehicle Noise:	64.0	63.2	59.7	55.3	63.9	64.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	113	243
CNEL:	26	56	121	260

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: McGaw Avenue  
 Road Segment: Red Hill Avenue to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,754 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,135 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 35 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-0.31	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-17.55	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-21.50	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.7	60.7	58.9	52.9	61.5	62.1
Medium Trucks:	56.0	55.3	48.9	47.4	55.8	56.1
Heavy Trucks:	57.8	57.2	48.2	49.4	57.8	57.9
Vehicle Noise:	64.0	63.1	59.7	55.3	63.8	64.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	112	241
CNEL:	26	55	119	257

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: McGaw Avenue  
 Road Segment: Daimler to Red Hill Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,179 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	757 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-2.07	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-19.31	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-23.26	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.0	58.9	57.2	51.1	59.7	60.3
Medium Trucks:	54.2	53.5	47.2	45.6	54.1	54.3
Heavy Trucks:	56.1	55.5	46.4	47.7	56.0	56.2
Vehicle Noise:	62.2	61.3	57.9	53.5	62.0	62.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	40	85	184
CNEL:	20	42	91	197

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: McGaw Avenue  
 Road Segment: Jamboree Road to Murphy Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	4,528 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	374 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-22.37	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-26.33	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.9	55.9	54.1	48.0	56.7	57.3
Medium Trucks:	51.1	50.5	44.1	42.6	51.0	51.3
Heavy Trucks:	53.0	52.4	43.4	44.6	53.0	53.1
Vehicle Noise:	59.1	58.3	54.8	50.4	59.0	59.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	25	53	115
CNEL:	12	26	57	123

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Meadowood  
 Road Segment: Culver Drive to Canyonwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,920 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 901 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 25 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	0.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-17.09	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-21.05	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.6	55.6	53.8	47.8	56.4	57.0
Medium Trucks:	51.5	50.8	44.4	42.9	51.3	51.6
Heavy Trucks:	54.7	54.1	45.1	46.3	54.7	54.8
Vehicle Noise:	59.5	58.7	54.8	50.9	59.4	59.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	26	57	122
CNEL:	13	28	60	130



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Meridian  
 Road Segment: Spectrum to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,685 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	222 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-6.74	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-23.97	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-27.93	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.8	51.7	49.9	43.9	52.5	53.1
Medium Trucks:	47.3	46.6	40.2	38.7	47.1	47.4
Heavy Trucks:	49.7	49.2	40.1	41.4	49.7	49.9
Vehicle Noise:	55.3	54.4	50.8	46.6	55.1	55.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	14	29	64
CNEL:	7	15	31	68

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Meridian  
 Road Segment: Alton Parkway to Gateway Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 2,205 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 182 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-7.59	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-24.83	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-28.79	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	51.9	50.9	49.1	43.0	51.7	52.3	
Medium Trucks:	46.4	45.7	39.4	37.8	46.3	46.5	
Heavy Trucks:	48.9	48.3	39.3	40.5	48.9	49.0	
Vehicle Noise:	54.4	53.6	49.9	45.7	54.2	54.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	12	26	56
CNEL:	6	13	28	59

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Merit  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,731 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 308 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-4.52	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-21.75	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-25.71	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	54.9	53.8	52.0	46.0	54.6	55.2	
Medium Trucks:	49.7	49.0	42.7	41.1	49.6	49.8	
Heavy Trucks:	52.9	52.3	43.3	44.5	52.9	53.0	
Vehicle Noise:	57.7	56.9	53.0	49.1	57.6	58.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	12	26	56
CNEL:	6	13	27	59

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Michelson Drive  
 Road Segment: Riparian to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,198 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,079 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.74	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.46	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.0	64.9	63.2	57.1	65.7	66.3
Medium Trucks:	60.0	59.3	52.9	51.4	59.9	60.1
Heavy Trucks:	61.3	60.7	51.7	52.9	61.3	61.4
Vehicle Noise:	68.0	67.1	63.8	59.3	67.8	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	96	208	448
CNEL:	48	103	222	479

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Michelson Drive  
 Road Segment: Almond Tree Lane to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,921 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	818 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.31	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-19.55	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-23.50	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.8	63.8	62.0	56.0	64.6	65.2
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9
Heavy Trucks:	60.1	59.5	50.5	51.8	60.1	60.2
Vehicle Noise:	66.8	66.0	62.7	58.1	66.7	67.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	48	104	225
CNEL:	24	52	112	240

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Michelson Drive  
 Road Segment: Von Karman Avenue to Obsidian

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,736 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,958 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.48	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.76	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.71	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.7	62.9	56.9	65.5	66.1
Medium Trucks:	59.7	59.0	52.7	51.1	59.6	59.8
Heavy Trucks:	61.0	60.4	51.4	52.7	61.0	61.1
Vehicle Noise:	67.8	66.9	63.6	59.0	67.6	68.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	93	200	430
CNEL:	46	99	214	461

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Michelson Drive  
 Road Segment: Parkside to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,429 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,850 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.01	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.96	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.5	64.4	62.7	56.6	65.2	65.8	
Medium Trucks:	59.5	58.8	52.4	50.9	59.4	59.6	
Heavy Trucks:	60.8	60.2	51.2	52.4	60.8	60.9	
Vehicle Noise:	67.5	66.6	63.3	58.8	67.3	67.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	89	192	414
CNEL:	44	96	206	443

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Michelson Drive  
 Road Segment: Gillman to Seton/Sandburg Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,208 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	760 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.63	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-19.87	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	82.99	-23.83	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.5	63.4	61.7	55.6	64.3	64.9
Medium Trucks:	58.5	57.8	51.5	49.9	58.4	58.6
Heavy Trucks:	59.8	59.2	50.2	51.4	59.8	59.9
Vehicle Noise:	66.5	65.6	62.3	57.8	66.3	66.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	46	99	214
CNEL:	23	49	106	229



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Michelson Drive  
 Road Segment: Carlson to Prince

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,093 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,235 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 75.0 feet Centerline Dist. to Observer: 75.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 70.413 Medium Trucks: 70.356 Heavy Trucks: 70.413																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	2.05	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	77.72	-15.18	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	82.99	-19.14	-2.33	-1.20	-5.25	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.0	64.0	62.2	56.1	64.8	65.4	
Medium Trucks:	59.0	58.3	52.0	50.4	58.9	59.1	
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4	
Vehicle Noise:	67.0	66.1	62.9	58.3	66.9	67.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	100	215	463
CNEL:	50	107	230	495

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Michelson Drive  
 Road Segment: MacArthur Boulevard to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,337 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,678 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.81	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.39	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.1	64.0	62.2	56.2	64.8	65.4	
Medium Trucks:	59.0	58.4	52.0	50.5	58.9	59.2	
Heavy Trucks:	60.4	59.8	50.7	52.0	60.3	60.5	
Vehicle Noise:	67.1	66.2	62.9	58.4	66.9	67.3	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	84	180	388
CNEL:	42	90	193	415

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Michelson Drive  
 Road Segment: Harvard Avenue to Parkside

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 18,003 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,485 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-16.96	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-20.92	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.5	63.5	61.7	55.7	64.3	64.9	
Medium Trucks:	58.5	57.8	51.5	49.9	58.4	58.6	
Heavy Trucks:	59.8	59.2	50.2	51.5	59.8	59.9	
Vehicle Noise:	66.6	65.7	62.4	57.8	66.4	66.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	166	358
CNEL:	38	83	178	383

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Michelson Drive  
 Road Segment: Bixby to Von Karman Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,647 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,456 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.00	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.5	63.4	61.6	55.6	64.2	64.8
Medium Trucks:	58.4	57.8	51.4	49.9	58.3	58.5
Heavy Trucks:	59.7	59.2	50.1	51.4	59.7	59.9
Vehicle Noise:	66.5	65.6	62.3	57.7	66.3	66.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	164	353
CNEL:	38	81	175	378

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Michelson Drive  
 Road Segment: Jamboree Road to Carlson

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,364 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,093 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 47.329				
Road Grade: 0.0%	Medium Trucks: 47.244				
Left View: -90.0 degrees	Heavy Trucks: 47.329				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.77	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.47	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.43	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.3	66.3	64.5	58.4	67.1	67.7	
Medium Trucks:	61.3	60.6	54.3	52.7	61.2	61.4	
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7	
Vehicle Noise:	69.3	68.4	65.2	60.6	69.2	69.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	245	527
CNEL:	56	122	262	564

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Michelson Drive  
 Road Segment: Teller to Jamboree Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,600 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,112 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	1.81	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-15.43	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-19.39	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.3	64.5	58.5	67.1	67.7
Medium Trucks:	61.4	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	62.7	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	69.4	68.5	65.2	60.7	69.2	69.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	53	114	246	530
CNEL:	57	122	264	568

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Michelson Drive  
 Road Segment: Jordan East to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,782 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 560 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 29.547 Medium Trucks: 29.411 Heavy Trucks: 29.547																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.96	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	77.72	-21.20	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	82.99	-25.16	3.32	-1.20	-5.77	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.7	63.6	61.8	55.8	64.4	65.0	
Medium Trucks:	58.7	58.0	51.6	50.1	58.6	58.8	
Heavy Trucks:	60.0	59.4	50.3	51.6	59.9	60.1	
Vehicle Noise:	66.7	65.8	62.5	58.0	66.5	66.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	38	81	175
CNEL:	19	40	87	188

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Michelson Drive  
 Road Segment: Culver Drive to Angell

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,789 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 725 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 16 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 39.306 Medium Trucks: 39.205 Heavy Trucks: 39.307																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.84	1.46	-1.20	-4.83	0.000	0.000
Medium Trucks:	77.72	-20.07	1.48	-1.20	-5.08	0.000	0.000
Heavy Trucks:	82.99	-24.03	1.46	-1.20	-5.56	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.9	62.9	61.1	55.1	63.7	64.3	
Medium Trucks:	57.9	57.2	50.9	49.3	57.8	58.0	
Heavy Trucks:	59.2	58.6	49.6	50.9	59.2	59.3	
Vehicle Noise:	65.9	65.1	61.8	57.2	65.8	66.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	45	97	209
CNEL:	22	48	104	223



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Modjeska (A Street)  
 Road Segment: Portola Springs to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,817 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,140 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 24 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15				
<b>Site Data</b>	<b>Vehicle Mix</b>				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	VehicleType	Day	Evening	Night	Daily
	Autos: 77.5% 12.9% 9.6% 97.42% Medium Trucks: 84.8% 4.9% 10.3% 1.84% Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
	<b>Noise Source Elevations (in feet)</b>				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0				
	<b>Lane Equivalent Distance (in feet)</b>				
	Autos: 27.659 Medium Trucks: 27.514 Heavy Trucks: 27.659				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.38	3.75	-1.20	-4.81	0.000	0.000
Medium Trucks:	79.45	-18.62	3.79	-1.20	-5.14	0.000	0.000
Heavy Trucks:	84.25	-22.58	3.75	-1.20	-5.77	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.6	68.6	66.8	60.7	69.4	70.0	
Medium Trucks:	63.4	62.7	56.4	54.8	63.3	63.5	
Heavy Trucks:	64.2	63.6	54.6	55.9	64.2	64.3	
Vehicle Noise:	71.5	70.6	67.4	62.7	71.3	71.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	169	365
CNEL:	39	84	182	392

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Modjeska (A Street)  
 Road Segment: South of Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,834 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 151 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-10.15	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-27.39	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-31.35	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.9	57.9	56.1	50.1	58.7	59.3
Medium Trucks:	52.7	52.0	45.7	44.1	52.6	52.8
Heavy Trucks:	53.5	53.0	43.9	45.2	53.5	53.6
Vehicle Noise:	60.8	59.9	56.7	52.0	60.6	61.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	41	88
CNEL:	9	20	44	95

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Muirlands Boulevard  
 Road Segment: Bake Parkway to City Limits

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,807 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,222 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.08	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.32	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.28	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.1	62.3	56.2	64.9	65.5
Medium Trucks:	58.9	58.2	51.9	50.3	58.8	59.0
Heavy Trucks:	59.7	59.1	50.1	51.4	59.7	59.8
Vehicle Noise:	67.0	66.1	62.9	58.2	66.8	67.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	177	381
CNEL:	41	88	190	409

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Muirlands Boulevard  
 Road Segment: Alton Parkway to Sterling

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,970 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 988 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.20	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.2	63.1	61.4	55.3	63.9	64.6	
Medium Trucks:	58.0	57.3	50.9	49.4	57.8	58.1	
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9	
Vehicle Noise:	66.0	65.1	62.0	57.3	65.9	66.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	331
CNEL:	35	76	165	355

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Muirlands Boulevard  
 Road Segment: Wrigley to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,970 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 988 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.24	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.20	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.1	61.4	55.3	63.9	64.6
Medium Trucks:	58.0	57.3	50.9	49.4	57.8	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.0	65.1	62.0	57.3	65.9	66.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	331
CNEL:	35	76	165	355

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Newport Coast Drive  
 Road Segment: SR-73 NB Off-Ramp to Turtle Ridge

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 17,310 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,428 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.13	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.09	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.4	63.3	61.5	55.5	64.1	64.7	
Medium Trucks:	58.3	57.7	51.3	49.8	58.2	58.5	
Heavy Trucks:	59.7	59.1	50.0	51.3	59.6	59.8	
Vehicle Noise:	66.4	65.5	62.2	57.7	66.2	66.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	75	162	348
CNEL:	37	80	173	373

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Newport Coast Drive  
 Road Segment: Turtle Crest to Bonita Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,122 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,000 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.44	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.68	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.63	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.8	61.8	60.0	53.9	62.6	63.2
Medium Trucks:	56.8	56.1	49.8	48.2	56.7	56.9
Heavy Trucks:	58.1	57.5	48.5	49.7	58.1	58.2
Vehicle Noise:	64.8	63.9	60.7	56.1	64.6	65.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	59	128	275
CNEL:	29	63	137	294

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Nightmist  
 Road Segment: Sand Canyon Avenue to Tulip (Road C)

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,501 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 949 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.42	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.66	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.61	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.1	58.0	56.3	50.2	58.8	59.4
Medium Trucks:	53.6	52.9	46.6	45.0	53.5	53.7
Heavy Trucks:	56.1	55.5	46.4	47.7	56.0	56.2
Vehicle Noise:	61.6	60.7	57.1	52.9	61.4	61.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	36	78	167
CNEL:	18	38	83	178



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Northwood  
 Road Segment: Yale Avenue to Savannah

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,741 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 391 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-4.94	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-22.17	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-26.13	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.0	58.9	57.2	51.1	59.7	60.3	
Medium Trucks:	54.2	53.6	47.2	45.6	54.1	54.3	
Heavy Trucks:	56.1	55.5	46.4	47.7	56.1	56.2	
Vehicle Noise:	62.2	61.3	57.9	53.5	62.0	62.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	51	111
CNEL:	12	25	55	118

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Northwood  
 Road Segment: Goldrush to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,801 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	314 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.90	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-23.13	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-27.09	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.0	58.0	56.2	50.2	58.8	59.4
Medium Trucks:	53.3	52.6	46.2	44.7	53.2	53.4
Heavy Trucks:	55.1	54.5	45.5	46.7	55.1	55.2
Vehicle Noise:	61.3	60.4	56.9	52.6	61.1	61.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	10	21	44	95
CNEL:	10	22	47	102

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Oak Canyon Drive  
 Road Segment: Valley Oak Drive to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,109 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 999 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.96	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-19.19	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-23.15	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.1	64.3	58.3	66.9	67.5
Medium Trucks:	60.9	60.2	53.9	52.3	60.8	61.0
Heavy Trucks:	61.7	61.2	52.1	53.4	61.7	61.8
Vehicle Noise:	69.0	68.1	64.9	60.2	68.8	69.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	144	311
CNEL:	33	72	155	334

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Pacifica  
 Road Segment: Gateway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,565 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,037 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-1.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-22.48	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.0	61.9	60.2	54.1	62.7	63.3
Medium Trucks:	57.0	56.3	49.9	48.4	56.8	57.1
Heavy Trucks:	58.3	57.7	48.6	49.9	58.3	58.4
Vehicle Noise:	65.0	64.1	60.8	56.3	64.8	65.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	131	281
CNEL:	30	65	140	301

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Pacifica  
 Road Segment: Alton Parkway to Gateway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,495 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 783 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.50	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.74	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.69	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.8	60.7	58.9	52.9	61.5	62.1
Medium Trucks:	55.7	55.1	48.7	47.2	55.6	55.9
Heavy Trucks:	57.1	56.5	47.4	48.7	57.0	57.2
Vehicle Noise:	63.8	62.9	59.6	55.1	63.6	64.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	234
CNEL:	25	54	116	250

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred Project Name: Irvine GP  
 Road Name: Pacifica Job Number: 15937  
 Road Segment: Irvine Center Drive to Fortune Drive (Spectrum Center Drive)

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,083 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 584 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.77	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.01	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.97	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.5	59.4	57.7	51.6	60.2	60.8
Medium Trucks:	54.5	53.8	47.4	45.9	54.3	54.6
Heavy Trucks:	55.8	55.2	46.2	47.4	55.8	55.9
Vehicle Noise:	62.5	61.6	58.3	53.8	62.3	62.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	41	89	192
CNEL:	21	44	95	206

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Pacifica  
 Road Segment: Meridian to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,479 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 370 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-5.76	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-23.00	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-26.96	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	58.5	57.4	55.7	49.6	58.2	58.8	
Medium Trucks:	52.5	51.8	45.4	43.9	52.4	52.6	
Heavy Trucks:	53.8	53.2	44.2	45.4	53.8	53.9	
Vehicle Noise:	60.5	59.6	56.3	51.8	60.3	60.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	30	66	142
CNEL:	15	33	70	152

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Park Place  
 Road Segment: Christamon South to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,750 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	309 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	30 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-5.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-22.52	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-26.48	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.2	53.2	51.4	45.3	54.0	54.6
Medium Trucks:	48.7	48.0	41.7	40.1	48.6	48.8
Heavy Trucks:	51.2	50.6	41.6	42.8	51.2	51.3
Vehicle Noise:	56.7	55.9	52.2	48.0	56.6	57.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	79
CNEL:	8	18	39	85



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred	Project Name: Irvine GP
Road Name: Portola Parkway	Job Number: 15937
Road Segment: Bee Canyon Access Road to Sand Canyon Avenue	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,775 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 2,044 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 55 mph																					
Near/Far Lane Distance: 48 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
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<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 62.5 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 62.5 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 57.786																				
Left View: -90.0 degrees	Medium Trucks: 57.717																				
Right View: 90.0 degrees	Heavy Trucks: 57.787																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.96	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.91	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.8	67.0	60.9	69.6	70.2
Medium Trucks:	63.2	62.5	56.2	54.6	63.1	63.3
Heavy Trucks:	63.2	62.7	53.6	54.9	63.2	63.3
Vehicle Noise:	71.4	70.5	67.5	62.6	71.2	71.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	162	348	751
CNEL:	81	174	375	808

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Portola Parkway  
 Road Segment: Jeffrey Road to Bee Canyon Access Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,694 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,037 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-16.97	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-20.93	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.8	68.7	67.0	60.9	69.5	70.1
Medium Trucks:	63.2	62.5	56.2	54.6	63.1	63.3
Heavy Trucks:	63.2	62.6	53.6	54.9	63.2	63.3
Vehicle Noise:	71.4	70.5	67.5	62.6	71.2	71.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	75	161	348	749
CNEL:	81	174	374	806

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Portola Parkway  
 Road Segment: Arrowhead to Ridge Valley Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,621 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,949 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.07	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.16	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.12	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.8	60.7	69.3	70.0
Medium Trucks:	63.0	62.3	56.0	54.4	62.9	63.1
Heavy Trucks:	63.0	62.4	53.4	54.7	63.0	63.1
Vehicle Noise:	71.2	70.3	67.3	62.4	71.0	71.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	157	338	727
CNEL:	78	169	363	782

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Portola Parkway  
 Road Segment: Sand Canyon Avenue to Arrowhead

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,666 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,787 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.30	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-17.54	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-21.49	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.2	68.2	66.4	60.4	69.0	69.6
Medium Trucks:	62.6	62.0	55.6	54.0	62.5	62.7
Heavy Trucks:	62.7	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	70.8	69.9	66.9	62.1	70.6	71.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	148	319	686
CNEL:	74	159	343	739

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Portola Parkway  
 Road Segment: Portola Springs to SR-241 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,347 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,431 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-1.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-18.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-22.46	-1.05	-1.20	-5.32	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.3	67.2	65.4	59.4	68.0	68.6	
Medium Trucks:	61.7	61.0	54.6	53.1	61.5	61.8	
Heavy Trucks:	61.7	61.1	52.1	53.3	61.7	61.8	
Vehicle Noise:	69.8	68.9	66.0	61.1	69.6	70.1	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	128	275	592
CNEL:	64	137	296	637

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Portola Parkway  
 Road Segment: Gatepark to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,181 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,407 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.99	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.25	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.20	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.9	67.8	66.0	60.0	68.6	69.2	
Medium Trucks:	62.3	61.6	55.2	53.7	62.1	62.4	
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4	
Vehicle Noise:	70.5	69.5	66.6	61.7	70.3	70.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	188	405	873
CNEL:	94	202	436	939

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Portola Parkway  
 Road Segment: ETC-6 (SR-261) NB Off-Ramp to Gatepark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,743 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,371 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
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Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.93	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.31	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.27	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	66.0	59.9	68.5	69.2
Medium Trucks:	62.2	61.5	55.2	53.6	62.1	62.3
Heavy Trucks:	62.2	61.6	52.6	53.9	62.2	62.3
Vehicle Noise:	70.4	69.5	66.5	61.6	70.2	70.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	186	401	864
CNEL:	93	200	432	930

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Portola Parkway  
 Road Segment: SR-261 SB Off-Ramp to SR-261 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,901 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,302 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.80	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.44	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.40	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.6	65.9	59.8	68.4	69.0	
Medium Trucks:	62.1	61.4	55.0	53.5	62.0	62.2	
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2	
Vehicle Noise:	70.3	69.3	66.4	61.5	70.1	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	85	183	393	847
CNEL:	91	196	423	912



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Portola Parkway  
 Road Segment: Jamboree Road to Bellevue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,621 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,279 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.75	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.48	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.44	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.6	67.6	65.8	59.8	68.4	69.0	
Medium Trucks:	62.0	61.4	55.0	53.4	61.9	62.1	
Heavy Trucks:	62.1	61.5	52.4	53.7	62.0	62.2	
Vehicle Noise:	70.2	69.3	66.3	61.5	70.0	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	181	391	842
CNEL:	91	195	420	906

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Portola Parkway  
 Road Segment: Bellevue to ETC-6 (SR-261) SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 27,354 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,257 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.71	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.53	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.48	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.6	67.5	65.8	59.7	68.3	68.9
Medium Trucks:	62.0	61.3	55.0	53.4	61.9	62.1
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	70.2	69.2	66.3	61.4	70.0	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	180	388	836
CNEL:	90	194	418	900

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Portola Parkway  
 Road Segment: Yale Avenue to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,999 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,145 vehicles Vehicle Speed: 55 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	0.49	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-16.75	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-20.70	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.5	59.5	68.1	68.7
Medium Trucks:	61.8	61.1	54.7	53.2	61.6	61.9
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	70.0	69.0	66.1	61.2	69.8	70.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	81	174	375	809
CNEL:	87	187	404	870

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Portola Parkway  
 Road Segment: Culver Drive to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,874 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,887 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-0.06	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	82.40	-17.30	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	86.40	-21.26	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.8	65.0	58.9	67.6	68.2
Medium Trucks:	61.2	60.5	54.2	52.6	61.1	61.3
Heavy Trucks:	61.2	60.7	51.6	52.9	61.2	61.3
Vehicle Noise:	69.4	68.5	65.5	60.6	69.2	69.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	345	742
CNEL:	80	172	371	799

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Portola Parkway  
 Road Segment: Silverado to Portola Springs

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,310 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,016 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 55 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	71.78	-2.76	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	82.40	-19.99	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	86.40	-23.95	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.8	65.7	63.9	57.9	66.5	67.1
Medium Trucks:	60.2	59.5	53.1	51.6	60.1	60.3
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3
Vehicle Noise:	68.4	67.4	64.5	59.6	68.2	68.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	47	101	219	471
CNEL:	51	109	235	507

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Pusan  
 Road Segment: Irvine Boulevard to Cadence

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,449 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	202 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-6.34	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-23.58	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-27.54	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.0	52.0	50.2	44.1	52.8	53.4
Medium Trucks:	47.9	47.2	40.8	39.3	47.7	48.0
Heavy Trucks:	51.1	50.5	41.4	42.7	51.1	51.2
Vehicle Noise:	55.9	55.1	51.2	47.2	55.7	56.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	9	20	42
CNEL:	4	10	21	45

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Quail Hill Parkway  
 Road Segment: Shady Canyon Drive to Passage

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 15,541 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,282 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.87	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.07	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.3	64.3	62.5	56.5	65.1	65.7
Medium Trucks:	59.1	58.4	52.1	50.5	59.0	59.2
Heavy Trucks:	59.9	59.4	50.3	51.6	59.9	60.0
Vehicle Noise:	67.2	66.3	63.1	58.4	67.0	67.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	39	85	183	393
CNEL:	42	91	196	422

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Quail Hill Parkway  
 Road Segment: East Knollcrest to Laguna Canyon Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,900 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	817 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.83	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.02	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.4	62.3	60.6	54.5	63.1	63.7
Medium Trucks:	57.1	56.5	50.1	48.6	57.0	57.3
Heavy Trucks:	58.0	57.4	48.4	49.6	58.0	58.1
Vehicle Noise:	65.2	64.3	61.2	56.5	65.0	65.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	135	291
CNEL:	31	67	145	312



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred Project Name: Irvine GP  
 Road Name: Quassar Drive (Spectrum) Job Number: 15937  
 Road Segment: Irvine Center Drive to Spectrum Center Drive (Fortune)

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,994 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 164 vehicles Vehicle Speed: 25 mph Near/Far Lane Distance: 16 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 39.306 Medium Trucks: 39.205 Heavy Trucks: 39.307																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-7.24	1.46	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-24.48	1.48	-1.20	-5.08	0.000	0.000
Heavy Trucks:	77.97	-28.43	1.46	-1.20	-5.56	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	51.8	50.7	48.9	42.9	51.5	52.1
Medium Trucks:	46.6	45.9	39.6	38.0	46.5	46.7
Heavy Trucks:	49.8	49.2	40.2	41.4	49.8	49.9
Vehicle Noise:	54.6	53.8	49.9	46.0	54.5	54.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	4	8	17	37
CNEL:	4	8	18	39

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Red Hill Avenue  
 Road Segment: MacArthur Boulevard to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,131 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,723 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.30	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.94	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.89	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.6	68.5	66.8	60.7	69.3	70.0
Medium Trucks:	63.2	62.5	56.1	54.6	63.1	63.3
Heavy Trucks:	63.6	63.0	54.0	55.2	63.6	63.7
Vehicle Noise:	71.3	70.4	67.3	62.6	71.1	71.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	100	214	462	995
CNEL:	107	230	496	1,069

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Red Hill Avenue  
 Road Segment: I-405 Over Crossing to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,478 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,854 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.96	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.92	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.2	67.2	65.4	59.3	68.0	68.6	
Medium Trucks:	61.8	61.1	54.8	53.2	61.7	61.9	
Heavy Trucks:	62.2	61.6	52.6	53.8	62.2	62.3	
Vehicle Noise:	69.9	69.0	66.0	61.2	69.7	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	129	278	600
CNEL:	64	139	299	644

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Red Hill Avenue  
 Road Segment: Alton Parkway to Deere Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,238 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,660 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.84	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.40	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.35	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.1	67.1	65.3	59.3	67.9	68.5
Medium Trucks:	61.7	61.0	54.7	53.1	61.6	61.8
Heavy Trucks:	62.1	61.5	52.5	53.8	62.1	62.2
Vehicle Noise:	69.8	68.9	65.9	61.1	69.6	70.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	80	171	369	795
CNEL:	85	184	397	854

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Red Hill Avenue  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,517 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,600 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos:	77.5%	12.9%	9.6%	97.42%
<b>Barrier Height:</b> 0.0 feet	Medium Trucks:	84.8%	4.9%	10.3%	1.84%
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos:	2.000			
Barrier Distance to Observer: 0.0 feet	Medium Trucks:	4.000			
Observer Height (Above Pad): 5.0 feet	Heavy Trucks:	8.006	Grade Adjustment: 0.0		
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos:	74.458			
Road Grade: 0.0%	Medium Trucks:	74.404			
Left View: -90.0 degrees	Heavy Trucks:	74.458			
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.74	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.50	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.45	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.0	67.0	65.2	59.2	67.8	68.4	
Medium Trucks:	61.6	60.9	54.6	53.0	61.5	61.7	
Heavy Trucks:	62.0	61.4	52.4	53.7	62.0	62.1	
Vehicle Noise:	69.7	68.8	65.8	61.0	69.5	70.0	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	78	169	364	783
CNEL:	84	181	391	842

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Red Hill Avenue  
 Road Segment: Deere Avenue to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,497 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,516 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.60	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.64	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.60	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.9	66.8	65.1	59.0	67.6	68.2
Medium Trucks:	61.5	60.8	54.4	52.9	61.4	61.6
Heavy Trucks:	61.9	61.3	52.3	53.5	61.9	62.0
Vehicle Noise:	69.6	68.7	65.6	60.9	69.4	69.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	77	165	356	766
CNEL:	82	177	382	823

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Red Hill Avenue  
 Road Segment: Skypark East to MacArthur Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,999 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,815 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 47.329				
Road Grade: 0.0%	Medium Trucks: 47.244				
Left View: -90.0 degrees	Heavy Trucks: 47.329				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.18	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.06	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.01	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.4	68.4	66.6	60.6	69.2	69.8
Medium Trucks:	63.0	62.3	56.0	54.4	62.9	63.1
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	71.1	70.2	67.2	62.4	70.9	71.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	69	149	322	693
CNEL:	74	160	345	744

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Red Hill Avenue  
 Road Segment: Main Street to Skypark East

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 18,933 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,562 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.47	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-17.71	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-21.67	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.7	66.0	59.9	68.5	69.1
Medium Trucks:	62.4	61.7	55.3	53.8	62.2	62.5
Heavy Trucks:	62.8	62.2	53.1	54.4	62.7	62.9
Vehicle Noise:	70.5	69.6	66.5	61.7	70.3	70.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	135	291	627
CNEL:	67	145	313	673



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Research Drive  
 Road Segment: Hubble to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,175 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,077 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.22	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.02	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.97	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.4	64.6	58.6	67.2	67.8
Medium Trucks:	61.2	60.5	54.2	52.6	61.1	61.3
Heavy Trucks:	62.0	61.4	52.4	53.7	62.0	62.1
Vehicle Noise:	69.3	68.4	65.2	60.5	69.1	69.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	117	252	543
CNEL:	58	125	270	582

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Research Drive  
 Road Segment: Scientific to Lake Forest Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,919 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,396 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.50	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.74	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.70	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.6	62.9	56.8	65.4	66.1
Medium Trucks:	59.5	58.8	52.4	50.9	59.4	59.6
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	67.5	66.6	63.5	58.8	67.4	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	42	90	193	416
CNEL:	45	96	207	447

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Research Drive  
 Road Segment: Bake Parkway to Muller

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,241 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,092 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.57	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.81	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.76	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.6	61.8	55.8	64.4	65.0
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5
Heavy Trucks:	59.2	58.7	49.6	50.9	59.2	59.4
Vehicle Noise:	66.5	65.6	62.4	57.7	66.3	66.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	164	354
CNEL:	38	82	176	379

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Research Drive  
 Road Segment: Irvine Center Drive to Bunsen

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,299 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 850 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.66	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.90	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.85	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.6	62.5	60.7	54.7	63.3	63.9
Medium Trucks:	57.3	56.6	50.3	48.7	57.2	57.4
Heavy Trucks:	58.2	57.6	48.5	49.8	58.1	58.3
Vehicle Noise:	65.4	64.5	61.3	56.7	65.2	65.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	64	139	299
CNEL:	32	69	149	321

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred	Project Name: Irvine GP
Road Name: Ridge Valley (O Street)	Job Number: 15937
Road Segment: Irvine Boulevard to Trabuco Road (Great Park Boulevard)	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,983 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,236 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">VehicleType</td> <td style="text-align: center;">Day</td> <td style="text-align: center;">Evening</td> <td style="text-align: center;">Night</td> <td style="text-align: center;">Daily</td> </tr> <tr> <td style="text-align: center;">Autos:</td> <td style="text-align: center;">77.5%</td> <td style="text-align: center;">12.9%</td> <td style="text-align: center;">9.6%</td> <td style="text-align: center;">97.42%</td> </tr> <tr> <td style="text-align: center;">Medium Trucks:</td> <td style="text-align: center;">84.8%</td> <td style="text-align: center;">4.9%</td> <td style="text-align: center;">10.3%</td> <td style="text-align: center;">1.84%</td> </tr> <tr> <td style="text-align: center;">Heavy Trucks:</td> <td style="text-align: center;">86.5%</td> <td style="text-align: center;">2.7%</td> <td style="text-align: center;">10.8%</td> <td style="text-align: center;">0.74%</td> </tr> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.03	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.27	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.22	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.2	64.1	62.4	56.3	64.9	65.5	
Medium Trucks:	58.9	58.3	51.9	50.4	58.8	59.1	
Heavy Trucks:	59.8	59.2	50.2	51.4	59.8	59.9	
Vehicle Noise:	67.0	66.1	63.0	58.3	66.8	67.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	83	178	384
CNEL:	41	89	191	412

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Ridge Valley (O Street)  
 Road Segment: Portola Parkway to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 12,342 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,018 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.87	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.11	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.07	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.3	63.3	61.5	55.5	64.1	64.7	
Medium Trucks:	58.1	57.4	51.1	49.5	58.0	58.2	
Heavy Trucks:	58.9	58.4	49.3	50.6	58.9	59.0	
Vehicle Noise:	66.2	65.3	62.1	57.4	66.0	66.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	73	157	337
CNEL:	36	78	168	362

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred Project Name: Irvine GP  
 Road Name: Ridge Valley (O Street) Job Number: 15937  
 Road Segment: Trabuco Road (Great Park Boulevard) to Marine Way

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,130 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 918 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 45 mph																					
Near/Far Lane Distance: 48 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 62.5 feet	Heavy Trucks: 8.006 <span style="float:right">Grade Adjustment: 0.0</span>																				
Centerline Dist. to Observer: 62.5 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet																					
Road Grade: 0.0%																					
Left View: -90.0 degrees																					
Right View: 90.0 degrees																					
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786																				
	Medium Trucks: 57.717																				
	Heavy Trucks: 57.787																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.56	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.52	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.9	62.8	61.1	55.0	63.6	64.2
Medium Trucks:	57.7	57.0	50.6	49.1	57.5	57.8
Heavy Trucks:	58.5	57.9	48.9	50.1	58.5	58.6
Vehicle Noise:	65.7	64.8	61.7	57.0	65.5	66.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	68	146	315
CNEL:	34	73	157	338

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Ridge Valley (O Street)  
 Road Segment: Ranchland to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 935 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 77 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 45 mph																					
Near/Far Lane Distance: 12 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 37.5 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 37.5 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 37.138																				
Left View: -90.0 degrees	Medium Trucks: 37.030																				
Right View: 90.0 degrees	Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-13.08	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-30.32	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-34.27	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.0	55.0	53.2	47.1	55.8	56.4
Medium Trucks:	49.8	49.1	42.7	41.2	49.7	49.9
Heavy Trucks:	50.6	50.0	41.0	42.2	50.6	50.7
Vehicle Noise:	57.9	56.9	53.8	49.1	57.7	58.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	12	26	56
CNEL:	6	13	28	60



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Ridgeline Drive  
 Road Segment: Concordia East to University Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 16,070 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,326 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 32.140 Medium Trucks: 32.016 Heavy Trucks: 32.141																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	0.37	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-16.87	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	81.57	-20.83	2.78	-1.20	-5.56	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.2	65.2	63.4	57.4	66.0	66.6	
Medium Trucks:	60.5	59.8	53.4	51.9	60.4	60.6	
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4	
Vehicle Noise:	68.5	67.6	64.2	59.8	68.3	68.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	66	143	308
CNEL:	33	71	153	329

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Ridgeline Drive  
 Road Segment: Turtle Rock Drive to San Simeon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,923 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,231 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 32.140 Medium Trucks: 32.016 Heavy Trucks: 32.141																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	0.04	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-17.19	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	81.57	-21.15	2.78	-1.20	-5.56	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.9	63.1	57.0	65.7	66.3
Medium Trucks:	60.2	59.5	53.1	51.6	60.0	60.3
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	68.1	67.3	63.8	59.4	68.0	68.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	136	293
CNEL:	31	67	145	313

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Rockfield Avenue  
 Road Segment: Whatney to McLaren

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,541 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,365 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-0.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.84	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.80	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.6	64.6	62.8	56.7	65.4	66.0
Medium Trucks:	59.4	58.7	52.3	50.8	59.3	59.5
Heavy Trucks:	60.2	59.6	50.6	51.8	60.2	60.3
Vehicle Noise:	67.4	66.5	63.4	58.7	67.3	67.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	41	88	190	410
CNEL:	44	95	204	440

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Rockfield Avenue  
 Road Segment: Bake Parkway to Whatney

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,372 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	608 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.30	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.1	61.0	59.3	53.2	61.8	62.4
Medium Trucks:	55.9	55.2	48.8	47.3	55.7	56.0
Heavy Trucks:	56.7	56.1	47.1	48.3	56.7	56.8
Vehicle Noise:	63.9	63.0	59.9	55.2	63.7	64.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	111	239
CNEL:	26	55	119	257

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Rockfield Avenue  
 Road Segment: Thomas to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	5,692 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	470 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-5.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-22.47	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-26.43	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.0	59.9	58.2	52.1	60.7	61.3
Medium Trucks:	54.7	54.1	47.7	46.2	54.6	54.9
Heavy Trucks:	55.6	55.0	46.0	47.2	55.6	55.7
Vehicle Noise:	62.8	61.9	58.8	54.1	62.6	63.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	43	93	201
CNEL:	22	47	100	216

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Roosevelt  
 Road Segment: Jeffrey Road to Vision

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 17,206 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,420 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	0.08	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.16	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.11	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.3	61.5	55.5	64.1	64.7
Medium Trucks:	58.3	57.6	51.3	49.7	58.2	58.4
Heavy Trucks:	59.6	59.0	50.0	51.3	59.6	59.7
Vehicle Noise:	66.4	65.5	62.2	57.6	66.2	66.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	75	161	347
CNEL:	37	80	173	372

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Roosevelt  
 Road Segment: Yale Avenue to Van Buren

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,058 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 747 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 29.547 Medium Trucks: 29.411 Heavy Trucks: 29.547																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.70	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	77.72	-19.94	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	82.99	-23.90	3.32	-1.20	-5.77	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.9	64.9	63.1	57.0	65.7	66.3	
Medium Trucks:	59.9	59.3	52.9	51.3	59.8	60.0	
Heavy Trucks:	61.2	60.6	51.6	52.8	61.2	61.3	
Vehicle Noise:	67.9	67.0	63.8	59.2	67.8	68.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	21	46	99	213
CNEL:	23	49	106	228

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Roosevelt  
 Road Segment: Vision to Bay Tree

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 16,387 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,352 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.13	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.37	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.32	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.1	63.1	61.3	55.3	63.9	64.5
Medium Trucks:	58.1	57.4	51.1	49.5	58.0	58.2
Heavy Trucks:	59.4	58.8	49.8	51.1	59.4	59.5
Vehicle Noise:	66.1	65.2	62.0	57.4	66.0	66.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	34	72	156	336
CNEL:	36	78	167	360



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Roosevelt  
 Road Segment: Nimitz to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,608 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,205 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.63	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-17.87	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.82	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.6	62.6	60.8	54.8	63.4	64.0
Medium Trucks:	57.6	56.9	50.6	49.0	57.5	57.7
Heavy Trucks:	58.9	58.3	49.3	50.6	58.9	59.0
Vehicle Noise:	65.6	64.7	61.5	56.9	65.5	65.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	144	311
CNEL:	33	72	155	333

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Roosevelt  
 Road Segment: Tulip (Road C) to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,053 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,159 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-0.80	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-18.04	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-21.99	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.5	62.4	60.6	54.6	63.2	63.8
Medium Trucks:	57.4	56.8	50.4	48.9	57.3	57.6
Heavy Trucks:	58.8	58.2	49.1	50.4	58.7	58.9
Vehicle Noise:	65.5	64.6	61.3	56.8	65.3	65.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	141	303
CNEL:	32	70	151	325

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Royal Oak  
 Road Segment: Alton Parkway to Eaglecreek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,830 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 398 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 30.0 feet Centerline Dist. to Observer: 30.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 29.547 Medium Trucks: 29.411 Heavy Trucks: 29.547																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-4.86	3.32	-1.20	-4.81	0.000	0.000
Medium Trucks:	75.75	-22.09	3.35	-1.20	-5.14	0.000	0.000
Heavy Trucks:	81.57	-26.05	3.32	-1.20	-5.77	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.6	60.5	58.7	52.7	61.3	61.9
Medium Trucks:	55.8	55.1	48.8	47.2	55.7	55.9
Heavy Trucks:	57.6	57.1	48.0	49.3	57.6	57.8
Vehicle Noise:	63.8	62.9	59.5	55.1	63.6	64.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	11	24	52	113
CNEL:	12	26	56	120

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Oak Canyon Drive to Burt Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 51,113 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,217 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.84	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.40	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.35	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.1	67.3	61.3	69.9	70.5
Medium Trucks:	63.7	63.0	56.7	55.1	63.6	63.8
Heavy Trucks:	64.1	63.5	54.5	55.8	64.1	64.2
Vehicle Noise:	71.8	70.9	67.9	63.1	71.6	72.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	108	233	502	1,081
CNEL:	116	250	539	1,162

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Irvine Center Drive to Oak Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 50,013 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,126 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.75	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.49	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.45	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.1	69.0	67.2	61.2	69.8	70.4
Medium Trucks:	63.6	62.9	56.6	55.0	63.5	63.7
Heavy Trucks:	64.0	63.4	54.4	55.7	64.0	64.1
Vehicle Noise:	71.7	70.8	67.8	63.0	71.6	72.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	107	230	495	1,066
CNEL:	114	247	531	1,145

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-405 NB Off-Ramp to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 45,922 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,789 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.38	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-13.86	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.82	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.6	71.6	69.8	63.8	72.4	73.0	
Medium Trucks:	66.2	65.5	59.2	57.6	66.1	66.3	
Heavy Trucks:	66.6	66.0	57.0	58.2	66.6	66.7	
Vehicle Noise:	74.3	73.4	70.4	65.6	74.1	74.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	244	525	1,131
CNEL:	122	262	564	1,216

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Burt Road to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 53,622 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,424 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 80.0 feet Centerline Dist. to Observer: 80.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 69.914 Medium Trucks: 69.857 Heavy Trucks: 69.914																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.05	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.19	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-17.14	-2.29	-1.20	-5.23	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.7	67.9	61.9	70.5	71.1
Medium Trucks:	64.3	63.7	57.3	55.8	64.2	64.4
Heavy Trucks:	64.7	64.2	55.1	56.4	64.7	64.9
Vehicle Noise:	72.5	71.5	68.5	63.7	72.3	72.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	113	244	526	1,132
CNEL:	122	262	565	1,217

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Marine to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 62,433 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 5,151 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.71	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-12.53	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-16.48	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.8	71.7	70.0	63.9	72.5	73.1	
Medium Trucks:	66.4	65.7	59.3	57.8	66.3	66.5	
Heavy Trucks:	66.8	66.2	57.2	58.4	66.8	66.9	
Vehicle Noise:	74.5	73.6	70.5	65.8	74.3	74.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	194	417	898	1,935
CNEL:	208	448	965	2,079



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Trabuco Road to Towngate

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 42,024 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,467 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.99	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.25	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.20	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.3	68.2	66.5	60.4	69.0	69.6
Medium Trucks:	62.9	62.2	55.8	54.3	62.7	63.0
Heavy Trucks:	63.3	62.7	53.7	54.9	63.3	63.4
Vehicle Noise:	71.0	70.1	67.0	62.2	70.8	71.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	95	204	440	949
CNEL:	102	220	473	1,020

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Barranca Parkway to Waterworks

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 38,582 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,183 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.62	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.62	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.57	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.9	66.1	60.0	68.7	69.3
Medium Trucks:	62.5	61.8	55.5	53.9	62.4	62.6
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0
Vehicle Noise:	70.6	69.7	66.7	61.9	70.4	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	193	416	896
CNEL:	96	207	447	963

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-5 SB Off-Ramp to Marine

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 51,961 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 4,287 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.91	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-13.33	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-17.28	-0.91	-1.20	-5.16	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	72.0	70.9	69.2	63.1	71.7	72.3	
Medium Trucks:	65.6	64.9	58.5	57.0	65.5	65.7	
Heavy Trucks:	66.0	65.4	56.4	57.6	66.0	66.1	
Vehicle Noise:	73.7	72.8	69.7	65.0	73.5	74.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	171	369	795	1,712
CNEL:	184	396	854	1,840

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Hospital to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 36,289 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,994 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.35	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.88	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.84	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.2	61.6	55.2	53.6	62.1	62.3
Heavy Trucks:	62.6	62.1	53.0	54.3	62.6	62.7
Vehicle Noise:	70.4	69.4	66.4	61.6	70.2	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	86	185	399	860
CNEL:	92	199	429	925

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Nightmist to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 46,581 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,843 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.44	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-13.80	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-17.76	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.5	70.5	68.7	62.6	71.3	71.9
Medium Trucks:	65.1	64.4	58.1	56.5	65.0	65.2
Heavy Trucks:	65.5	64.9	55.9	57.1	65.5	65.6
Vehicle Noise:	73.2	72.3	69.3	64.5	73.0	73.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	159	343	739	1,592
CNEL:	171	369	794	1,710

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-405 SB Off-Ramp to I-405 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 35,889 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,961 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.31	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.93	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.89	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.6	70.5	68.7	62.7	71.3	71.9
Medium Trucks:	65.1	64.5	58.1	56.6	65.0	65.2
Heavy Trucks:	65.5	65.0	55.9	57.2	65.5	65.7
Vehicle Noise:	73.3	72.3	69.3	64.5	73.1	73.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	96	207	446	960
CNEL:	103	222	479	1,031

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: I-5 NB Off-Ramp to Nightmist

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 49,225 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,061 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 165 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 100.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 100.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 56.593				
Road Grade: 0.0%		Medium Trucks: 56.522				
Left View: -90.0 degrees		Heavy Trucks: 56.593				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.68	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-13.56	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-17.52	-0.91	-1.20	-5.16	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.8	70.7	68.9	62.9	71.5	72.1
Medium Trucks:	65.3	64.7	58.3	56.8	65.2	65.5
Heavy Trucks:	65.8	65.2	56.1	57.4	65.7	65.9
Vehicle Noise:	73.5	72.5	69.5	64.7	73.3	73.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	165	356	767	1,652
CNEL:	177	382	824	1,775

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Towngate to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 36,746 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,032 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.41	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.83	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.79	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.7	67.7	65.9	59.8	68.5	69.1	
Medium Trucks:	62.3	61.6	55.2	53.7	62.2	62.4	
Heavy Trucks:	62.7	62.1	53.1	54.3	62.7	62.8	
Vehicle Noise:	70.4	69.5	66.4	61.7	70.2	70.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	87	187	403	868
CNEL:	93	201	433	932



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Waterworks to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,598 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,772 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.02	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.22	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.18	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.3	65.5	59.4	68.1	68.7
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0
Heavy Trucks:	62.3	61.7	52.7	53.9	62.3	62.4
Vehicle Noise:	70.0	69.1	66.1	61.3	69.8	70.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	176	379	817
CNEL:	88	189	408	878

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Irvine Boulevard to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 23,306 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,923 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.43	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.81	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.76	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	62.0	61.3	54.9	53.4	61.8	62.1
Heavy Trucks:	62.4	61.8	52.7	54.0	62.4	62.5
Vehicle Noise:	70.1	69.2	66.1	61.3	69.9	70.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	61	132	285	614
CNEL:	66	142	306	660

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Roosevelt to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 39,585 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,266 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 165 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 100.0 feet Centerline Dist. to Observer: 100.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 56.593 Medium Trucks: 56.522 Heavy Trucks: 56.593																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.73	-0.91	-1.20	-4.87	0.000	0.000
Medium Trucks:	81.00	-14.51	-0.90	-1.20	-4.97	0.000	0.000
Heavy Trucks:	85.38	-18.46	-0.91	-1.20	-5.16	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.8	69.8	68.0	61.9	70.6	71.2
Medium Trucks:	64.4	63.7	57.4	55.8	64.3	64.5
Heavy Trucks:	64.8	64.2	55.2	56.4	64.8	64.9
Vehicle Noise:	72.5	71.6	68.6	63.8	72.3	72.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	143	308	663	1,428
CNEL:	153	331	712	1,535

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon Avenue  
 Road Segment: Alton Parkway to Hospital

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 33,129 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,733 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 80.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 80.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 69.914				
Road Grade: 0.0%		Medium Trucks: 69.857				
Left View: -90.0 degrees		Heavy Trucks: 69.914				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.96	-2.29	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.28	-2.28	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.24	-2.29	-1.20	-5.23	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.2	61.6	55.2	53.7	62.1	62.4
Heavy Trucks:	62.7	62.1	53.0	54.3	62.6	62.8
Vehicle Noise:	70.4	69.5	66.4	61.6	70.2	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	177	381	821
CNEL:	88	190	410	882

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Sand Canyon/Shady Canyon  
 Road Segment: Quail Hill Parkway to I-405 SB Ramps

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,970 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,978 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	0.55	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-16.69	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-20.64	0.25	-1.20	-5.34	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	69.8	68.7	67.0	60.9	69.5	70.2	
Medium Trucks:	63.4	62.7	56.3	54.8	63.3	63.5	
Heavy Trucks:	63.8	63.2	54.2	55.4	63.8	63.9	
Vehicle Noise:	71.5	70.6	67.5	62.8	71.3	71.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	73	158	340	734
CNEL:	79	170	366	788

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Scientific Way  
 Road Segment: Irvine Center Drive to Wald

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 1,626 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 134 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-9.58	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	75.75	-26.82	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	81.57	-30.78	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.5	51.4	49.6	43.6	52.2	52.8
Medium Trucks:	46.7	46.0	39.7	38.1	46.6	46.8
Heavy Trucks:	48.5	48.0	38.9	40.2	48.5	48.7
Vehicle Noise:	54.7	53.8	50.4	46.0	54.5	54.9

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	6	13	27	58
CNEL:	6	13	29	62

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Shady Canyon Drive  
 Road Segment: Culver Drive/Bonita Canyon Drive to Cloverfield

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	9,242 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	762 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.59	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	81.00	-20.82	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	85.38	-24.78	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	66.2	64.4	58.4	67.0	67.6
Medium Trucks:	60.8	60.2	53.8	52.2	60.7	60.9
Heavy Trucks:	61.2	60.6	51.6	52.9	61.2	61.3
Vehicle Noise:	68.9	68.0	65.0	60.2	68.8	69.2

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	31	67	144	310
CNEL:	33	72	154	333

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Shady Canyon Drive  
 Road Segment: Bommer Canyon Road to Sunnyhill

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,888 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	651 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	50.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 42.814				
Road Grade:	0.0%	Medium Trucks: 42.720				
Left View:	-90.0 degrees	Heavy Trucks: 42.814				
Right View:	90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.27	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-21.51	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-25.47	0.91	-1.20	-5.43	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.6	64.6	62.8	56.8	65.4	66.0	
Medium Trucks:	59.2	58.5	52.2	50.6	59.1	59.3	
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7	
Vehicle Noise:	67.3	66.4	63.4	58.6	67.1	67.6	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	150	322
CNEL:	35	75	161	346



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Skyhawk  
 Road Segment: Great Park Boulevard to Marine Way

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,600 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 874 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 25 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	0.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-17.22	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-21.17	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.5	55.4	53.7	47.6	56.2	56.9
Medium Trucks:	51.3	50.7	44.3	42.8	51.2	51.5
Heavy Trucks:	54.6	54.0	44.9	46.2	54.5	54.7
Vehicle Noise:	59.4	58.5	54.6	50.7	59.2	59.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	12	26	56	120
CNEL:	13	27	59	127

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Southwood  
 Road Segment: Yale Avenue to Colt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,052 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 252 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-6.85	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-24.09	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-28.04	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.1	57.0	55.3	49.2	57.8	58.4
Medium Trucks:	52.3	51.6	45.3	43.7	52.2	52.4
Heavy Trucks:	54.2	53.6	44.5	45.8	54.1	54.3
Vehicle Noise:	60.3	59.4	56.0	51.6	60.1	60.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	18	38	82
CNEL:	9	19	41	88

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Southwood  
 Road Segment: Challenger to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	2,844 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	235 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	35 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-7.16	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-24.39	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-28.35	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.8	56.7	55.0	48.9	57.5	58.1
Medium Trucks:	52.0	51.3	45.0	43.4	51.9	52.1
Heavy Trucks:	53.9	53.3	44.2	45.5	53.8	54.0
Vehicle Noise:	60.0	59.1	55.7	51.3	59.8	60.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	79
CNEL:	8	18	39	84

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Spectrum Center Drive (Fortune)  
 Road Segment: Pacifica to Quassar Drive (Spectrum )

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,887 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 981 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 30 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	-0.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.51	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-21.47	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.2	58.2	56.4	50.3	59.0	59.6
Medium Trucks:	53.7	53.1	46.7	45.1	53.6	53.8
Heavy Trucks:	56.2	55.6	46.6	47.8	56.2	56.3
Vehicle Noise:	61.7	60.9	57.2	53.0	61.6	62.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	79	171
CNEL:	18	39	85	182

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Spectrum Center Drive (Fortune)  
 Road Segment: Quassar Drive (Spectrum ) to Gatewayb

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,271 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,095 vehicles Vehicle Speed: 30 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	61.75	0.20	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	73.48	-17.03	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	79.92	-20.99	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	59.7	58.6	56.9	50.8	59.4	60.1	
Medium Trucks:	54.2	53.5	47.2	45.6	54.1	54.3	
Heavy Trucks:	56.7	56.1	47.1	48.3	56.7	56.8	
Vehicle Noise:	62.2	61.4	57.7	53.5	62.0	62.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	40	86	184
CNEL:	20	42	91	196

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Sunnyhill  
 Road Segment: Shady Canyon Drive to Turtle Rock Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,698 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	553 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-1.97	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	70.80	-19.21	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	77.97	-23.17	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.5	53.5	51.7	45.6	54.3	54.9
Medium Trucks:	49.3	48.7	42.3	40.8	49.2	49.5
Heavy Trucks:	52.6	52.0	42.9	44.2	52.5	52.7
Vehicle Noise:	57.4	56.6	52.7	48.7	57.2	57.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	9	19	41	88
CNEL:	9	20	43	94

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Technology Drive  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 32,103 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,648 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.28	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.96	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.92	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.4	65.7	59.6	68.2	68.8
Medium Trucks:	62.3	61.6	55.2	53.7	62.1	62.4
Heavy Trucks:	63.1	62.5	53.5	54.7	63.1	63.2
Vehicle Noise:	70.3	69.4	66.3	61.6	70.1	70.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	137	296	638
CNEL:	68	147	318	685

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred Project Name: Irvine GP  
 Road Name: Technology Drive Job Number: 15937  
 Road Segment: Old Laguna Canyon Road to I-5/SR-133 Undercrossing

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 23,614 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,948 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">VehicleType</th> <th style="text-align: center;">Day</th> <th style="text-align: center;">Evening</th> <th style="text-align: center;">Night</th> <th style="text-align: center;">Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td style="text-align: center;">77.5%</td> <td style="text-align: center;">12.9%</td> <td style="text-align: center;">9.6%</td> <td style="text-align: center;">97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td style="text-align: center;">84.8%</td> <td style="text-align: center;">4.9%</td> <td style="text-align: center;">10.3%</td> <td style="text-align: center;">1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td style="text-align: center;">86.5%</td> <td style="text-align: center;">2.7%</td> <td style="text-align: center;">10.8%</td> <td style="text-align: center;">0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.95	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.29	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.25	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.2	66.1	64.3	58.3	66.9	67.5
Medium Trucks:	60.9	60.2	53.9	52.3	60.8	61.0
Heavy Trucks:	61.8	61.2	52.1	53.4	61.7	61.9
Vehicle Noise:	69.0	68.1	64.9	60.3	68.8	69.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	52	112	241	520
CNEL:	56	120	259	558



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Technology Drive  
 Road Segment: I-5/SR-133 to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 22,678 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,871 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.77	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.47	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.42	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	65.9	64.2	58.1	66.7	67.3
Medium Trucks:	60.7	60.1	53.7	52.2	60.6	60.9
Heavy Trucks:	61.6	61.0	52.0	53.2	61.6	61.7
Vehicle Noise:	68.8	67.9	64.8	60.1	68.6	69.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	109	235	506
CNEL:	54	117	252	543

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Technology Drive  
 Road Segment: Ada to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	5,697 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	470 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-5.23	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-22.47	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-26.42	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.0	59.9	58.2	52.1	60.7	61.3
Medium Trucks:	54.7	54.1	47.7	46.2	54.6	54.9
Heavy Trucks:	55.6	55.0	46.0	47.2	55.6	55.7
Vehicle Noise:	62.8	61.9	58.8	54.1	62.6	63.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	43	94	202
CNEL:	22	47	100	216

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Toledo Way  
 Road Segment: Bake Parkway to City Limits

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 8,035 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 663 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-4.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-21.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-25.39	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.8	62.7	60.9	54.9	63.5	64.1	
Medium Trucks:	57.3	56.7	50.3	48.8	57.2	57.4	
Heavy Trucks:	57.7	57.2	48.1	49.4	57.7	57.9	
Vehicle Noise:	65.5	64.5	61.5	56.7	65.3	65.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	140	302
CNEL:	32	70	151	324

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Toledo Way  
 Road Segment: Goodyear to Bake Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,383 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 527 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.39	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.8	61.7	59.9	53.9	62.5	63.1	
Medium Trucks:	56.3	55.7	49.3	47.8	56.2	56.4	
Heavy Trucks:	56.7	56.2	47.1	48.4	56.7	56.9	
Vehicle Noise:	64.5	63.5	60.5	55.7	64.3	64.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	56	120	259
CNEL:	28	60	129	278

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Toledo Way  
 Road Segment: Alton Parkway to Parker

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 5,879 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 485 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.55	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.79	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.75	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.4	61.3	59.6	53.5	62.1	62.8	
Medium Trucks:	56.0	55.3	48.9	47.4	55.9	56.1	
Heavy Trucks:	56.4	55.8	46.8	48.0	56.4	56.5	
Vehicle Noise:	64.1	63.2	60.1	55.4	63.9	64.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	53	114	245
CNEL:	26	57	122	263

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Trabuco Road  
 Road Segment: Keystone to Sand Canyon Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,594 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,204 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.14	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.38	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.34	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.1	64.0	62.2	56.2	64.8	65.4
Medium Trucks:	58.8	58.2	51.8	50.2	58.7	58.9
Heavy Trucks:	59.7	59.1	50.0	51.3	59.6	59.8
Vehicle Noise:	66.9	66.0	62.8	58.2	66.7	67.2

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	175	377
CNEL:	40	87	188	405

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Trabuco Road  
 Road Segment: Jeffrey Road to Keystone

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,846 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,142 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.37	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.61	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.57	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.8	63.8	62.0	56.0	64.6	65.2	
Medium Trucks:	58.6	57.9	51.6	50.0	58.5	58.7	
Heavy Trucks:	59.4	58.9	49.8	51.1	59.4	59.5	
Vehicle Noise:	66.7	65.8	62.6	57.9	66.5	66.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	169	364
CNEL:	39	84	181	391

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Trabuco Road  
 Road Segment: Culver Drive to I-5 NB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,275 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,095 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.56	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.79	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.75	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.7	63.6	61.8	55.8	64.4	65.0
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5
Heavy Trucks:	59.3	58.7	49.6	50.9	59.2	59.4
Vehicle Noise:	66.5	65.6	62.4	57.8	66.3	66.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	164	354
CNEL:	38	82	176	380



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Trabuco Road  
 Road Segment: Monroe to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,181 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,087 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.59	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.83	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.78	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.6	63.6	61.8	55.7	64.4	65.0
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5
Heavy Trucks:	59.2	58.6	49.6	50.9	59.2	59.3
Vehicle Noise:	66.5	65.6	62.4	57.7	66.3	66.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	76	164	353
CNEL:	38	81	176	378

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Trabuco Road  
 Road Segment: I-5 NB Off-Ramp to Monroe

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,860 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,061 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.69	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.93	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.89	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.5	63.5	61.7	55.6	64.3	64.9
Medium Trucks:	58.3	57.6	51.2	49.7	58.2	58.4
Heavy Trucks:	59.1	58.5	49.5	50.7	59.1	59.2
Vehicle Noise:	66.4	65.4	62.3	57.6	66.2	66.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	35	75	161	347
CNEL:	37	80	173	372

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Trabuco Road  
 Road Segment: Yale Avenue to Remington

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,949 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 986 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.01	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.25	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.21	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.2	63.1	61.4	55.3	63.9	64.5
Medium Trucks:	58.0	57.3	50.9	49.4	57.8	58.1
Heavy Trucks:	58.8	58.2	49.2	50.4	58.8	58.9
Vehicle Noise:	66.0	65.1	62.0	57.3	65.8	66.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	71	153	330
CNEL:	35	76	164	354

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Trabuco Road  
 Road Segment: Remington to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,295 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 932 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.50	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.45	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.0	62.9	61.1	55.1	63.7	64.3
Medium Trucks:	57.7	57.0	50.7	49.1	57.6	57.8
Heavy Trucks:	58.6	58.0	48.9	50.2	58.5	58.7
Vehicle Noise:	65.8	64.9	61.7	57.1	65.6	66.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	69	148	318
CNEL:	34	74	158	341

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Turtle Ridge Drive  
 Road Segment: Federation Way to Bonita Canyon

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,977 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,731 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.43	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.81	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.76	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.6	65.6	63.8	57.8	66.4	67.0	
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5	
Heavy Trucks:	61.2	60.7	51.6	52.9	61.2	61.4	
Vehicle Noise:	68.5	67.6	64.4	59.7	68.3	68.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	104	223	481
CNEL:	52	111	239	516

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Turtle Rock Drive  
 Road Segment: Ridgeline to Willowleaf

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,738 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	721 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.37	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-20.61	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-24.57	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.7	62.9	56.8	65.5	66.1
Medium Trucks:	59.5	58.8	52.5	50.9	59.4	59.6
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	67.6	66.7	63.5	58.8	67.4	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	116	250
CNEL:	27	58	125	269

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Turtle Rock Drive  
 Road Segment: Silkwood to Sunnyhill

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,638 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	713 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.42	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-20.66	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-24.62	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.7	64.6	62.8	56.8	65.4	66.0	
Medium Trucks:	59.4	58.8	52.4	50.9	59.3	59.6	
Heavy Trucks:	60.3	59.7	50.6	51.9	60.3	60.4	
Vehicle Noise:	67.5	66.6	63.5	58.8	67.3	67.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	25	54	115	248
CNEL:	27	57	124	266

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Turtle Rock Drive  
 Road Segment: Canyon Park to Ridgeline

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,159 vehicles	Autos:		15		
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles):		15		
Peak Hour Volume:	591 vehicles	Heavy Trucks (3+ Axles):		15		
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos:		2.000		
Barrier Distance to Observer:	0.0 feet	Medium Trucks:		4.000		
Observer Height (Above Pad):	5.0 feet	Heavy Trucks:		8.006		
Pad Elevation:	0.0 feet					Grade Adjustment: 0.0
Road Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Grade:	0.0%	Autos:		37.138		
Left View:	-90.0 degrees	Medium Trucks:		37.030		
Right View:	90.0 degrees	Heavy Trucks:		37.139		

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.24	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-21.48	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-25.43	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	63.8	62.0	56.0	64.6	65.2
Medium Trucks:	58.6	58.0	51.6	50.0	58.5	58.7
Heavy Trucks:	59.5	58.9	49.8	51.1	59.4	59.6
Vehicle Noise:	66.7	65.8	62.6	58.0	66.5	67.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	22	47	102	219
CNEL:	24	51	109	235



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Turtle Rock Drive  
 Road Segment: Sunnyhill to Southernwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,587 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 296 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-7.24	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-24.48	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-28.43	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	60.8	59.0	53.0	61.6	62.2
Medium Trucks:	55.6	55.0	48.6	47.0	55.5	55.7
Heavy Trucks:	56.5	55.9	46.8	48.1	56.4	56.6
Vehicle Noise:	63.7	62.8	59.6	55.0	63.5	64.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	14	30	64	138
CNEL:	15	32	69	148

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Turtle Rock Drive  
 Road Segment: Campus Drive to Hillgate

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,106 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 586 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.27	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.51	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.46	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.9	60.9	59.1	53.1	61.7	62.3
Medium Trucks:	55.7	55.0	48.7	47.1	55.6	55.8
Heavy Trucks:	56.5	56.0	46.9	48.2	56.5	56.7
Vehicle Noise:	63.8	62.9	59.7	55.0	63.6	64.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	234
CNEL:	25	54	116	251

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Turtle Rock Drive  
 Road Segment: Paseo Segovia to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 4,064 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 335 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 32.140 Medium Trucks: 32.016 Heavy Trucks: 32.141																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-6.70	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-23.94	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	84.25	-27.89	2.78	-1.20	-5.56	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.3	62.3	60.5	54.5	63.1	63.7
Medium Trucks:	57.1	56.4	50.1	48.5	57.0	57.2
Heavy Trucks:	57.9	57.4	48.3	49.6	57.9	58.0
Vehicle Noise:	65.2	64.3	61.1	56.4	65.0	65.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	40	86	185
CNEL:	20	43	92	199

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: University Drive  
 Road Segment: Golden Glow to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 42,678 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,521 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.06	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.18	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.14	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	71.0	70.0	68.2	62.1	70.8	71.4
Medium Trucks:	64.6	63.9	57.5	56.0	64.5	64.7
Heavy Trucks:	65.0	64.4	55.4	56.6	65.0	65.1
Vehicle Noise:	72.7	71.8	68.7	64.0	72.5	73.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	92	198	427	919
CNEL:	99	213	458	988

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: University Drive  
 Road Segment: Ridgeline to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 52,367 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,320 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 75.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 75.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 70.413				
Road Grade: 0.0%	Medium Trucks: 70.356				
Left View: -90.0 degrees	Heavy Trucks: 70.413				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.95	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-13.29	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	85.38	-17.25	-2.33	-1.20	-5.25	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.6	69.6	67.8	61.7	70.4	71.0
Medium Trucks:	64.2	63.5	57.1	55.6	64.1	64.3
Heavy Trucks:	64.6	64.0	55.0	56.2	64.6	64.7
Vehicle Noise:	72.3	71.4	68.4	63.6	72.1	72.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	104	224	482	1,037
CNEL:	111	240	517	1,115

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: University Drive  
 Road Segment: Culver Drive to Golden Glow

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 41,441 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,419 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.93	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.31	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.26	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.9	69.8	68.1	62.0	70.6	71.2
Medium Trucks:	64.5	63.8	57.4	55.9	64.3	64.6
Heavy Trucks:	64.9	64.3	55.2	56.5	64.9	65.0
Vehicle Noise:	72.6	71.7	68.6	63.8	72.4	72.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	90	194	418	901
CNEL:	97	209	450	968

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: University Drive  
 Road Segment: Yale Avenue to Ridgeline

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 36,983 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,051 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.44	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-18.76	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	70.4	69.3	67.6	61.5	70.1	70.7	
Medium Trucks:	64.0	63.3	56.9	55.4	63.8	64.1	
Heavy Trucks:	64.4	63.8	54.8	56.0	64.4	64.5	
Vehicle Noise:	72.1	71.2	68.1	63.3	71.9	72.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	84	180	388	836
CNEL:	90	193	417	898

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: University Drive  
 Road Segment: Michelson Drive to I-405 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 58,667 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 4,840 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	4.44	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-12.80	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-16.75	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	70.7	69.7	67.9	61.9	70.5	71.1
Medium Trucks:	64.3	63.6	57.3	55.7	64.2	64.4
Heavy Trucks:	64.7	64.1	55.1	56.4	64.7	64.8
Vehicle Noise:	72.4	71.5	68.5	63.7	72.2	72.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	119	255	550	1,185
CNEL:	127	274	591	1,273



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: University Drive  
 Road Segment: Mesa to Campus Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 45,486 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 3,753 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 74 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 60.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 60.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 47.329				
Road Grade: 0.0%		Medium Trucks: 47.244				
Left View: -90.0 degrees		Heavy Trucks: 47.329				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.33	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-13.90	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.86	0.25	-1.20	-5.34	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.6	71.5	69.8	63.7	72.3	72.9
Medium Trucks:	66.2	65.5	59.1	57.6	66.0	66.3
Heavy Trucks:	66.6	66.0	57.0	58.2	66.6	66.7
Vehicle Noise:	74.3	73.4	70.3	65.5	74.1	74.6

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	112	242	522	1,124
CNEL:	121	260	561	1,208

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred Project Name: Irvine GP  
 Road Name: University Drive Job Number: 15937  
 Road Segment: MacArthur Blvd/SR-73 NB Off-Ramp to California Avenue

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 46,290 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,819 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height:</b> 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float: right;">Grade Adjustment: 0.0</span>																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.41	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-13.83	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.78	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.7	71.6	69.8	63.8	72.4	73.0
Medium Trucks:	66.2	65.6	59.2	57.7	66.1	66.4
Heavy Trucks:	66.6	66.1	57.0	58.3	66.6	66.8
Vehicle Noise:	74.4	73.4	70.4	65.6	74.2	74.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	114	245	528	1,138
CNEL:	122	263	567	1,222

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: University Drive  
 Road Segment: California Avenue to Mesa

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 44,330 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,657 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 74 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 60.0 feet Centerline Dist. to Observer: 60.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 47.329 Medium Trucks: 47.244 Heavy Trucks: 47.329																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	3.22	0.25	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-14.02	0.27	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-17.97	0.25	-1.20	-5.34	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	72.5	71.4	69.7	63.6	72.2	72.8
Medium Trucks:	66.1	65.4	59.0	57.5	65.9	66.2
Heavy Trucks:	66.5	65.9	56.8	58.1	66.4	66.6
Vehicle Noise:	74.2	73.3	70.2	65.4	74.0	74.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	111	238	513	1,105
CNEL:	119	256	551	1,187

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: University Drive  
 Road Segment: Campus Drive to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 37,310 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,078 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 84.0 feet Centerline Dist. to Observer: 84.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.47	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-14.76	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-18.72	-2.70	-1.20	-5.21	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.8	67.7	66.0	59.9	68.5	69.1	
Medium Trucks:	62.3	61.7	55.3	53.8	62.2	62.5	
Heavy Trucks:	62.8	62.2	53.1	54.4	62.7	62.9	
Vehicle Noise:	70.5	69.6	66.5	61.7	70.3	70.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	88	189	407	877
CNEL:	94	203	437	942

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred Project Name: Irvine GP  
 Road Name: University Drive Job Number: 15937  
 Road Segment: SR-73 SB Off-Ramps to SR-73(MacArthur Blvd) SB Ramps

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,200 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,667 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006 <span style="margin-left: 20px;">Grade Adjustment: 0.0</span>				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 42.814				
Road Grade: 0.0%	Medium Trucks: 42.720				
Left View: -90.0 degrees	Heavy Trucks: 42.814				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-0.19	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-17.43	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-21.38	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.7	68.7	66.9	60.8	69.5	70.1
Medium Trucks:	63.3	62.6	56.3	54.7	63.2	63.4
Heavy Trucks:	63.7	63.1	54.1	55.3	63.7	63.8
Vehicle Noise:	71.4	70.5	67.5	62.7	71.2	71.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	280	603
CNEL:	65	140	301	648

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred	Project Name: Irvine GP
Road Name: University Drive	Job Number: 15937
Road Segment: SR-73 NB Off-Ramps (MacArthur Blvd) to SR-73 SB Ramps	

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 34,047 vehicles	Autos: 15																				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15																				
Peak Hour Volume: 2,809 vehicles	Heavy Trucks (3+ Axles): 15																				
Vehicle Speed: 50 mph																					
Near/Far Lane Distance: 78 feet																					
	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Site Data</b>	<b>Noise Source Elevations (in feet)</b>																				
<b>Barrier Height:</b> 0.0 feet	Autos: 2.000																				
Barrier Type (0-Wall, 1-Berm): 0.0	Medium Trucks: 4.000																				
Centerline Dist. to Barrier: 84.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
Centerline Dist. to Observer: 84.0 feet																					
Barrier Distance to Observer: 0.0 feet																					
Observer Height (Above Pad): 5.0 feet																					
Pad Elevation: 0.0 feet																					
Road Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>																				
Road Grade: 0.0%	Autos: 74.458																				
Left View: -90.0 degrees	Medium Trucks: 74.404																				
Right View: 90.0 degrees	Heavy Trucks: 74.458																				

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	2.08	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.16	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.12	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.4	67.3	65.6	59.5	68.1	68.7
Medium Trucks:	61.9	61.3	54.9	53.4	61.8	62.1
Heavy Trucks:	62.4	61.8	52.7	54.0	62.3	62.5
Vehicle Noise:	70.1	69.2	66.1	61.3	69.9	70.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	82	178	383	825
CNEL:	89	191	411	886

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: University Drive  
 Road Segment: San Joaquin to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 30,020 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,477 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

<b>FHWA Noise Model Calculations</b>							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.53	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.71	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.66	-2.70	-1.20	-5.21	0.000	0.000

<b>Unmitigated Noise Levels (without Topo and barrier attenuation)</b>							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.8	66.8	65.0	59.0	67.6	68.2	
Medium Trucks:	61.4	60.7	54.4	52.8	61.3	61.5	
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9	
Vehicle Noise:	69.5	68.6	65.6	60.8	69.3	69.8	

<b>Centerline Distance to Noise Contour (in feet)</b>				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	163	352	758
CNEL:	81	176	378	815

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: University Drive  
 Road Segment: Harvard Avenue to San Joaquin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 29,892 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,466 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 74.458				
Road Grade: 0.0%		Medium Trucks: 74.404				
Left View: -90.0 degrees		Heavy Trucks: 74.458				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	1.51	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	81.00	-15.73	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	85.38	-19.68	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	66.8	65.0	58.9	67.6	68.2
Medium Trucks:	61.4	60.7	54.3	52.8	61.3	61.5
Heavy Trucks:	61.8	61.2	52.2	53.4	61.8	61.9
Vehicle Noise:	69.5	68.6	65.6	60.8	69.3	69.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	76	163	351	756
CNEL:	81	175	377	812



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Valley Oak Drive  
 Road Segment: Hawkcreek to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 13,433 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,108 vehicles Vehicle Speed: 50 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-1.96	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-19.20	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-23.16	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.0	64.9	63.2	57.1	65.7	66.3	
Medium Trucks:	59.6	58.9	52.5	51.0	59.4	59.7	
Heavy Trucks:	60.0	59.4	50.4	51.6	60.0	60.1	
Vehicle Noise:	67.7	66.8	63.7	58.9	67.5	68.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	43	92	197	425
CNEL:	46	98	212	457

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Valley Oak Drive  
 Road Segment: Irvine Center Drive to Oak Canyon Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 11,018 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 909 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 50.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 42.814				
Road Grade: 0.0%	Medium Trucks: 42.720				
Left View: -90.0 degrees	Heavy Trucks: 42.814				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-2.82	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	81.00	-20.06	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	85.38	-24.02	0.91	-1.20	-5.43	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.1	66.0	64.3	58.2	66.8	67.4
Medium Trucks:	60.7	60.0	53.6	52.1	60.5	60.8
Heavy Trucks:	61.1	60.5	51.4	52.7	61.1	61.2
Vehicle Noise:	68.8	67.9	64.8	60.0	68.6	69.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	40	87	187	402
CNEL:	43	93	201	432

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Valley Oak Drive  
 Road Segment: Barranca Parkway to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,317 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 851 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-3.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-20.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-24.30	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	64.8	63.8	62.0	56.0	64.6	65.2	
Medium Trucks:	58.4	57.7	51.4	49.8	58.3	58.5	
Heavy Trucks:	58.8	58.2	49.2	50.5	58.8	58.9	
Vehicle Noise:	66.5	65.6	62.6	57.8	66.3	66.8	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	77	166	357
CNEL:	38	83	178	383

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Valley Oak Drive  
 Road Segment: Alton Parkway to Hawkcreek

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,501 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	536 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	50 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	70.20	-5.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	81.00	-22.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	85.38	-26.31	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.8	61.8	60.0	54.0	62.6	63.2
Medium Trucks:	56.4	55.7	49.4	47.8	56.3	56.5
Heavy Trucks:	56.8	56.2	47.2	48.5	56.8	56.9
Vehicle Noise:	64.5	63.6	60.6	55.8	64.3	64.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	26	56	122	262
CNEL:	28	61	131	282

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Marriott to Morse Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 34,606 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,855 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.63	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.59	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.8	67.8	66.0	59.9	68.6	69.2
Medium Trucks:	62.6	61.9	55.5	54.0	62.5	62.7
Heavy Trucks:	63.4	62.8	53.8	55.0	63.4	63.5
Vehicle Noise:	70.7	69.7	66.6	61.9	70.5	70.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	145	311	671
CNEL:	72	155	334	720

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Michelson Drive to Quartz

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 33,326 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,749 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.44	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.75	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.7	67.6	65.8	59.8	68.4	69.0
Medium Trucks:	62.4	61.7	55.4	53.8	62.3	62.5
Heavy Trucks:	63.3	62.7	53.6	54.9	63.2	63.4
Vehicle Noise:	70.5	69.6	66.4	61.8	70.3	70.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	141	304	654
CNEL:	70	151	326	702

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: McGaw Avenue to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 33,069 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,728 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.41	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.83	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.79	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.6	67.6	65.8	59.7	68.4	69.0	
Medium Trucks:	62.4	61.7	55.3	53.8	62.3	62.5	
Heavy Trucks:	63.2	62.6	53.6	54.8	63.2	63.3	
Vehicle Noise:	70.5	69.6	66.4	61.7	70.3	70.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	65	140	302	651
CNEL:	70	150	324	698

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Alton Parkway to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 41,216 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 3,400 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 52 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 75.0 feet Centerline Dist. to Observer: 75.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
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	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 70.413 Medium Trucks: 70.356 Heavy Trucks: 70.413																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	3.36	-2.33	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-13.87	-2.33	-1.20	-4.99	0.000	0.000
Heavy Trucks:	84.25	-17.83	-2.33	-1.20	-5.25	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.3	67.2	65.5	59.4	68.0	68.6
Medium Trucks:	62.0	61.4	55.0	53.5	61.9	62.2
Heavy Trucks:	62.9	62.3	53.3	54.5	62.9	63.0
Vehicle Noise:	70.1	69.2	66.1	61.4	69.9	70.4

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	74	160	345	742
CNEL:	80	172	370	796



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Main Street to Anchor

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 32,464 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,678 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.33	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.91	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.87	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.5	67.5	65.7	59.7	68.3	68.9
Medium Trucks:	62.3	61.6	55.3	53.7	62.2	62.4
Heavy Trucks:	63.1	62.6	53.5	54.8	63.1	63.2
Vehicle Noise:	70.4	69.5	66.3	61.6	70.2	70.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	64	139	298	643
CNEL:	69	149	320	690

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Anchor to McGaw Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 31,313 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,583 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.02	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.4	67.3	65.6	59.5	68.1	68.7	
Medium Trucks:	62.1	61.5	55.1	53.6	62.0	62.3	
Heavy Trucks:	63.0	62.4	53.4	54.6	63.0	63.1	
Vehicle Noise:	70.2	69.3	66.2	61.5	70.0	70.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	63	135	291	628
CNEL:	67	145	313	673

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Morse to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 29,530 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,436 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.92	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.32	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.28	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.1	67.1	65.3	59.2	67.9	68.5	
Medium Trucks:	61.9	61.2	54.9	53.3	61.8	62.0	
Heavy Trucks:	62.7	62.1	53.1	54.4	62.7	62.8	
Vehicle Noise:	70.0	69.1	65.9	61.2	69.8	70.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	60	130	280	604
CNEL:	65	140	301	648

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Martin to Dupont Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 25,404 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,096 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.26	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.98	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.93	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	67.5	66.4	64.6	58.6	67.2	67.8	
Medium Trucks:	61.2	60.6	54.2	52.7	61.1	61.3	
Heavy Trucks:	62.1	61.5	52.5	53.7	62.1	62.2	
Vehicle Noise:	69.3	68.4	65.3	60.6	69.1	69.6	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	55	118	253	546
CNEL:	59	126	272	586

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Campus Drive to Martin

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,957 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,059 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.05	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.01	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.3	64.6	58.5	67.1	67.7
Medium Trucks:	61.2	60.5	54.1	52.6	61.0	61.3
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	69.2	68.3	65.2	60.5	69.0	69.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	250	540
CNEL:	58	125	269	579

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Von Karman Avenue  
 Road Segment: Dupont Drive to Michelson Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 24,911 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,055 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.18	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.06	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.02	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	66.3	64.6	58.5	67.1	67.7
Medium Trucks:	61.2	60.5	54.1	52.6	61.0	61.3
Heavy Trucks:	62.0	61.4	52.4	53.6	62.0	62.1
Vehicle Noise:	69.2	68.3	65.2	60.5	69.0	69.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	54	116	250	539
CNEL:	58	125	268	578

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Jeffrey Road to I-5 SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 34,208 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,822 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	2.55	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-14.68	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-18.64	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	68.8	67.7	65.9	59.9	68.5	69.1	
Medium Trucks:	62.5	61.9	55.5	53.9	62.4	62.6	
Heavy Trucks:	63.4	62.8	53.7	55.0	63.3	63.5	
Vehicle Noise:	70.6	69.7	66.5	61.9	70.4	70.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	67	143	309	666
CNEL:	71	154	332	714

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Myford Road to Jamboree Road SB Off-Ramp

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 22,735 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,876 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.78	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.46	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.41	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.0	65.9	64.2	58.1	66.7	67.3
Medium Trucks:	60.8	60.1	53.7	52.2	60.6	60.9
Heavy Trucks:	61.6	61.0	52.0	53.2	61.6	61.7
Vehicle Noise:	68.8	67.9	64.8	60.1	68.6	69.1

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	51	109	235	507
CNEL:	54	117	252	544



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Walnut Avenue  
 Road Segment: The Mall Street to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 21,014 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,734 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.44	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.80	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.76	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.7	65.6	63.8	57.8	66.4	67.0
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5
Heavy Trucks:	61.3	60.7	51.6	52.9	61.2	61.4
Vehicle Noise:	68.5	67.6	64.4	59.8	68.3	68.8

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	104	223	481
CNEL:	52	111	240	516

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Harvard Avenue to The Mall Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 20,921 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,726 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.42	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-16.82	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-20.77	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.6	65.6	63.8	57.7	66.4	67.0
Medium Trucks:	60.4	59.7	53.4	51.8	60.3	60.5
Heavy Trucks:	61.2	60.6	51.6	52.9	61.2	61.3
Vehicle Noise:	68.5	67.6	64.4	59.7	68.3	68.7

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	48	103	223	480
CNEL:	51	111	239	515

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Franciscan Street to Ravenwood Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 19,748 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,629 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.03	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.4	65.3	63.6	57.5	66.1	66.7
Medium Trucks:	60.1	59.5	53.1	51.6	60.0	60.3
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1
Vehicle Noise:	68.2	67.3	64.2	59.5	68.0	68.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	99	214	462
CNEL:	50	107	230	495

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Ravenwood Street to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,073 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,574 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.02	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.22	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.18	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.2	65.2	63.4	57.3	66.0	66.6
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1
Heavy Trucks:	60.8	60.2	51.2	52.5	60.8	60.9
Vehicle Noise:	68.1	67.2	64.0	59.3	67.9	68.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	97	209	451
CNEL:	48	104	225	484

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Culver Drive to Franciscan Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,198 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,584 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.05	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.19	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.15	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.3	65.2	63.4	57.4	66.0	66.6	
Medium Trucks:	60.0	59.3	53.0	51.4	59.9	60.1	
Heavy Trucks:	60.9	60.3	51.2	52.5	60.8	61.0	
Vehicle Noise:	68.1	67.2	64.0	59.4	67.9	68.4	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	45	98	210	453
CNEL:	49	105	226	486

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Peters Canyon Road to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 25,674 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 2,118 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 78 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 84.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 84.0 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 74.458				
Road Grade: 0.0%	Medium Trucks: 74.404				
Left View: -90.0 degrees	Heavy Trucks: 74.458				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.31	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-15.93	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-19.89	-2.70	-1.20	-5.21	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.9	64.8	63.0	57.0	65.6	66.2
Medium Trucks:	59.6	59.0	52.6	51.0	59.5	59.7
Heavy Trucks:	60.5	59.9	50.8	52.1	60.5	60.6
Vehicle Noise:	67.7	66.8	63.7	59.0	67.5	68.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	57	124	266	573
CNEL:	62	133	286	615

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred Project Name: Irvine GP  
 Road Name: Walnut Avenue Job Number: 15937  
 Road Segment: Jamboree Road NB Off-Ramp to Peters Canyon Road

<b>SITE SPECIFIC INPUT DATA</b>	<b>NOISE MODEL INPUTS</b>																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 24,721 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,039 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 78 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
	VehicleType	Day	Evening	Night	Daily																
	Autos:	77.5%	12.9%	9.6%	97.42%																
	Medium Trucks:	84.8%	4.9%	10.3%	1.84%																
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
<b>Noise Source Elevations (in feet)</b>																					
Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006 <span style="float:right">Grade Adjustment: 0.0</span>																					
<b>Lane Equivalent Distance (in feet)</b>																					
Autos: 74.458 Medium Trucks: 74.404 Heavy Trucks: 74.458																					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.14	-2.70	-1.20	-4.86	0.000	0.000
Medium Trucks:	79.45	-16.09	-2.69	-1.20	-4.98	0.000	0.000
Heavy Trucks:	84.25	-20.05	-2.70	-1.20	-5.21	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	64.6	62.9	56.8	65.4	66.1
Medium Trucks:	59.5	58.8	52.4	50.9	59.3	59.6
Heavy Trucks:	60.3	59.7	50.7	51.9	60.3	60.4
Vehicle Noise:	67.5	66.6	63.5	58.8	67.3	67.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	56	120	260	559
CNEL:	60	129	278	600

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Yale Avenue to Kazan Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,757 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,217 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.10	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.33	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.29	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.1	64.1	62.3	56.2	64.9	65.5	
Medium Trucks:	58.9	58.2	51.8	50.3	58.8	59.0	
Heavy Trucks:	59.7	59.1	50.1	51.3	59.7	59.8	
Vehicle Noise:	67.0	66.0	62.9	58.2	66.8	67.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	82	176	380
CNEL:	41	88	189	408



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Walnut Avenue  
 Road Segment: Wisteria to Jeffrey Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 14,563 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,201 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.15	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.39	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.35	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.1	64.0	62.2	56.2	64.8	65.4	
Medium Trucks:	58.8	58.1	51.8	50.2	58.7	58.9	
Heavy Trucks:	59.7	59.1	50.0	51.3	59.6	59.8	
Vehicle Noise:	66.9	66.0	62.8	58.2	66.7	67.2	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	38	81	175	377
CNEL:	40	87	188	404

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred Project Name: Irvine GP  
 Road Name: Warner Avenue Job Number: 15937  
 Road Segment: Jamboree Road SB Off-ramp to Construction North

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 28,741 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 2,371 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	1.80	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-15.44	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-19.40	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.0	66.9	65.2	59.1	67.8	68.4
Medium Trucks:	61.8	61.1	54.7	53.2	61.7	61.9
Heavy Trucks:	62.6	62.0	53.0	54.2	62.6	62.7
Vehicle Noise:	69.8	68.9	65.8	61.1	69.7	70.1

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	59	128	275	593
CNEL:	64	137	295	636

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Warner Avenue  
 Road Segment: Construction North to Harvard Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 19,878 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,640 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	0.20	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-17.04	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-21.00	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	66.4	65.3	63.6	57.5	66.1	66.8	
Medium Trucks:	60.2	59.5	53.1	51.6	60.1	60.3	
Heavy Trucks:	61.0	60.4	51.4	52.6	61.0	61.1	
Vehicle Noise:	68.2	67.3	64.2	59.5	68.1	68.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	46	100	215	464
CNEL:	50	107	231	497

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Warner Avenue  
 Road Segment: Harvard Avenue to Paseo Westpark

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,949 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,151 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.34	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.58	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.54	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.9	63.8	62.0	56.0	64.6	65.2
Medium Trucks:	58.6	58.0	51.6	50.1	58.5	58.7
Heavy Trucks:	59.5	58.9	49.8	51.1	59.5	59.6
Vehicle Noise:	66.7	65.8	62.7	58.0	66.5	67.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	79	170	366
CNEL:	39	85	182	393

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Warner Avenue  
 Road Segment: Santa Ynez to Culver Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 11,142 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 919 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.32	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.55	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.51	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.9	62.8	61.1	55.0	63.6	64.2
Medium Trucks:	57.7	57.0	50.6	49.1	57.5	57.8
Heavy Trucks:	58.5	57.9	48.9	50.1	58.5	58.6
Vehicle Noise:	65.7	64.8	61.7	57.0	65.5	66.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	32	68	146	315
CNEL:	34	73	157	338

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Warner Avenue  
 Road Segment: Culver Drive to West Yale Loop

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,428 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 860 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
<b>Barrier Height: 0.0 feet</b> Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.84	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.80	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.6	62.5	60.8	54.7	63.3	64.0	
Medium Trucks:	57.4	56.7	50.3	48.8	57.3	57.5	
Heavy Trucks:	58.2	57.6	48.6	49.8	58.2	58.3	
Vehicle Noise:	65.4	64.5	61.4	56.7	65.3	65.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	140	302
CNEL:	32	70	150	324

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: West Yale Loop  
 Road Segment: Alton Parkway to Blue Lake North

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,462 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 781 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.52	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.75	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.71	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.8	60.7	58.9	52.9	61.5	62.1
Medium Trucks:	55.7	55.1	48.7	47.1	55.6	55.8
Heavy Trucks:	57.0	56.5	47.4	48.7	57.0	57.1
Vehicle Noise:	63.8	62.9	59.6	55.0	63.6	64.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	233
CNEL:	25	54	116	249

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: West Yale Loop  
 Road Segment: Eagle Run to Main Street

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,126 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 753 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.67	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.91	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.87	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.6	60.5	58.8	52.7	61.3	61.9	
Medium Trucks:	55.6	54.9	48.5	47.0	55.4	55.7	
Heavy Trucks:	56.9	56.3	47.3	48.5	56.9	57.0	
Vehicle Noise:	63.6	62.7	59.4	54.9	63.4	63.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	49	106	227
CNEL:	24	52	113	244



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: West Yale Loop  
 Road Segment: Thunder Run to Yale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,279 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 766 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-2.60	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-19.84	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-23.79	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.7	60.6	58.8	52.8	61.4	62.0	
Medium Trucks:	55.6	55.0	48.6	47.1	55.5	55.8	
Heavy Trucks:	57.0	56.4	47.3	48.6	56.9	57.1	
Vehicle Noise:	63.7	62.8	59.5	55.0	63.5	63.9	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	107	230
CNEL:	25	53	114	246

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: West Yale Loop  
 Road Segment: Main Street to Timber Run

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,177 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	592 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.72	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.95	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.91	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.6	59.5	57.7	51.7	60.3	60.9
Medium Trucks:	54.5	53.9	47.5	45.9	54.4	54.6
Heavy Trucks:	55.8	55.3	46.2	47.5	55.8	55.9
Vehicle Noise:	62.6	61.7	58.4	53.8	62.4	62.8

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	42	90	194
CNEL:	21	45	96	207

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: West Yale Loop  
 Road Segment: Yale Avenue to Shorebird

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,554 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 623 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.49	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-20.73	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-24.69	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.8	59.7	57.9	51.9	60.5	61.1	
Medium Trucks:	54.7	54.1	47.7	46.2	54.6	54.9	
Heavy Trucks:	56.1	55.5	46.4	47.7	56.0	56.2	
Vehicle Noise:	62.8	61.9	58.6	54.1	62.6	63.0	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	20	43	93	201
CNEL:	21	46	100	215

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: West Yale Loop  
 Road Segment: Warner Avenue to Stonecreek South

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,766 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 558 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-3.97	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.21	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.17	-1.05	-1.20	-5.32	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.3	59.2	57.5	51.4	60.0	60.6
Medium Trucks:	54.3	53.6	47.2	45.7	54.1	54.4
Heavy Trucks:	55.6	55.0	46.0	47.2	55.6	55.7
Vehicle Noise:	62.3	61.4	58.1	53.6	62.1	62.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	19	40	86	186
CNEL:	20	43	93	199

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: West Yale Loop  
 Road Segment: Barranca Parkway to Alton Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	6,550 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	540 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	40 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.11	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.35	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.31	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.2	59.1	57.3	51.3	59.9	60.5
Medium Trucks:	54.1	53.5	47.1	45.5	54.0	54.2
Heavy Trucks:	55.4	54.9	45.8	47.1	55.4	55.6
Vehicle Noise:	62.2	61.3	58.0	53.4	62.0	62.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	85	182
CNEL:	20	42	91	195

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: West Yale Loop  
 Road Segment: Stonecreek North to Warner Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,628 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 547 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.06	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.30	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.26	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.2	59.1	57.4	51.3	59.9	60.5	
Medium Trucks:	54.2	53.5	47.1	45.6	54.1	54.3	
Heavy Trucks:	55.5	54.9	45.9	47.1	55.5	55.6	
Vehicle Noise:	62.2	61.3	58.0	53.5	62.0	62.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	40	85	184
CNEL:	20	42	91	197

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: West Yale Loop  
 Road Segment: Birdsong to Barranca Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,435 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 531 vehicles Vehicle Speed: 40 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	66.51	-4.19	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	77.72	-21.43	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	82.99	-25.38	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	60.1	59.0	57.2	51.2	59.8	60.4	
Medium Trucks:	54.0	53.4	47.0	45.5	53.9	54.2	
Heavy Trucks:	55.4	54.8	45.7	47.0	55.3	55.5	
Vehicle Noise:	62.1	61.2	57.9	53.4	61.9	62.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	18	39	84	180
CNEL:	19	42	90	193

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Westwood  
 Road Segment: Yorktown to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 6,049 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 499 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-3.88	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-21.12	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-25.07	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	61.1	60.0	58.2	52.2	60.8	61.4	
Medium Trucks:	55.3	54.6	48.3	46.7	55.2	55.4	
Heavy Trucks:	57.1	56.5	47.5	48.8	57.1	57.2	
Vehicle Noise:	63.3	62.4	59.0	54.6	63.1	63.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	13	28	60	130
CNEL:	14	30	65	139



## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Westwood  
 Road Segment: Bryan Avenue to Leaf

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 3,817 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 315 vehicles Vehicle Speed: 35 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	64.30	-5.88	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	75.75	-23.12	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	81.57	-27.07	1.83	-1.20	-5.60	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	59.1	58.0	56.2	50.2	58.8	59.4	
Medium Trucks:	53.3	52.6	46.3	44.7	53.2	53.4	
Heavy Trucks:	55.1	54.5	45.5	46.8	55.1	55.2	
Vehicle Noise:	61.3	60.4	57.0	52.6	61.1	61.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	10	21	44	96
CNEL:	10	22	47	102

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Yale Avenue  
 Road Segment: Deerfield Avenue to Winvale Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,532 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 869 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 12 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 37.5 feet Centerline Dist. to Observer: 37.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 37.138 Medium Trucks: 37.030 Heavy Trucks: 37.139																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.56	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-19.80	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-23.76	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.5	65.5	63.7	57.6	66.3	66.9
Medium Trucks:	60.3	59.6	53.3	51.7	60.2	60.4
Heavy Trucks:	61.1	60.5	51.5	52.8	61.1	61.2
Vehicle Noise:	68.4	67.5	64.3	59.6	68.2	68.6

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	61	132	283
CNEL:	30	66	141	304

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Yale Avenue  
 Road Segment: Hicks Canyon Drive to Meadowood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	7,828 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	646 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	37.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006      Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 37.138				
Road Grade:	0.0%	Medium Trucks: 37.030				
Left View:	-90.0 degrees	Heavy Trucks: 37.139				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.85	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-21.09	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	84.25	-25.04	1.83	-1.20	-5.60	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.2	64.2	62.4	56.4	65.0	65.6
Medium Trucks:	59.0	58.3	52.0	50.4	58.9	59.1
Heavy Trucks:	59.8	59.3	50.2	51.5	59.8	60.0
Vehicle Noise:	67.1	66.2	63.0	58.3	66.9	67.3

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	23	50	108	233
CNEL:	25	54	116	250

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Yale Avenue  
 Road Segment: Walnut Avenue to Roosevelt

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,775 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,219 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 40.0 feet Centerline Dist. to Observer: 40.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 32.140 Medium Trucks: 32.016 Heavy Trucks: 32.141																				

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.09	2.78	-1.20	-4.83	0.000	0.000
Medium Trucks:	79.45	-18.33	2.80	-1.20	-5.08	0.000	0.000
Heavy Trucks:	84.25	-22.29	2.78	-1.20	-5.56	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	68.9	67.9	66.1	60.1	68.7	69.3
Medium Trucks:	62.7	62.0	55.7	54.1	62.6	62.8
Heavy Trucks:	63.5	63.0	53.9	55.2	63.5	63.7
Vehicle Noise:	70.8	69.9	66.7	62.0	70.6	71.0

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	44	94	203	438
CNEL:	47	101	218	470

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Yale Avenue  
 Road Segment: Roosevelt to Trabuco Road

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 14,287 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 1,179 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.24	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.48	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.43	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	65.0	63.9	62.1	56.1	64.7	65.3	
Medium Trucks:	58.7	58.1	51.7	50.2	58.6	58.9	
Heavy Trucks:	59.6	59.0	50.0	51.2	59.6	59.7	
Vehicle Noise:	66.8	65.9	62.8	58.1	66.6	67.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	37	80	173	372
CNEL:	40	86	185	399

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Yale Avenue  
 Road Segment: Irvine Center Drive to Deerfield Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 13,713 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,131 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.42	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-18.65	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-22.61	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.8	63.7	62.0	55.9	64.5	65.1
Medium Trucks:	58.6	57.9	51.5	50.0	58.4	58.7
Heavy Trucks:	59.4	58.8	49.8	51.0	59.4	59.5
Vehicle Noise:	66.6	65.7	62.6	57.9	66.4	66.9

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	36	78	168	362
CNEL:	39	84	180	388

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Yale Avenue  
 Road Segment: West Yale Loop to Irvine Center Drive

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 12,162 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 1,003 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-1.94	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.17	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.13	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	64.3	63.2	61.4	55.4	64.0	64.6
Medium Trucks:	58.0	57.4	51.0	49.5	57.9	58.2
Heavy Trucks:	58.9	58.3	49.3	50.5	58.9	59.0
Vehicle Noise:	66.1	65.2	62.1	57.4	65.9	66.4

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	33	72	155	334
CNEL:	36	77	166	358

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Yale Avenue  
 Road Segment: Winvale Avenue to Karen Ann Lane

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,472 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 864 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 57.786				
Road Grade: 0.0%	Medium Trucks: 57.717				
Left View: -90.0 degrees	Heavy Trucks: 57.787				
Right View: 90.0 degrees					

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.59	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.82	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.78	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.6	62.6	60.8	54.7	63.4	64.0	
Medium Trucks:	57.4	56.7	50.4	48.8	57.3	57.5	
Heavy Trucks:	58.2	57.6	48.6	49.9	58.2	58.3	
Vehicle Noise:	65.5	64.6	61.4	56.7	65.3	65.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	140	302
CNEL:	32	70	151	324



**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Yale Avenue  
 Road Segment: Karen Ann Lane to Walnut Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 10,472 vehicles		Autos: 15				
Peak Hour Percentage: 8.25%		Medium Trucks (2 Axles): 15				
Peak Hour Volume: 864 vehicles		Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 45 mph		<b>Vehicle Mix</b>				
Near/Far Lane Distance: 48 feet		VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
Barrier Height: 0.0 feet		Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0		Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 62.5 feet		<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 62.5 feet		Autos: 2.000				
Barrier Distance to Observer: 0.0 feet		Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet		Heavy Trucks: 8.006 Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet		<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet		Autos: 57.786				
Road Grade: 0.0%		Medium Trucks: 57.717				
Left View: -90.0 degrees		Heavy Trucks: 57.787				
Right View: 90.0 degrees						

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.59	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.82	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.78	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	63.6	62.6	60.8	54.7	63.4	64.0
Medium Trucks:	57.4	56.7	50.4	48.8	57.3	57.5
Heavy Trucks:	58.2	57.6	48.6	49.9	58.2	58.3
Vehicle Noise:	65.5	64.6	61.4	56.7	65.3	65.7

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	140	302
CNEL:	32	70	151	324

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Yale Avenue  
 Road Segment: Trabuco Road to Southwood

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 10,318 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 851 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.65	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-19.89	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-23.84	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.6	62.5	60.7	54.7	63.3	63.9	
Medium Trucks:	57.3	56.6	50.3	48.7	57.2	57.4	
Heavy Trucks:	58.2	57.6	48.5	49.8	58.1	58.3	
Vehicle Noise:	65.4	64.5	61.3	56.7	65.2	65.7	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	30	65	139	299
CNEL:	32	69	149	321

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Yale Avenue  
 Road Segment: Southwood to Bryan Avenue

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,907 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 817 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-2.83	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.07	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.02	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.4	62.3	60.6	54.5	63.1	63.7	
Medium Trucks:	57.1	56.5	50.1	48.6	57.0	57.3	
Heavy Trucks:	58.0	57.4	48.4	49.6	58.0	58.1	
Vehicle Noise:	65.2	64.3	61.2	56.5	65.0	65.5	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	29	63	135	291
CNEL:	31	67	145	313

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Yale Avenue  
 Road Segment: Northwood to Irvine Boulevard

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 9,164 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 756 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.17	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.40	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.36	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	63.0	62.0	60.2	54.2	62.8	63.4	
Medium Trucks:	56.8	56.1	49.8	48.2	56.7	56.9	
Heavy Trucks:	57.6	57.1	48.0	49.3	57.6	57.8	
Vehicle Noise:	64.9	64.0	60.8	56.1	64.7	65.1	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	28	60	128	277
CNEL:	30	64	138	297

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Yale Avenue  
 Road Segment: Bryan Avenue to Monticello

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	8,902 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	734 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	48 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	62.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	62.5 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 57.786				
Road Grade:	0.0%	Medium Trucks: 57.717				
Left View:	-90.0 degrees	Heavy Trucks: 57.787				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-3.29	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-20.53	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-24.49	-1.05	-1.20	-5.32	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.9	61.9	60.1	54.0	62.7	63.3
Medium Trucks:	56.7	56.0	49.6	48.1	56.6	56.8
Heavy Trucks:	57.5	56.9	47.9	49.1	57.5	57.6
Vehicle Noise:	64.8	63.9	60.7	56.0	64.6	65.0

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	27	58	126	271
CNEL:	29	63	135	291

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Yale Avenue  
 Road Segment: Irvine Boulevard to Park Place

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS																				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>																				
Average Daily Traffic (Adt): 7,457 vehicles Peak Hour Percentage: 8.25% Peak Hour Volume: 615 vehicles Vehicle Speed: 45 mph Near/Far Lane Distance: 48 feet	Autos: 15 Medium Trucks (2 Axles): 15 Heavy Trucks (3+ Axles): 15																				
<b>Site Data</b>	<b>Vehicle Mix</b>																				
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0 Centerline Dist. to Barrier: 62.5 feet Centerline Dist. to Observer: 62.5 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet Road Grade: 0.0% Left View: -90.0 degrees Right View: 90.0 degrees	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>VehicleType</th> <th>Day</th> <th>Evening</th> <th>Night</th> <th>Daily</th> </tr> </thead> <tbody> <tr> <td>Autos:</td> <td>77.5%</td> <td>12.9%</td> <td>9.6%</td> <td>97.42%</td> </tr> <tr> <td>Medium Trucks:</td> <td>84.8%</td> <td>4.9%</td> <td>10.3%</td> <td>1.84%</td> </tr> <tr> <td>Heavy Trucks:</td> <td>86.5%</td> <td>2.7%</td> <td>10.8%</td> <td>0.74%</td> </tr> </tbody> </table>	VehicleType	Day	Evening	Night	Daily	Autos:	77.5%	12.9%	9.6%	97.42%	Medium Trucks:	84.8%	4.9%	10.3%	1.84%	Heavy Trucks:	86.5%	2.7%	10.8%	0.74%
VehicleType	Day	Evening	Night	Daily																	
Autos:	77.5%	12.9%	9.6%	97.42%																	
Medium Trucks:	84.8%	4.9%	10.3%	1.84%																	
Heavy Trucks:	86.5%	2.7%	10.8%	0.74%																	
	<b>Noise Source Elevations (in feet)</b>																				
	Autos: 2.000 Medium Trucks: 4.000 Heavy Trucks: 8.006      Grade Adjustment: 0.0																				
	<b>Lane Equivalent Distance (in feet)</b>																				
	Autos: 57.786 Medium Trucks: 57.717 Heavy Trucks: 57.787																				

FHWA Noise Model Calculations							
VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-4.06	-1.05	-1.20	-4.85	0.000	0.000
Medium Trucks:	79.45	-21.30	-1.04	-1.20	-5.01	0.000	0.000
Heavy Trucks:	84.25	-25.26	-1.05	-1.20	-5.32	0.000	0.000

Unmitigated Noise Levels (without Topo and barrier attenuation)							
VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL	
Autos:	62.2	61.1	59.3	53.3	61.9	62.5	
Medium Trucks:	55.9	55.2	48.9	47.3	55.8	56.0	
Heavy Trucks:	56.8	56.2	47.1	48.4	56.7	56.9	
Vehicle Noise:	64.0	63.1	59.9	55.3	63.8	64.3	

Centerline Distance to Noise Contour (in feet)				
	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	24	52	112	241
CNEL:	26	56	120	259

**FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL**

Scenario: Cumulative Preferred  
 Road Name: Yale Avenue  
 Road Segment: University Drive to Royce

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA		NOISE MODEL INPUTS				
<b>Highway Data</b>		<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt):	3,979 vehicles	Autos: 15				
Peak Hour Percentage:	8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume:	328 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed:	45 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance:	52 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>		Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b>	<b>0.0 feet</b>	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm):	0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier:	50.0 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer:	50.0 feet	Autos: 2.000				
Barrier Distance to Observer:	0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad):	5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation:	0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation:	0.0 feet	Autos: 42.814				
Road Grade:	0.0%	Medium Trucks: 42.720				
Left View:	-90.0 degrees	Heavy Trucks: 42.814				
Right View:	90.0 degrees					

**FHWA Noise Model Calculations**

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	68.46	-6.79	0.91	-1.20	-4.84	0.000	0.000
Medium Trucks:	79.45	-24.03	0.92	-1.20	-5.04	0.000	0.000
Heavy Trucks:	84.25	-27.98	0.91	-1.20	-5.43	0.000	0.000

**Unmitigated Noise Levels (without Topo and barrier attenuation)**

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.4	60.3	58.5	52.5	61.1	61.7
Medium Trucks:	55.1	54.5	48.1	46.6	55.0	55.3
Heavy Trucks:	56.0	55.4	46.4	47.6	56.0	56.1
Vehicle Noise:	63.2	62.3	59.2	54.5	63.0	63.5

**Centerline Distance to Noise Contour (in feet)**

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	17	37	80	171
CNEL:	18	40	85	184

## FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

Scenario: Cumulative Preferred  
 Road Name: Yale Court  
 Road Segment: Arborwood to Portola Parkway

Project Name: Irvine GP  
 Job Number: 15937

SITE SPECIFIC INPUT DATA	NOISE MODEL INPUTS				
<b>Highway Data</b>	<b>Site Conditions (Hard = 10, Soft = 15)</b>				
Average Daily Traffic (Adt): 6,441 vehicles	Autos: 15				
Peak Hour Percentage: 8.25%	Medium Trucks (2 Axles): 15				
Peak Hour Volume: 531 vehicles	Heavy Trucks (3+ Axles): 15				
Vehicle Speed: 25 mph	<b>Vehicle Mix</b>				
Near/Far Lane Distance: 12 feet	VehicleType	Day	Evening	Night	Daily
<b>Site Data</b>	Autos: 77.5% 12.9% 9.6% 97.42%				
<b>Barrier Height:</b> 0.0 feet	Medium Trucks: 84.8% 4.9% 10.3% 1.84%				
Barrier Type (0-Wall, 1-Berm): 0.0	Heavy Trucks: 86.5% 2.7% 10.8% 0.74%				
Centerline Dist. to Barrier: 37.5 feet	<b>Noise Source Elevations (in feet)</b>				
Centerline Dist. to Observer: 37.5 feet	Autos: 2.000				
Barrier Distance to Observer: 0.0 feet	Medium Trucks: 4.000				
Observer Height (Above Pad): 5.0 feet	Heavy Trucks: 8.006    Grade Adjustment: 0.0				
Pad Elevation: 0.0 feet	<b>Lane Equivalent Distance (in feet)</b>				
Road Elevation: 0.0 feet	Autos: 37.138				
Road Grade: 0.0%	Medium Trucks: 37.030				
Left View: -90.0 degrees	Heavy Trucks: 37.139				
Right View: 90.0 degrees					

### FHWA Noise Model Calculations

VehicleType	REMEL	Traffic Flow	Distance	Finite Road	Fresnel	Barrier Atten	Berm Atten
Autos:	58.73	-2.14	1.83	-1.20	-4.83	0.000	0.000
Medium Trucks:	70.80	-19.38	1.85	-1.20	-5.09	0.000	0.000
Heavy Trucks:	77.97	-23.34	1.83	-1.20	-5.60	0.000	0.000

### Unmitigated Noise Levels (without Topo and barrier attenuation)

VehicleType	Leq Peak Hour	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.2	56.2	54.4	48.3	57.0	57.6
Medium Trucks:	52.1	51.4	45.0	43.5	51.9	52.2
Heavy Trucks:	55.3	54.7	45.6	46.9	55.3	55.4
Vehicle Noise:	60.1	59.3	55.4	51.4	59.9	60.3

### Centerline Distance to Noise Contour (in feet)

	70 dBA	65 dBA	60 dBA	55 dBA
Ldn:	8	17	37	80
CNEL:	9	18	40	85



## APPENDIX H

### Vehicle Miles Traveled Study



# Irvine General Plan Update

## Vehicle Miles Traveled (VMT) Traffic Study

DRAFT Version 1.0



11670 | Prepared by Iteris, Inc.



# DOCUMENT VERSION CONTROL

DOCUMENT NAME	SUBMITTAL DATE	VERSION NO.
Draft Irvine General Plan Update VMT Study	02/09/2024	1.0
Draft Irvine General Plan Update VMT Study	03/01/2024	1.1
Draft Irvine General Plan Update VMT Study	03/07/2024	1.2

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# TABLE OF CONTENTS

1	Executive Summary .....	4
1.1	Introduction .....	4
1.2	Project Description.....	4
1.3	Methodology.....	5
1.4	Results .....	6
2	Introduction .....	9
2.1	Project Description.....	9
2.2	Study Alternatives .....	12
2.3	VMT Study Area .....	21
3	Existing Conditions .....	22
3.1	Existing Land Use.....	22
3.2	Existing Roadway Network Statistics .....	23
4	VMT Analysis Methodology.....	25
5	VMT Results.....	27
5.1	Project Alternatives VMT .....	27
5.2	Discussion of Results .....	28
5.3	Transportation Alternative VMT .....	33
6	Mitigation Measures .....	36
6.1	Available Mitigation Measures .....	36
6.2	Potential Mitigation Measures.....	38
7	Conclusions .....	40

## TABLES

Table 1-1 – VMT Analysis Results Summary .....	6
Table 2-1 – Residential Units by TAZ for the Proposed and Reduced Project Alternatives .....	13
Table 2-2 – Comparison of Residential Units by Planning Area .....	15
Table 2-3 – Non-residential Project Description for Proposed Project (Conservative Alternative) and Reduced Project Alternative .....	19
Table 2-4 – Assumed Cumulative Projects .....	19
Table 3-1 – Existing Land Use .....	22
Table 3-2 – Current General Plan vs. Existing Land Use .....	23
Table 3-3 – City of Irvine Lane Miles .....	24
Table 4-1 – VMT Rate Threshold Goals for Projects within the City of Irvine .....	26
Table 5-1 – VMT Analysis Results Summary .....	27
Table 5-2 – Orange County Jobs to Total Population Existing and Year 2045 (Source: OCTAM) .....	29
Table 5-3 – Reduced Project VMT per Service Population vs Conservative .....	33
Table 5-4 – Change in VMT With and Without Ada .....	34
Table 6-1 – Potential Off site VMT mitigation measures (CAPCOA) .....	38

## FIGURES

Figure 1-1 – VMT Analysis Results Summary .....	7
Figure 2-1: Focus Areas for General Plan Update – New Residential Development .....	11
Figure 2-2: Proposed Project (Conservative Alternative) vs. Preferred Alternative Residential Units .....	16
Figure 2-3: Number of new Residential Units – Conservative Alternative .....	17
Figure 2-4: Number of new Residential Units – Preferred Alternative .....	18
Figure 5-1: Comparison of VMT per service population .....	27
Figure 5-2: Existing Jobs /Housing Ratio and Total Employment (Source: OCTAM) .....	31
Figure 5-3 – Year 2045 Jobs/Population Ratio and Total Employment (Source: OCTAM) .....	32
Figure 5-4 – Change in VMT With and Without Ada – Preferred Alternative .....	34

## APPENDICES

Appendix A - Ventura County VMT Reduction Strategies

# 1 EXECUTIVE SUMMARY

## 1.1 INTRODUCTION

The City of Irvine (City) is preparing the 2045 Focused General Plan Update (GPU) that will serve as the long-range vision of the City for the next 20 to 25 years. The City as the lead agency has determined that the project will require the preparation of a Program Environmental Impact Report (Program EIR) in compliance with the California Environmental Quality Act (CEQA; California Public Resources Code, Section 21000 et seq.), and Title 14 of the California Code of Regulations (CCR).

In compliance with CEQA, a Vehicle Miles Traveled (VMT) analysis has been completed for this project. This VMT report assesses the impact of the proposed additional residential and non-residential land uses along with a proposed new transportation improvement in the GPU on the transportation system, in accordance with the City's Traffic Study Guidelines. The report provides information concerning the methodology, analysis, findings, and recommendation resulting from the VMT analysis. The VMT analysis evaluates five land use alternatives and one transportation alternative:

1. Existing General Plan
2. Proposed Project (Conservative Alternative)
3. Reduced Project Alternative
4. Cumulative Plus Proposed Project (Conservative Alternative)
5. Cumulative Plus Reduced Project Alternative
6. Proposed Project (Conservative Alternative) Without Ada extension (Transportation Alternative)
7. Reduced Project Alternative Without Ada extension (Transportation Alternative)

## 1.2 PROJECT DESCRIPTION

**Residential Land Uses:** Consistent with the 2021-2029 Housing Element, the project would update the General Plan land use element to support the City's Regional Housing Needs Assessment (RHNA) of 23,610 units. To ensure consistency with State housing statutes, including no-net loss and affirmatively furthering fair housing requirements, the 2021-2029 Housing Element identified adequate sites to accommodate 55,395 new residential units in addition to the 2,261 unbuilt units already in the General Plan. The Proposed Project (Conservative Alternative) simply adds these 55,395 new units to the Existing General Plan and assumes all other future development in the Existing General Plan would also take place.

However, the City's Existing General Plan has a significant amount of unbuilt non-residential square footage available throughout the planning areas (PAs) identified in the 2021-2029 Housing Element site inventory that would be available for the potential conversion to residential uses. Given the recent history in the City of converting future approved office and warehouse approvals to residential development, the Proposed Project (Conservative Alternative) represents a maximum development scenario which may not be achievable in practice. A Reduced Project Alternative was therefore developed with the assumption that a portion of future unbuilt non-residential square footage is converted to housing, thereby reducing the total number of dwelling units. Therefore, because of the conversion of non-residential uses to residential uses, the City would add 40,378 new units in addition to the 2,261 unbuilt units in the Existing General Plan for a total of 42,639 units.

**Non-residential land uses:** In addition to the RHNA residential development, the project includes additional non-residential park uses in the Irvine Great Park (Great Park). Buildout of the Great Park Framework Plan non-residential park uses is included in all project alternatives. Only Phase 1 of the Great Park Framework Plan is included in the Existing General Plan. The Existing General Plan represents the No Project Alternative pursuant to CEQA Guidelines Section 15126.6.

**Transportation Improvements:** A transportation improvement is part of the project and included in all project alternatives except the Existing General Plan. The extension of the street named Ada (Ada Extension) from its current

terminus in the parking lot of the Irvine Station south of the Southern California Railroad Authority (SCRRA) railroad tracks is proposed to extend north under the railroad tracks to meet the future Marine Way extension north of the railroad tracks. The Ada roadway extension between the Irvine Station and Marine Way provides multi-modal connectivity to support the residential uses.

**Cumulative Projects:** For the Cumulative Plus Proposed Project (Conservative Alternative) and Cumulative Plus Reduced Project Alternative, a portion of each neighboring city's RHNA housing inventory was added to the Irvine Transportation Analysis Model (ITAM) based on the known geographic location of future development. These units have been included because they are located within ITAM Traffic Analysis Zones (TAZs) physically near Irvine city limits in which land use input data could be added. In addition to the RHNA housing inventory from neighboring cities, some additional projects within the City of Irvine have been added to the Cumulative Plus Proposed Project Alternative and Cumulative Plus Reduced Project Alternative because these pending projects are currently in various stages of approval.

### 1.3 METHODOLOGY

The City's approach to calculating VMT "attributable to the project" is consistent with Section 15064.3 of the CEQA Guidelines. In this approach, ITAM is run with the project land uses, and VMT statistics are calculated using trip tables and travel distance "skims" for a project TAZ to calculate the project VMT rate. The project VMT rate is then compared to the VMT threshold rate based on existing conditions at the time when the updated traffic study guidelines were approved. ITAM also calculates the associated population and employment of a project through its land use to socioeconomic data conversion module. VMT, population and employment for any given project can be calculated. To determine whether a project has a significant VMT impact, the project VMT metric is compared with the adopted threshold for that metric as shown below.

There is no guidance in the City's Traffic Study Guidelines for the treatment of area-wide or Citywide buildout plans. Therefore, metrics and thresholds of significance for citywide land-use plans were developed for the General Plan Update effort based on the VMT per service population. The adopted methodology in the Traffic Study Guidelines identifies thresholds of significance for residential and non-residential projects based on a 15% reduction of existing countywide average VMT per population or employment. Similarly, the threshold of significance applied for the Citywide plan is based on a 15% reduction of existing countywide average VMT per service population of which service population is the sum of the countywide population and employment. This methodology is consistent with methodologies used in other jurisdictions.

## 1.4 RESULTS

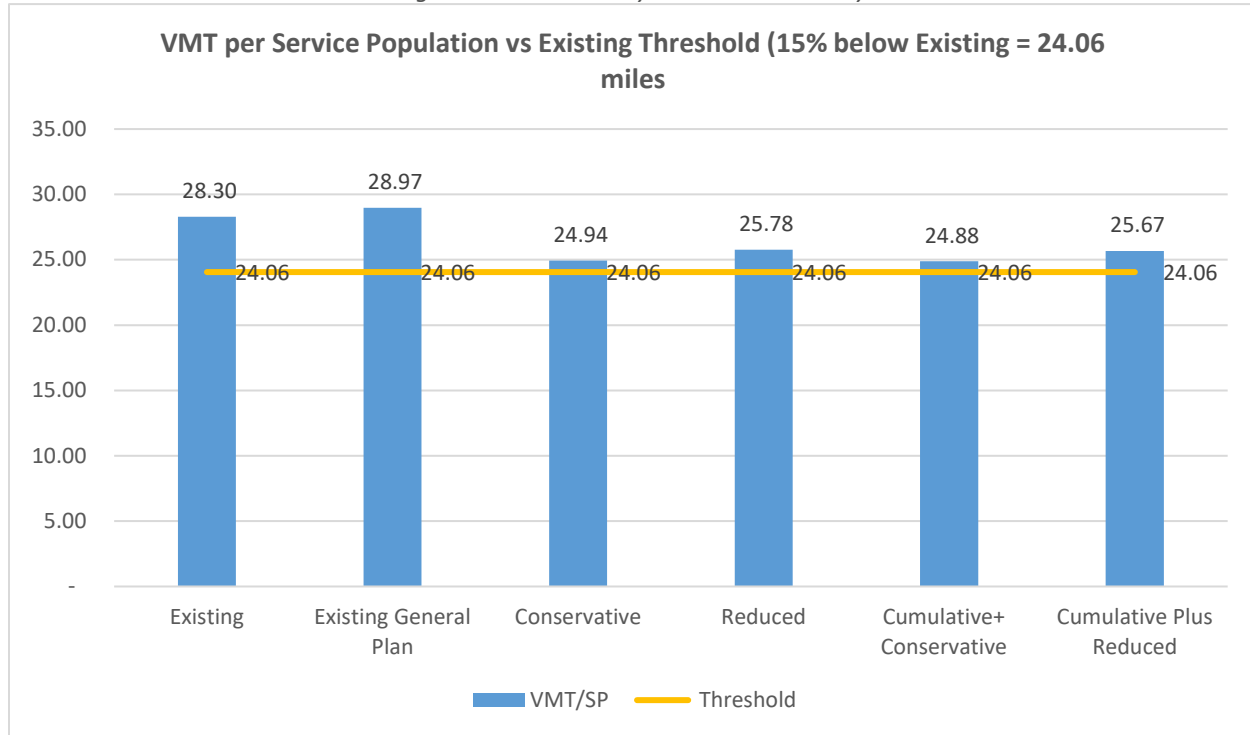
**Table 1-1 and Figure 1-1** shows that all the project alternatives result in significant impact. All alternatives exceed the VMT per service population significance threshold (i.e., 24.06 miles).

*Table 1-1 – VMT Analysis Results Summary*

Project Description	Total VMT (miles)	Total Population	Total Employees	Service Population	VMT per Service Population	Miles Above Existing threshold	% Above VMT threshold (24.06 miles)	% VMT reduction needed to meet threshold
Existing General Plan	20,437,228	368,261	337,102	705,363	28.97	<b>4.98</b>	20.4%	17.0%
Proposed Project (Conservative) Alternative	21,337,558	517,654	337,910	855,564	24.94	<b>0.88</b>	3.7%	3.5%
Reduced Project Alternative	21,008,186	477,019	337,910	814,929	25.78	<b>1.72</b>	7.2%	6.7%
Cumulative Plus Proposed Project (Conservative) Alternative	21,516,666	526,535	338,391	864,926	24.88	<b>0.82</b>	3.4%	3.3%
Cumulative Plus Reduced Project Alternative	21,157,974	485,900	338,391	824,291	25.67	<b>1.62</b>	6.7%	6.3%



Figure 1-2 – VMT Analysis Results Summary



- The Existing General Plan would result in a 20.4% increase in VMT per service population compared to the threshold and requires a 17% reduction in VMT/service population to meet the significance threshold.
- Both the Proposed and Reduced Project Alternatives represent a notable reduction in VMT per service population compared to the existing on-the-ground development and the General Plan. The Proposed Project Alternative requires a 3.5 % reduction in VMT to meet the significance threshold and the Reduced Project Alternative requires a 6.7 % reduction to meet the significance threshold.
- The Cumulative conditions result in a marginally lower VMT per service population compared to the Non-Cumulative alternatives. The cumulative conditions require 3.3% reduction under the Proposed Project Alternative and 6.3% under the Reduced Project Alternative.
- The impacts in both Cumulative and Non-Cumulative for both Proposed and Reduced Project Alternatives could potentially be mitigated by using a combination of onsite design and Transportation Demand Management ( TDM ) measures such as car-pool, van-pool programs, which could result in up to a 7.5 % reduction in VMT impact in areas of the City where a TDM program is existing or may be introduced.
- While there are potential mechanisms to have a programmatic approach to CEQA transportation mitigation based on VMT metrics, it is likely a new, managed mitigation program would need to be enacted by the City which would be subject to several statutory constraints. Most California cities are opting to continue project-level mitigation approaches where the project applicant is directed to develop mitigation with direction from City staff in their role as the CEQA lead agency.
- The extension of Ada under the SCRAA train tracks from the existing terminus at Irvine Station south of the railroad tracks to Marine Way north of the tracks could potentially be screened out from VMT analysis because the extension improves pedestrian and bicycle connectivity by reducing travel distances between the train station and future residential development north of the train tracks. Improved multi-modal access to the train station will also encourage the use of rail trips instead of car trips. Therefore, there is no

significant impact associated with this improvement. This is consistent with expectations when providing a new connection that shortens trip distances.

## 2 INTRODUCTION

As previously noted, the City is preparing the 2045 Focused GPU that will serve as the long-range vision of the City for the next 20 to 25 years. The City as the lead agency has determined that the project will require the preparation of a Program EIR in compliance with CEQA; California Public Resources Code, Section 21000 et seq., and Title 14 of CCR.

In compliance with CEQA, a VMT analysis has been completed for this project. This VMT report assesses the impact of the proposed additional residential and non-residential land uses associated with the GPU on the transportation system, in accordance with the City's Traffic Study Guidelines. The report provides information concerning the methodology, analysis, findings, and recommendation resulting from the VMT analysis. The VMT analysis evaluates five land use alternatives and one transportation alternative:

1. Existing General Plan/No Project Alternative
2. Proposed Project (Conservative Alternative)
3. Reduced Project Alternative
4. Cumulative Plus Proposed Project (Conservative Alternative)
5. Cumulative Plus Reduced Project Alternative
6. Proposed Project Alternative Without Ada Extension (Transportation Alternative)
7. Reduced Project Alternative Without Ada Extension (Transportation Alternative)

### 2.1 PROJECT DESCRIPTION

**Residential Development:** Consistent with the 2021-2029 Housing Element, the project would update the General Plan land use element to support the City's Regional Housing Needs Assessment (RHNA) of 23,610 units. To ensure consistency with State housing statutes, including no-net loss and affirmatively furthering fair housing requirements, the 2021-2029 Housing Element identified adequate sites to accommodate 57,656 new residential uses (55,395 new residential units plus 2,261 unbuilt units already in the General Plan). The Proposed Project (Conservative Alternative) simply adds these 55,395 new units to the Existing General Plan and assumes all other future development in the Existing General Plan would also take place.

However, the City's Existing General Plan has a significant amount of unbuilt non-residential square footage available throughout the planning areas (PAs) identified in the 2021-2029 Housing Element site inventory that would be available for the potential conversion to residential uses. Given the recent history in the City of converting future approved office and warehouse approvals to residential development, the Proposed Project (Conservative Alternative) represents a maximum development scenario which may not occur due to a range of factors.

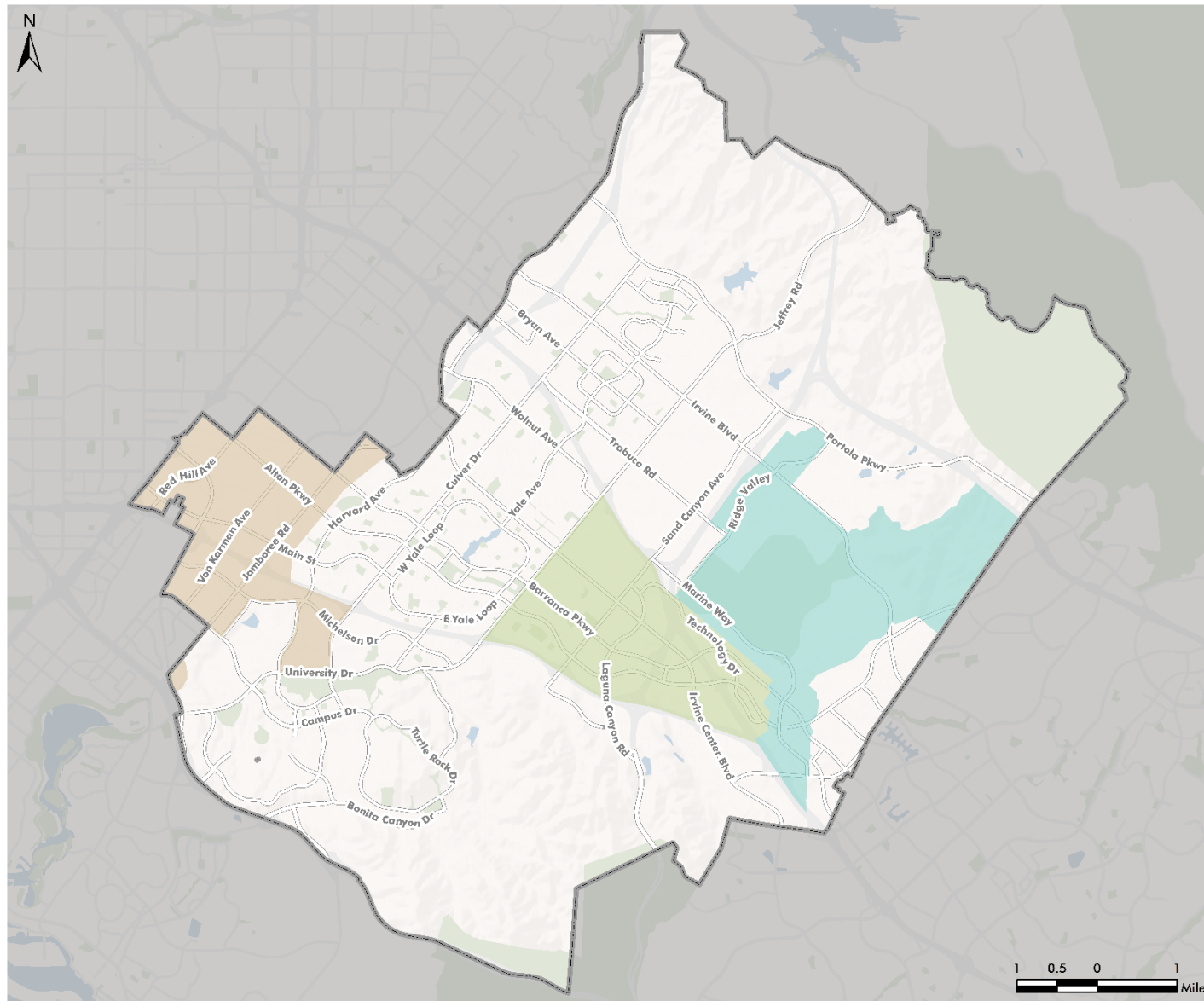
A more realistic Reduced Project Alternative was therefore developed with the assumption that a portion of future unbuilt non-residential square footage would be converted to housing, thereby reducing the total number of dwelling units. Therefore, because of the conversion of non-residential uses to residential uses, the City would add 42,639 units (or 40,378 new residential units plus 2,261 unbuilt units already in the General Plan) under the Reduced Project Alternative. The Reduced Alternative has 15,017 fewer units compared to the maximal Conservative Project Alternative.

Specifically, to accommodate the City's RHNA requirement for new residential units, the project would implement the 2021-2029 Housing Element through the introduction of additional residential and/or mixed-use development throughout the City using overlay zones and/or master plans to allow greater flexibility for property owners and developers. The overlays would promote higher density residential and mixed-use in three focus areas, targeted retail centers, conversion of hotel/motel, and on religious and school sites. It is anticipated that most of the future residential growth would occur in three focus areas that are most suited for new growth and development as they are located near existing job centers and are along major travel corridors with access to existing and future public transit opportunities as shown in **Figure 2-1**.

- Focus Area 1 is the Irvine Business Complex (PA 36 and PA 19);
- Focus Area 2 is the Spectrum area (PAs 13, 31, 32, 33, and a portion of PA 12); and
- Focus Area 3 is the Great Park Neighborhoods (PA 51)

There are also new housing units planned outside the focus areas. In the Conservative Alternative 8,536 of the 55,395 units are located outside the focus areas while in the Reduced Alternative 4,071 of the 40,378 units are located outside the Focus areas.

Figure 2-1: Focus Areas for General Plan Update – New Residential Development



### City of Irvine General Plan



#### Focus Areas for General Plan Update New Residential Development

- Focus Area 1 - PA 36 and 19
- Focus Area 2 - PA 12, 13, 31, 32, and 33
- Focus Area 3 - PA 51

**Non-Residential Land Uses:** In addition to the RHNA residential uses, the project includes additional non-residential park uses within the Irvine Great Park (Great Park). Buildout of the Great Park Framework Plan non-residential park uses are included in all project alternatives except the Existing General Plan. The Existing General Plan is provided to illustrate the differences between the current and proposed General Plan and is intended to be used for informational purposes only.

**Transportation Improvements:** A transportation improvement is part of the project and included in all project alternatives except the existing General Plan. The extension of Ada from its current terminus in the parking lot of the Irvine Station south of the SCRRA railroad tracks is proposed to extend north under the railroad tracks to meet the future Marine Way extension north of the railroad tracks. The Ada roadway extension between the Irvine train station and Marine Way provides multi-modal connectivity to support the residential uses.

## 2.2 STUDY ALTERNATIVES

The VMT traffic study includes the evaluation of five project land use alternatives, including the Existing General Plan, and a single transportation alternative.

In accordance with the City's Traffic Study Guidelines, the alternatives were compared against a significance threshold that was based on a 15% reduction of existing on-the-ground conditions (2023), consistent with the release date of the Notice of Preparation (NOP) for the project. The five alternatives are:

1. **Existing General Plan/No Project** – This scenario represents the currently approved Buildout land uses including Great Park Framework Phase 1. Future development includes unbuilt dwelling units and non-residential uses. However, pursuant to CEQA Guidelines Section 15126.6, the City's analysis of proposed alternatives will also include a "no project" alternative.
2. **Proposed Project (Conservative Alternative)** – This alternative evaluates the Existing General Plan plus 55,395 RHNA housing units within the adopted Housing Site Inventory sites. Buildout of the Great Park Framework Plan non-residential park uses and the extension of Ada from the Irvine Metrolink/Amtrak Station to Marine Way are also included in this alternative.
3. **Reduced Project Alternative** – This alternative evaluates the Existing General Plan plus 40,378 RHNA housing units within the adopted housing site inventory sites. Buildout of the Great Park Framework Plan non-residential park uses and the extension of Ada from the Irvine Station to Marine Way are also included in the Reduced Project Alternative.
4. **Cumulative Plus Conservative Project Alternative** – This alternative evaluates the Proposed Project (Conservative Alternative) plus additional cumulative projects that are assumed to be built in the background conditions in both the City of Irvine and in surrounding jurisdictions. Cumulative projects include known future residential development in adjacent Cities.
5. **Cumulative Plus Reduced Project Alternative** – This alternative evaluates the Reduced Project Alternative plus additional cumulative projects that are assumed to be built in the in the background conditions in both the City of Irvine and in surrounding jurisdictions. Cumulative projects include known future residential development in adjacent Cities.

In addition to these five land-use alternatives, a VMT impact analysis was prepared for two transportation alternatives that proposes the extension of Ada from the existing terminus at the Irvine Station south of the SCRRA railroad tracks under the railroad to Marine Way north of the railroad tracks. To conservatively test the Ada extension in isolation, the City's Transportation Guidelines require a link-based VMT analysis comparing VMT with and without the proposed transportation improvements. Therefore, two additional alternatives were evaluated without Ada to assess the change in VMT associated with the Ada extension.

6. **Proposed Project (Conservative) Alternative without Ada Connection to Marine Way (Transportation Alternative)**
7. **Reduced Project Alternative Without Ada Connection to Marine Way (Transportation Alternative)**

**Table 2-1** lists the residential project description for the Proposed and Reduced Project Alternatives by TAZ in the ITAM. **Table 2-2** summarizes the number of units by Planning Area. There are 55,395 residential units in the Proposed Project Alternative and 40,378 residential units in the Reduced Project Alternative. **Figure 2-2** shows the location and quantity shown in a bar graph of the residential units for both Conservative and Reduced Project Alternatives. **Figure 2-3** shows the residential units for the Proposed Project Alternative only and **Figure 2-4** shows the residential units for the Reduced Project Alternative only.

*Table 2-1 – Residential Units by TAZ for the Proposed and Reduced Project Alternatives*

Planning Area	TAZ	Description	Proposed Project Alternative (Units)	Reduced Project Alternative (Units)
4	37	Condominiums	357	293
6	69	Condominiums	400	284
8	81	Condominiums	274	186
8	102	Condominiums	625	276
12	163	Condominiums	1,113	800
12	165	Condominiums	1,500	1,270
12	166	Condominiums	500	250
12	168	Condominiums	1,170	850
12	169	Condominiums	624	500
15	237	Condominiums	2	2
19	267	Condominiums	482	411
19	268	Condominiums	1,720	1,700
20	272	Condominiums	152	119
24	314	Condominiums	823	555
31	344	Condominiums	638	25
31	346	Condominiums	638	25
31	350	Condominiums	638	25
31	354	Condominiums	1,020	181
32	355	Condominiums	1,216	1,051
32	356	Condominiums	428	400
32	357	Condominiums	909	795
32	358	Condominiums	3,010	2,000
32	359	Condominiums	1,417	1,400
32	360	Condominiums	118	100
32	361	Condominiums	1,478	1,150
32	362	Condominiums	1,460	1,100
32	363	Condominiums	998	950
32	364	Condominiums	1,351	1,000
32	365	Condominiums	1,852	1,550
32	366	Condominiums	1,634	1,600
32	367	Condominiums	1,946	1,840
33	370	Condominiums	383	383
33	375	Condominiums	340	340
33	384	Condominiums	226	226
34	389	Condominiums	85	-

Planning Area	TAZ	Description	Proposed Project Alternative (Units)	Reduced Project Alternative (Units)
35	407	Condominiums	12	-
35	410	Condominiums	2,623	500
35	412	Condominiums	1,232	305
35	419	Condominiums	392	278
35	421	Condominiums	401	400
35	424	Condominiums	579	79
36	426	Multi-Family	290	175
36	429	Multi-Family	386	300
36	433	Multi-Family	370	275
36	439	Multi-Family	613	600
36	443	Multi-Family	255	175
36	445	Multi-Family	217	150
36	452	Multi-Family	311	150
36	456	Multi-Family	73	-
36	458	Multi-Family	180	150
36	464	Multi-Family	738	345
36	466	Multi-Family	541	356
36	474	Multi-Family	1,000	250
36	494	Multi-Family	40	-
36	495	Multi-Family	600	450
36	497	Multi-Family	999	850
36	498	Multi-Family	418	300
36	499	Multi-Family	68	
36	503	Multi-Family	442	300
36	510	Multi-Family	527	400
36	518	Multi-Family	147	100
36	530	Multi-Family	231	175
36	531	Multi-Family	326	250
36	535	Multi-Family	117	25
36	548	Multi-Family	254	175
36	551	Multi-Family	1,543	1,460
36	552	Multi-Family	306	205
36	554	Multi-Family	362	300
36	559	Multi-Family	279	200
36	562	Multi-Family	814	740
36	568	Multi-Family	351	275
39	588	Condominiums	298	298
40	599	Condominiums	281	498
51	689	Multi-Family (GP)	192	192
51	698	Multi-Family (GP)	909	909
51	717	Multi-Family (GP)	81	81
51	718	Multi-Family (GP)	747	747



Planning Area	TAZ	Description	Proposed Project Alternative (Units)	Reduced Project Alternative (Units)
51	719	Multi-Family (GP)	1,200	1,200
51	721	Multi-Family (GP)	452	452
51	722	Multi-Family (GP)	1,671	1,671
<b>TOTAL</b>			<b>55,395</b>	<b>40,378</b>

*Table 2-2 – Comparison of Residential Units by Planning Area*

Planning Area		Proposed Project Alternative (Units)	Reduced Project Alternative (Units)
4	Lower Peters Canyon	357	293
6	Portola Springs	400	284
8	Northwood	899	462
12	Oak Creek	4,907	3,670
15	Woodbridge	2	2
19	Rancho San Joachin	2,202	2,111
20	University Park	152	119
24	University Town Center	823	555
31	Irvine Spectrum 6	2,934	256
32	Irvine Spectrum 3	17,817	14,936
33	Irvine Spectrum Center	949	949
34	Irvine Spectrum 5	85	0
35	Irvine Spectrum 2	5,239	1,562
36	Irvine Business complex	12,798	9,131
39	Los Olivos	298	298
40	Cypress Village	281	498
51	Great Park	5,252	5,252
<b>Total</b>		<b>55,395</b>	<b>40,378</b>

Figure 2-2: Proposed Project (Conservative Alternative) vs. Reduced Project Alternative - Residential Units.

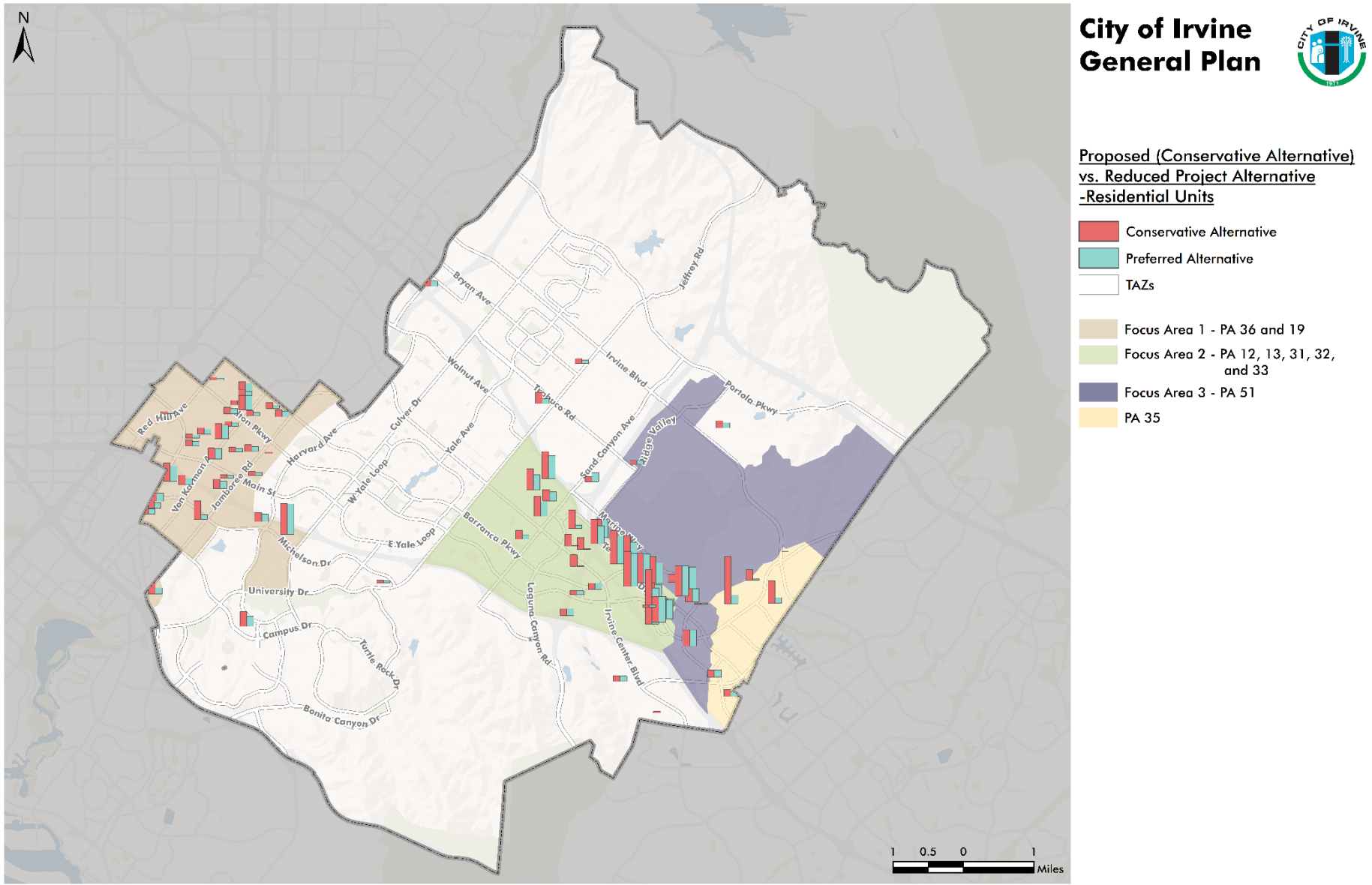


Figure 2-3: Number of New Residential Units – Proposed Project (Conservative Alternative)

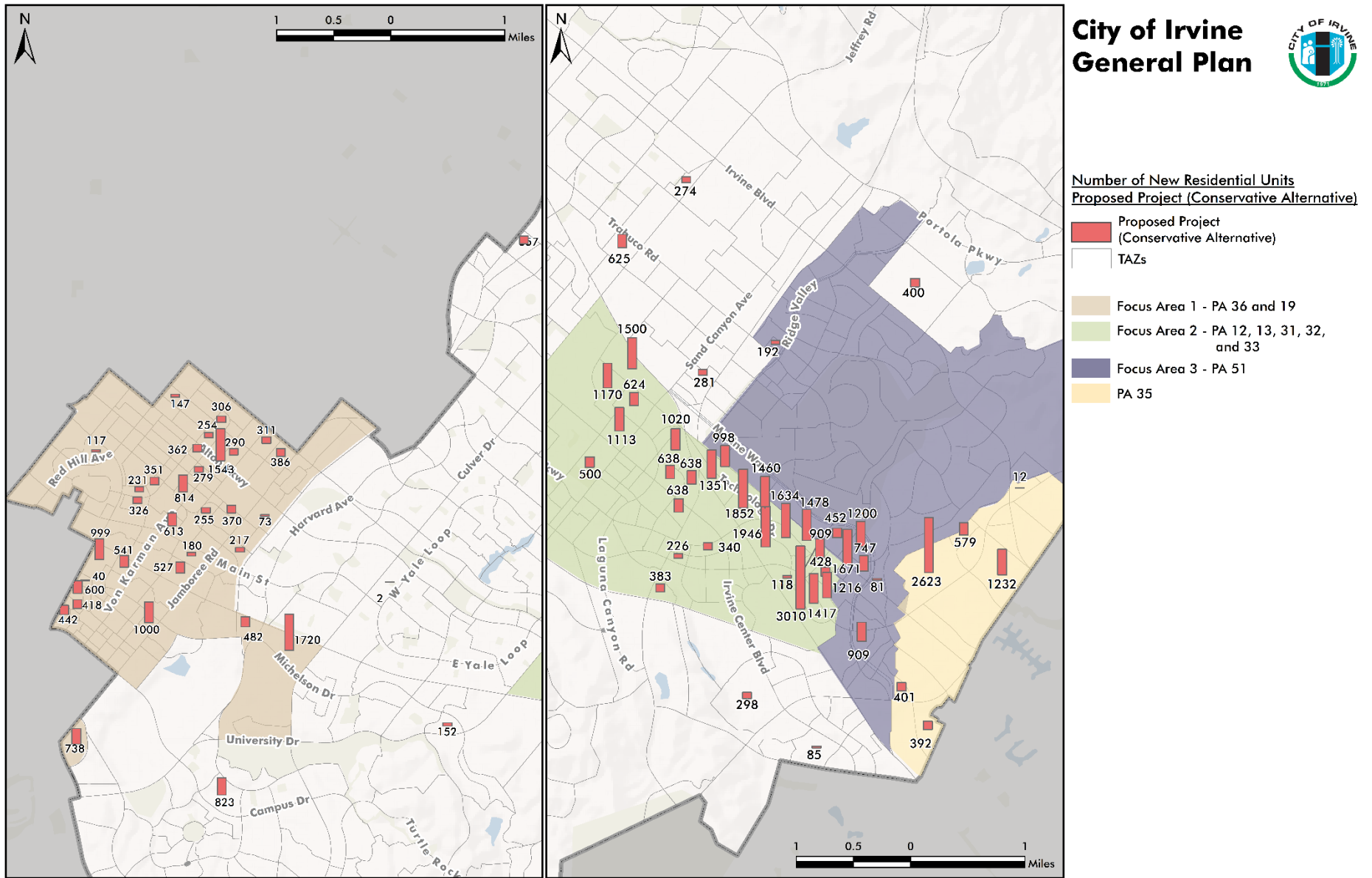
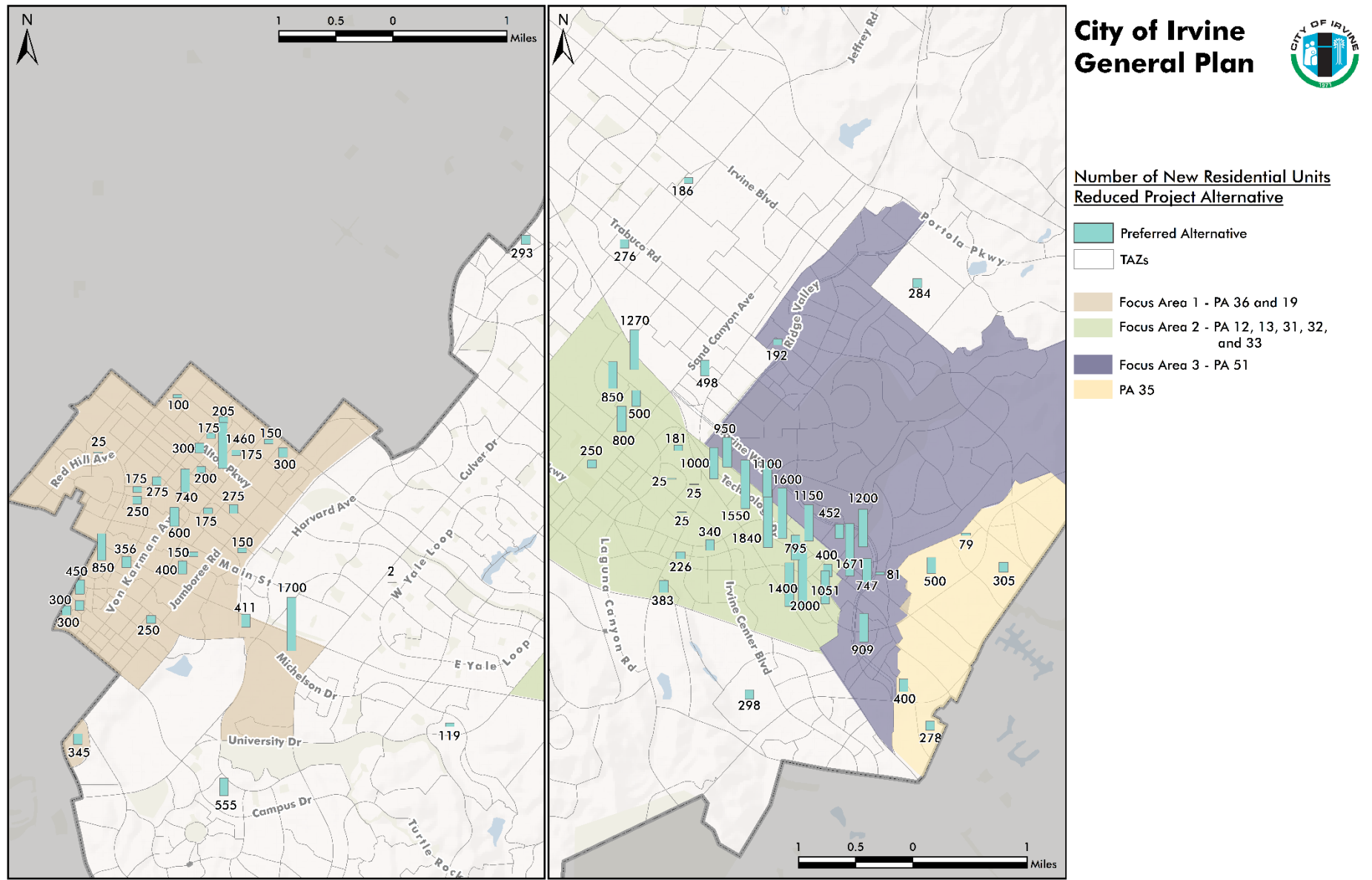


Figure 2-4: Number of New Residential Units – Reduced Project Alternative



**Table 2-3** lists the TAZs and non-residential buildout of the 200-acre Irvine Great Park Framework Plan park uses included in both the Proposed Project (Conservative Alternative) and the Reduced Project Alternative.

*Table 2-3 – Non-residential Project Description for Proposed Project (Conservative Alternative) and Reduced Project Alternative*

TAZ	Sector	Great Park Framework Plan Buildout in Excess of Phase 1	Approximate Quantities	Unit
644	ARDA	Botanical Garden	20	Acre
644	ARDA	Veterans Memorial Garden	20	Acre
644	ARDA	Library	60	TSF
644	ARDA	Discovery Center	7.18	TSF
658	Cultural Terrace	New Museum	400	TSF
664	Cultural Terrace	New Museum	400	TSF
656	Heart of the Park	Park	65	Acre
656	Heart of the Park	Accessory Restaurant	23	TSF
647	Sports Park	Aquatic Center Pools	3	Pool
647	Sports Park	Aquatic Stadium	2500	Seat
642	Bosque	Skate Park	6	Acre
669	Sports Park	Pickleball Court	20	Court

**Cumulative Projects:** For the Cumulative Plus Proposed Project (Conservative Alternative) and Cumulative Plus Reduced Project Alternative, a portion of each neighboring city’s RHNA housing inventory has been added to ITAM based on the known geographic location of future development. These units have been included because they are located within ITAM TAZs physically near Irvine city limits in which land use input data can be added. In addition to the RHNA housing inventory from neighboring cities, some additional projects within the City of Irvine have been added to the Cumulative Plus Proposed Project (Conservative Alternative) and Cumulative Plus Reduced Project Alternative since these projects are currently in various stages of approval. These projects include:

- Bill Barber Gymnasium;
- Civic Center Office Expansion;
- Gateway Residential
- Heritage Park Expansion;
- PA 25 GPA/ZC;
- PA 39 GPA/ZC; and
- PA 40 Residential;

**Table 2-4** lists the projects added to the Cumulative Plus Conservative Project Alternative and Cumulative Plus Reduced Project Alternative.

*Table 2-4 – Assumed Cumulative Projects*

Project/City	TAZ	Unit	Description	Approximate Quantities
Bill Barber Gymnasium	199	TSF	Health Club	90
Civic Center Office Expansion	199	TSF	Office Mix (IBC)	70
Gateway Residential	76	DU	Multi-Family (IBC)	1,200
Heritage Park Expansion	154	Pool	Aquatics	1
Heritage Park Expansion	154	TSF	Community Facility	58
Heritage Park Expansion	154	Each	Tennis Courts	8

Project/City	TAZ	Unit	Description	Approximate Quantities
PA 25 GPA/ZC	316	DU	Multi-Family (IBC)	1,200
PA39 GPA/ZC	588	DU	Multi-Family (IBC)	372
PA40 Residential	606	DU	Multi-Family (IBC)	498
Laguna Beach		DU	Condominiums	169
Laguna Hills		DU	Condominiums	1,032
Laguna Woods		DU	Condominiums	836
Lake Forest		DU	Condominiums	1,998
Newport Beach		DU	Condominiums	2,557
Santa Ana		DU	Condominiums	1,100
Tustin		DU	Condominiums	4,031
<b>Residential Units</b>				
<b>14,993</b>				

The two Cumulative alternatives include a roadway network change that removes the Jeffrey Road extension from SR-241 to Santiago Canyon Road. This removed roadway has been identified as a candidate for removal from OCTA's Master Plan of Arterial Highways.

### 2.3 VMT STUDY AREA

The VMT study area measures the daily VMT from each of the TAZs within the City boundary and includes the full length of each trip generated in ITAM to and from each TAZ within Irvine. The ITAM area encompasses the northern five counties of the Southern California Associated Governments (SCAG) area, namely the Counties of Orange, Los Angeles, Riverside, San Bernardino, and Ventura.

## 3 EXISTING CONDITIONS

This section presents an overview of the existing land use. Additional relevant data sources such as 2020 Circulation Phasing Report and Active Transportation Plan were reviewed.

### 3.1 EXISTING LAND USE

Existing (Year 2023) land uses in the City were obtained from ITAM and aggregated and tabulated by different land use categories. **Table 3-1** shows the existing land uses within the City and **Table 3-2** shows a comparison between existing land uses and the Current General Plan.

*Table 3-1 – Existing Land Use*

Land Use Category	Unit	Amount
Agriculture/Open Space	Acre	5,264
Auto	TSF	571
Childcare Center	TSF	155
Church/Synagogue	TSF	1,129
College/University	TSF	560
Commercial	TSF	5,945
Community Facility	TSF	834
Government Facility	TSF	1,108
Hospital/Health Care	TSF	2,668
Hotel	TSF	731
K-12	TSF	3,130
Mobile Home	DU	893
Multi-family Housing	DU	80,656
Office/R&D	TSF	59,140
Park and Recreation	TSF	2,084
Retail TSF	TSF	1,322
Senior Housing	DU	988
Single-family Housing	DU	34,049
Transportation	TSF	23
Utilities	TSF	109
Warehouse/Industrial/Manufacturing	TSF	25,877



Table 3-2 – Current General Plan vs. Existing Land Use

Land Use	Unit	Existing	Current GP	Difference
Agriculture/Open Space	Acre	5,264	5,000	-265
<b>Total Net Difference - Acre</b>				<b>-265</b>
Mobile Home	DU	893	893	0
Multi-family Housing	DU	80,656	95,136	14,480
Senior Housing	DU	988	1,079	91
Single Family Housing	DU	34,049	35,186	1,137
<b>Total Net Difference - DU</b>				<b>15,708</b>
Auto	TSF	571	635	64
Childcare Center	TSF	155	220	65
Church/Synagogue	TSF	1,129	1,617	488
College/University TSF	TSF	560	961	401
Commercial	TSF	5,945	8,734	2,789
Community Facility	TSF	834	1,499	665
Government Facility	TSF	1,108	1,357	249
Hospital/Health Care	TSF	2,668	6,170	3,502
Hotel	TSF	731	731	0
K-12 TSF	TSF	3,130	3,640	510
Office/R&D	TSF	59,140	78,047	18,907
Park and Recreation	TSF	2,084	2,222	138
Retail TSF	TSF	1,322	1,894	571
Transportation TSF	TSF	23	23	0
Utilities	TSF	109	89	-20
Warehouse/Industrial/Manufacturing	TSF	25,877	28,261	2,384
<b>Total Net Difference - Non-Residential TSF</b>				<b>30,714</b>

Note: DU = Dwelling Units, TSF = Thousand Square Feet

## 3.2 EXISTING ROADWAY NETWORK STATISTICS

Using the ITAM model, lane miles for each arterial highway facility type within the City were calculated. Lane miles are used to measure the total length and lane count of a given highway or roadway. The following lists the roadway facility types within the ITAM roadway network:

- |   |  |
|---|--|
| 1 – Freeway: Limited access, divided, grade separated highway | 6 – Commuter: Two lane undivided arterial highway  |
| 2 – Major: Six (or more) lane divided arterial highway        | 7 – Expressway: Four (or more) lane divided with operational enhancements, possibly limited access |
| 3 – Primary: Four lane divided arterial highway               | 8 – HOV Facility   |
| 4 – Secondary: Four lane undivided arterial highway           | 9 – Freeway Ramp   |
| 5 – Commuter: Two lane divided arterial highway               | 10 – Toll Facility   |

Table 3-3 shows the lane miles for each ITAM facility type.

*Table 3-3 – City of Irvine Lane Miles*

Facility Type #	Facility Type	Lane Miles
1	Freeway	170
2	Major Arterial	366
3	Primary Arterial	284
4	Secondary Arterial	125
5	Commuter Divided	38
6	Commuter Undivided	136
7	Expressway	14
8	HOV	44
9	Freeway Ramp	72
10	Toll Road Lanes	124
<b>Total</b>		<b>1,373</b>

## 4 VMT ANALYSIS METHODOLOGY

CEQA analysis for determining potential significant transportation impacts from vehicle traffic transitioned from an automobile delay or capacity measure to a VMT metric in July 2020, as required by Senate Bill (SB) 743. SB 743 directed agencies to develop new guidelines that provide a transportation performance metric that can help promote the reduction of greenhouse gas emissions, the development of multimodal networks, and diversity of land uses. **VMT is an area-wide performance measure** which helps compare the overall performance of a project or project alternatives and is also used as a metric to ultimately assess the transportation environmental impacts of a project.

VMT analysis shifts the focus towards impacts caused by the distance traveled by vehicles rather than the localized congestion created by vehicles (i.e., intersection-level delay). In essence, utilizing VMT means measuring the impact that motorists have on a network, as opposed to level of service (LOS), which assesses the impact of a project on motorists. In April 2018, the Office of Planning and Research (OPR) issued a Technical Advisory on Evaluating Transportation Impacts in CEQA, to provide CEQA practitioners with assistance and recommendations in applying the new SB 743 guidance. The City updated their traffic study guidelines in June 2020 (further updated in March 2023) to include VMT as the CEQA performance metric.

The City of Irvine maintains an in-house traffic model, ITAM, which is currently used to forecast traffic volumes and calculate Level of Service (LOS) and impacts associated with new development. The traffic model is based on and is certified consistent with the regional Orange County Transportation Analysis Model (OCTAM). The City of Irvine has developed a VMT calculation tool that appends to the traffic model.

The City's approach to calculating VMT "attributable to the project" is consistent with Section 15064.3 of the CEQA Guidelines. In this approach, ITAM is run with the project land uses, and VMT statistics are calculated using trip tables and travel distance "skims" for a project TAZ to calculate the project VMT rate. The project VMT rate is then compared to the VMT threshold rate based on existing conditions at the time when the updated traffic study guidelines were approved. The number of trips for each Origin-Destination pair are multiplied by the distance of that trip for each travel purpose and time period using congested travel times. ITAM also calculates the associated population and employment of a project through its land use to socioeconomic data conversion module. VMT, population, and employment for any given project can be calculated. To determine whether a project has a significant VMT impact, the project VMT metric is compared against the adopted threshold for that metric as shown below:

- **Residential projects:** The residential methodology captures VMT associated with the project and the population resulting from the project. This calculated VMT per capita is compared to the residential VMT threshold. Each residential project should consider if it is appropriate to account for other VMT contributing groups (i.e., residential projects with affordability component).
- **Non-residential projects:** The non-residential methodology captures all non-residential VMT (commute and other non-residential) associated with the project and the number of employees resulting from the project. Non-residential uses include offices, medical offices, hotels, and other land uses. Each non-residential project should consider if it is appropriate to account for VMT-contributing groups in addition to VMT-contributing employees. For example, a medical office may have a VMT-contributing group that considers project-specific estimated number of patients per day in the project VMT rate calculation. Based on extensive testing of this methodology and its application in the City of Irvine, this methodology meets the intent of SB 743. This calculated VMT per employee is compared to the non-residential VMT threshold.
- **Mixed use projects:** For mixed use projects, both the residential VMT per capita and non-residential VMT per employee are calculated. Each type of VMT is then compared to its corresponding threshold. This is consistent with OPR's Technical Advisory P17 *"Lead agencies can evaluate each component of a mixed-use project independently and apply the significance threshold for each project type included (e.g., residential and retail)."*

The City's Traffic Study Guidelines indicate that the City's goal and associated significance threshold criteria is for new projects to generate 15% less VMT per capita (or per employee) compared to existing conditions, which is consistent with OPR's Technical Advisory recommendations.

While the City’s Traffic Study Guidelines provide VMT metrics for individual projects, there is no specific guidance for the treatment of area-wide or Citywide buildout plans such as the General Plan Update. Both the Current General Plan and the project alternatives contain significant changes to both residential and non-residential land uses from current on-the-ground conditions. The resulting VMT impacts of the plans are the result of the complex interaction of the future residential and non-residential development with the existing residential and non-residential development that is not adequately represented by separate residential VMT per capita or non-residential VMT per employee metrics. Instead, a more appropriate metric is **total** (residential plus non-residential) VMT per service population (the sum of population and employment). This methodology is consistent with analysis of citywide plans in other jurisdictions. Therefore, the project alternative will be assumed to have a less than significant impact if its VMT per service population is 15% below the VMT per service population in existing conditions.

**Table 4-1** identifies the existing residential VMT per resident, the non-residential VMT per employee, as well as the VMT per service population with their respective significance thresholds using the City’s VMT traffic model. The residential VMT significance threshold is based on the countywide population VMT divided by the countywide population. The non-residential VMT significance threshold is based on the countywide commute and other (i.e., customer and client) VMT trips divided by the number of countywide employees. The VMT per service population threshold is based on the total countywide VMT divided by the summation of the total countywide population and countywide employees.

*Table 4-1 – VMT Rate Threshold Goals for Projects within the City of Irvine*

VMT Metric	Existing	Threshold Goal (15 % reduction)
VMT per resident	17.50	14.88
VMT per employee	48.66	41.36
VMT per service population	28.30	24.06

For the City of Irvine GPU project, if the project VMT rate exceeds the significance threshold for VMT per service population (24.06), then the project is anticipated to create a significant VMT impact.

# 5 VMT RESULTS

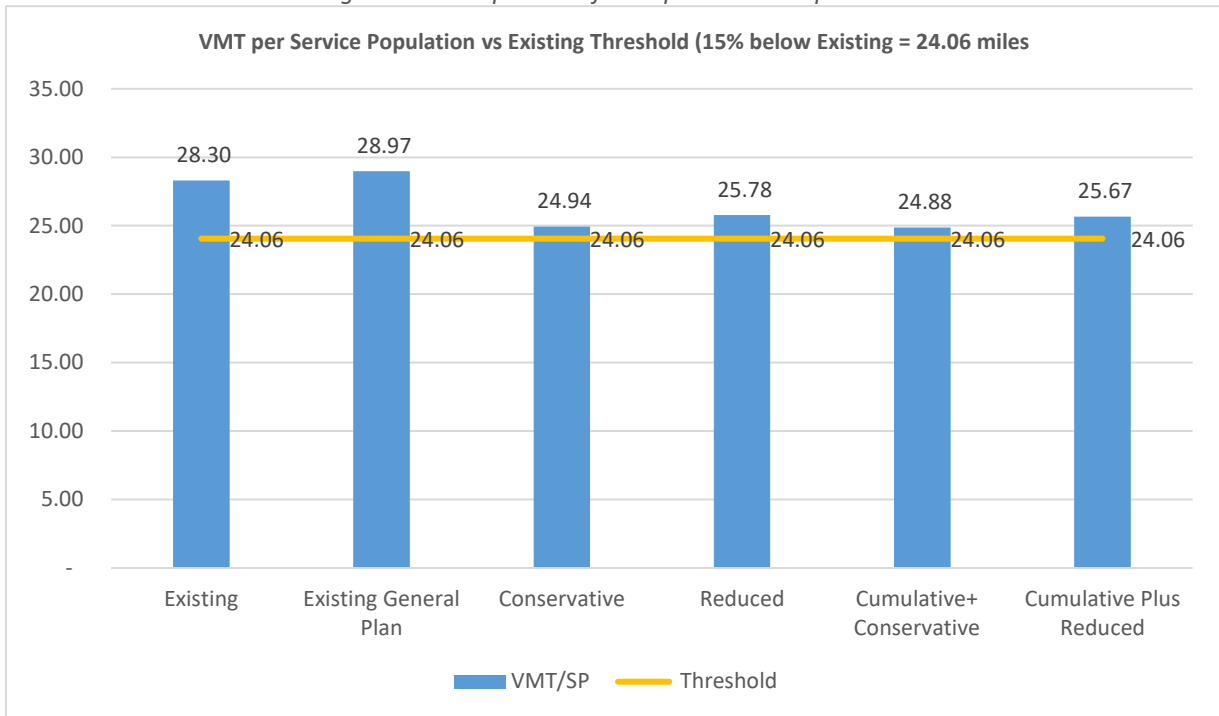
## 5.1 PROJECT ALTERNATIVES VMT

**Table 5-1** summarizes the VMT per service population results associated with all five project alternatives compared to the threshold of 85% (i.e. 15% below) of existing conditions which is 24.06 miles. **Figure 5-1** shows the results graphically. All five project alternatives exceed the City’s VMT per service population threshold by varying degrees.

*Table 5-1 – VMT Analysis Results Summary*

Project Description	Total VMT (miles)	Total Population	Total Employees	Service Population	VMT per Service Population	Miles Above Existing threshold	% Above VMT threshold	% VMT reduction needed to meet threshold
Existing General Plan	20,437,228	368,261	337,102	705,363	28.97	4.98	20.4%	17.0%
Proposed Project (Conservative) Alternative	21,337,558	517,654	337,910	855,564	24.94	0.88	3.7%	3.5%
Reduced Project Alternative	21,008,186	477,019	337,910	814,929	25.78	1.72	7.2%	6.7%
Cumulative Plus Proposed Project (Conservative) Alternative	21,516,666	526,535	338,391	864,926	24.88	0.82	3.4%	3.3%
Cumulative Plus Reduced Project Alternative	21,157,974	485,900	338,391	824,291	25.67	1.62	6.7%	6.3%

*Figure 5-1: Comparison of VMT per Service Population*



**Existing General Plan/No Project Alternative** has an average VMT per service population of 28.97, which is greater than the threshold of 24.06. Therefore, the Existing General Plan is considered to have a significant VMT impact under CEQA. This alternative would require a 17.0 % reduction in VMT impact to meet the significant threshold.

**Proposed Project (Conservative Alternative).** Results for the Proposed Project indicate that it would result in a VMT per service population of 24.94. Therefore, there would be a significant impact under CEQA that would require a 3.5% reduction in VMT impact to meet the significance threshold.

**Reduced Project Alternative.** Results for the Reduced Project Alternative indicate that this alternative would generate a VMT per service population of 25.78. Therefore, there would be a significant impact under CEQA that would require a 6.7% reduction in VMT impact to meet the significance threshold.

**Cumulative Plus Proposed Project (Conservative Alternative).** Results for the Cumulative Plus Proposed Project (Conservative Alternative) indicate that this alternative would generate a VMT per service population of 24.88. Therefore, there would be a significant impact under CEQA that would require a 3.3 % reduction in VMT impact to meet the significance threshold.

**Cumulative Plus Reduced Project Alternative.** Results for the Cumulative Plus Reduced Project Alternative indicate that this alternative would generate a VMT per service population of 25.67 . Therefore, there would be a significant impact under CEQA that would require a 6.3 % reduction in VMT impact to meet the significance threshold.

The two transportation alternatives are not analyzed for VMT per service population since their only purpose is to estimate the net VMT due to the new Ada connection. Ada is included in all four Project Alternatives.

## 5.2 DISCUSSION OF RESULTS

Increasing the number of residential units (and associated density) results in lower VMT per service population and therefore lesser VMT impact which may initially seem counterintuitive. However, the City is a major employment center and is “jobs heavy” with a high jobs-to-population ratio. The City has more jobs than can be sustained by the City’s own population. Many of the jobs are in relatively high-paying professions and employees are more likely and able to afford to make longer distance commutes from less dense residential areas within Irvine as well as residential areas outside the city.

While some of this long-distance travel may occur on freeways outside the city, a large proportion of the VMT will end up on city streets and intersections. The intention of the use of VMT metrics for CEQA is to move more towards regional effects to meet new types of environmental goals such as greenhouse gas effects on climate change rather than localized impacts that are based only on vehicle and driver delay. Shifting towards a more balanced jobs to population ratio can be expected to improve VMT metrics.

The jobs housing balance (more recently referred to as a “jobs-housing fit”) is discussed in an article on the Journal of the American Planning Associates, which indicates that from 2002 to 2015 the jobs housing balance was becoming more imbalanced in most Cities. One of the purposes of the VMT measure under CEQA is to address this balance to reduce commute distances.

*“Municipal government officials and policymakers are increasingly working to encourage a functional balance between housing and employment opportunities, particularly as cities face growing housing affordability crises that push residents to live further away from their jobs and lengthen their commute times. However, while this jobs-housing balance was a popular topic among researchers in the 1990s, it has received less research attention in recent years.*

*Evelyn Blumenberg and Hannah King revisit the issue in the Journal of the American Planning Association, “Jobs-Housing Balance Re-Re-Visited,” in which they test how the jobs-housing balance has shifted in California cities and which factors might be influencing this shift. The authors specifically test whether cities in California have become more or less “self-contained” over time, which they measure using an independence ratio that compares the number of internal work trips*

*in a city (in which the individual works and live within that same city) to external work trips (in which the individual works or lives in a different city).*

Independence Index

$$= \frac{\text{Internal Work Trips (work and live inside city)}}{\text{External Work Trips (work outside city + live outside city)}}$$

*The authors find that the majority of California's cities are becoming less self-contained, with the independence index dropping from 0.075 in 2002 to 0.063 in 2015. This finding extends to cities in the San Francisco Bay Area, where 22 of the 23 cities included became less self-contained from 2002 to 2015. This finding shows a reversal from Cervero's findings that used jobs-housing data from the 1980s, and which showed that Bay Area cities were actually becoming more self-contained at the time.*

*Ultimately, the authors make the case for a better alignment between housing, employment opportunities, and workers in order to lessen the trend of growing commute times."*

**Source:** <https://www.planning.org/blog/9220914/measuring-the-jobs-housing-balance-in-california/>

**Table 5-2** shows the jobs/housing balance for the City of Irvine compared to other jurisdictions in Orange County. The City of Irvine currently has roughly double the number of jobs per population as the rest of Orange County (1.01 vs 0.49). Adding new housing units will help offset this imbalance and provide shorter commutes therefore reducing VMT impacts.

*Table 5-2 – Orange County Jobs to Total Population Existing and Year 2045 (Source: OCTAM)*

City	Existing (2016) OCTAM			2045 OCTAM		
	Jobs	Population	Jobs/ Population Ratio	Jobs	Population	Jobs/ Population Ratio
Aliso Viejo	23,060	48,999	0.47	24,335	51,378	0.47
Anaheim	184,336	339,958	0.54	224,171	393,768	0.57
Brea	44,550	42,783	1.04	48,405	52,550	0.92
Buena Park	34,869	92,923	0.38	39,572	105,712	0.37
Costa Mesa	95,517	115,109	0.83	103,711	124,823	0.83
Cypress	27,214	52,666	0.52	30,270	54,718	0.55
Dana Point	10,500	27,996	0.38	12,057	29,553	0.41
Fountain Valley	29,758	53,162	0.56	32,286	55,264	0.58
Fullerton	66,802	147,890	0.45	85,386	164,441	0.52
Garden grove	57,608	172,344	0.33	68,163	182,432	0.37
Huntington Beach	75,233	195,170	0.39	81,972	203,004	0.40
Irvine	266,993	264,340	1.01	332,003	318,110	1.04
La Habra	21,187	56,339	0.38	26,440	59,702	0.44
La Palma	15,185	14,664	1.04	15,558	14,764	1.05
Laguna Beach	5,054	20,263	0.25	5,375	20,345	0.26
Laguna Hills	18,482	33,776	0.55	19,506	38,823	0.50
Laguna Niguel	18,821	69,340	0.27	21,237	70,887	0.30
Laguna Woods	5,199	15,536	0.33	6,472	15,755	0.41

City	Existing (2016) OCTAM			2045 OCTAM		
	Jobs	Population	Jobs/ Population Ratio	Jobs	Population	Jobs/ Population Ratio
Lake Forest	42,288	77,740	0.54	48,689	86,539	0.56
Los Alamitos	16,498	23,691	0.70	17,461	25,460	0.69
Mission Viejo	38,870	97,289	0.40	39,150	99,025	0.40
Newport Beach	82,574	82,512	1.00	84,118	89,698	0.94
Orange	123,075	139,550	0.88	144,021	155,096	0.93
Placentia	26,761	56,297	0.48	28,681	62,952	0.46
Rancho Santa Margarita	15,872	51,780	0.31	19,059	53,027	0.36
San Clemente	33,472	74,405	0.45	36,420	78,919	0.46
San Juan Capistrano	17,519	37,648	0.47	19,304	43,455	0.44
Santa Ana	158,741	338,586	0.47	168,731	358,731	0.47
Seal Beach	10,456	25,812	0.41	11,457	26,641	0.43
Stanton	8,706	37,515	0.23	10,070	41,495	0.24
Tustin	55,344	76,178	0.73	76,724	86,668	0.89
Unincorporated	40,303	139,364	0.29	57,311	203,925	0.28
Villa Park	2,199	6,203	0.35	2,369	6,357	0.37
Westminster	25,410	97,709	0.26	26,940	102,878	0.26
Yorba Linda	15,192	61,584	0.25	16,824	65,677	0.26
County	1,713,648	3,187,121	0.54	1,984,248	3,542,572	0.56
County excluding Irvine	1,446,655	2,922,781	0.49	1,652,245	3,224,462	0.51

**Figure 5-2** shows the total number of jobs in bar columns superimposed on top of the average jobs per population by City within Orange County. The jobs to population ratio within Irvine was 1.01 in 2016 conditions. Irvine also had the highest number of jobs in Orange County with 264,340. The next highest City is Anaheim with 184,336 jobs. Other cities with high jobs to population ratios include the Cities of Newport Beach, Brea, and La Palma.

**Figure 5-3** shows the forecast jobs housing ratios for 2045 using Orange County Projections data used by OCTA in the OCTAM model. This shows very similar results to the existing conditions data although the jobs-to-population ratio in Irvine becomes even more imbalanced, increasing from 1.01 to 1.04. This represents anticipated jobs and population based on the Existing General Plan.



Figure 5-2: Existing Jobs to Population Ratio and Total Employment (Source: OCTAM)

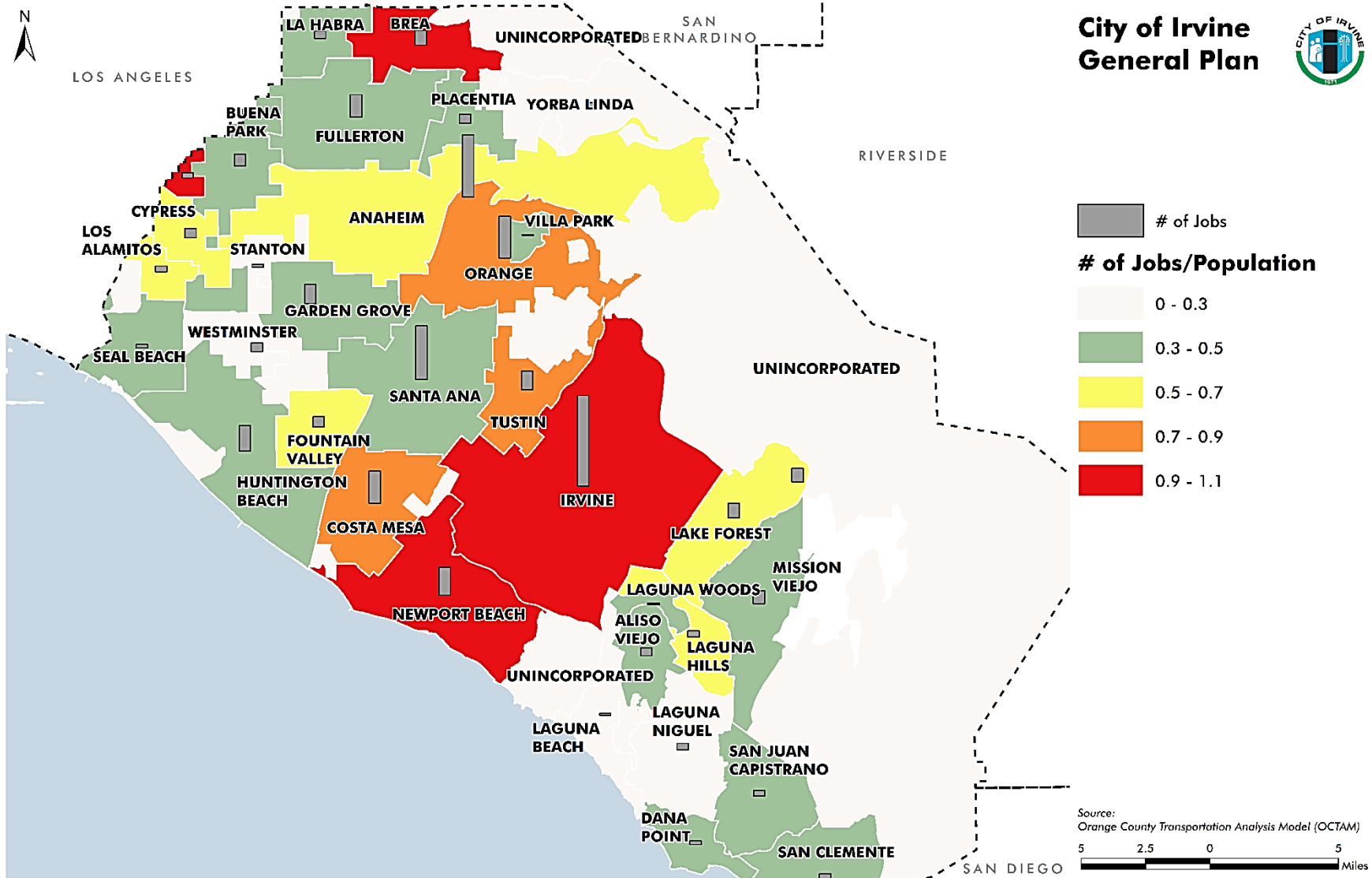
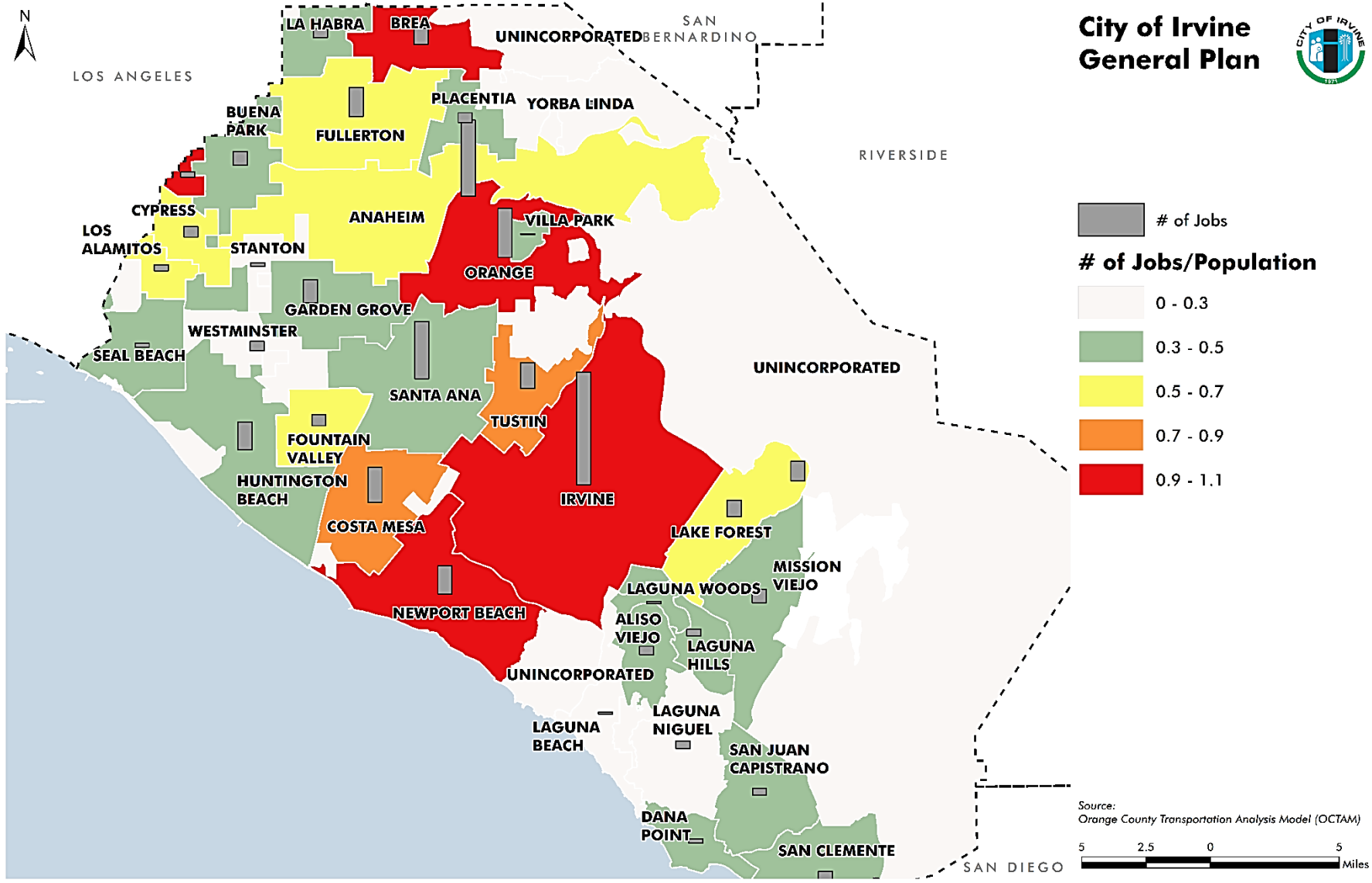


Figure 5-3 – Year 2045 Jobs to Population Ratio and Total Employment (Source: OCTAM)



Based on the VMT results and criteria, the Proposed Project Alternative results in a lower VMT per Service Population than the Reduced Project Alternative. **Table 5-3** represents the decrease in VMT per service population for each alternative compared to that of the Existing General Plan.

*Table 5-3 – Reduced Project VMT per Service Population vs Conservative*

Scenario	VMT per Service Population	Change from Current GP
Existing General Plan	28.97	
Conservative Project Alternative	24.94	-4.03
Reduced Project Alternative	25.78	-3.19
Conservative Plus Cumulative Project Alternative	24.88	-4.09
Reduced Plus Cumulative Project Alternative	25.67	-3.30

### 5.3 TRANSPORTATION ALTERNATIVE VMT

The Ada extension from the Irvine train station under the SCRRRA railroad tracks to Marine Way would provide a new two-lane collector street connection to the future residential development in the Great Park neighborhood and the Irvine Great Park and will improve access to/from the train station for vehicles, pedestrians and cyclists. There is currently no direct path for pedestrians and bicyclists to gain access to land uses on the north side of the railroad tracks from the train station south of the railroad tracks.

The City's Traffic Study Guidelines provide a series of screening criteria to determine whether a transportation improvement would likely result in less than significant VMT impacts and therefore would not require VMT analysis. Most of these screening criteria relate to safety or operational improvements of existing roadway facilities; however, Ada is not an existing roadway providing vehicle access across the railroad tracks. There is justification that screening criteria may be applicable for the Ada extension improvement because the new connection would provide a grade separated crossing to protect vehicles, bicycles and pedestrians crossing the railroad tracks, as well as provide for a separation between pedestrians and bicycles from vehicular traffic on Ada.

City of Irvine Screening Criteria - Through Lanes:

- **Addition of roadway capacity on local or collector streets provided that the project also substantially improves conditions for pedestrians, cyclists,** and, if applicable, transit (e.g., protected and separated Class IV bikeway as well as pedestrian refuges, bulb-outs, and elements that shorten pedestrian crossing distances)
- **Grade separation to separate vehicles from rail,** transit, pedestrian or bicycles, or to replace a lane in order to separate preferential vehicles (e.g. HOV, HOT, or trucks) from general vehicles.

Although justification exists that the Ada extension may be screened from VMT analysis, a VMT impact analysis was performed for informational purposes.

A transportation project VMT impact analysis must evaluate the net change in VMT with and without the transportation project under the build-out scenario. A project that results in no net percentage increase in the total VMT results in no significant impact and therefore, does not require mitigation. This impact analysis methodology for transportation projects is consistent with the methodology employed by the California Department of Transportation as outlined in its Transportation Analysis Under CEQA. A project that results in a net increase in VMT may be deemed significant and may require mitigation such as Intelligent Transportation Systems (ITS) that integrate advanced communications technologies into transportation infrastructure and vehicles to advance safety and mobility.

**Table 5-4** shows the computed link-based VMT from ITAM with and without Ada for the both the Proposed Project (Conservative) Alternative and the Reduced Project Alternative within a three-mile radius of the Ada extension. Three miles was considered a sufficient distance to capture a majority if not all diverted traffic. Overall, there is a 0.05% net reduction in total VMT in both scenarios when the Ada extension is implemented in the network. Therefore, based on

this net reduction in total VMT, there is no significant impact, and no mitigation is required in connection with the Ada extension. **Figure 5-4** shows the net daily traffic change (red increase, blue decrease) in volumes within the three-mile radius for the Proposed Project (Conservative) Alternative and **Figure 5-5** shows the Reduced Project Alternative.

Table 5-4 – Change in VMT With and Without Ada

Alternative	With ADA	Without ADA	Change	Percent Change
Proposed Project (Conservative)	5,807,694	5,810,612	(2,918)	-0.05%
Reduced Project	5,717,095	5,720,150	(3,055)	-0.05%

Figure 5-4 – Change in VMT With and Without Ada – Proposed Project (Conservative) Alternative

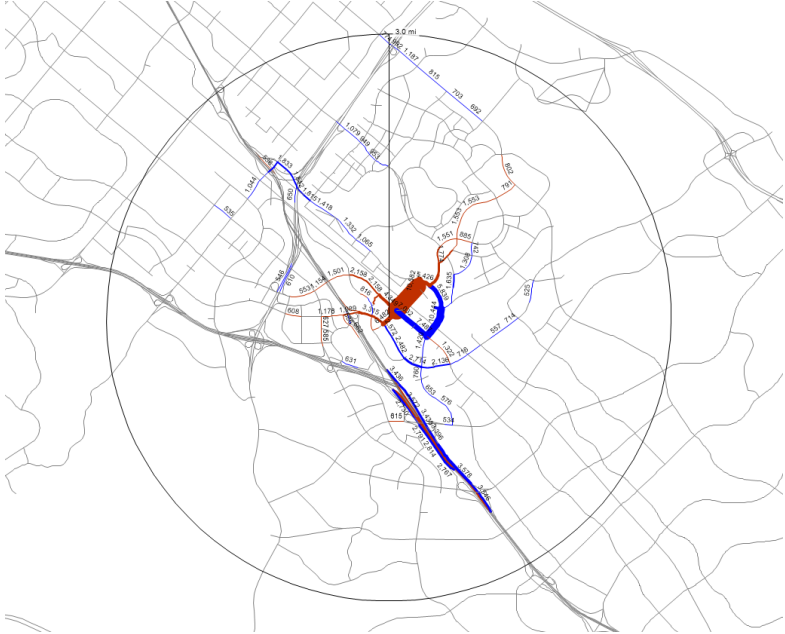
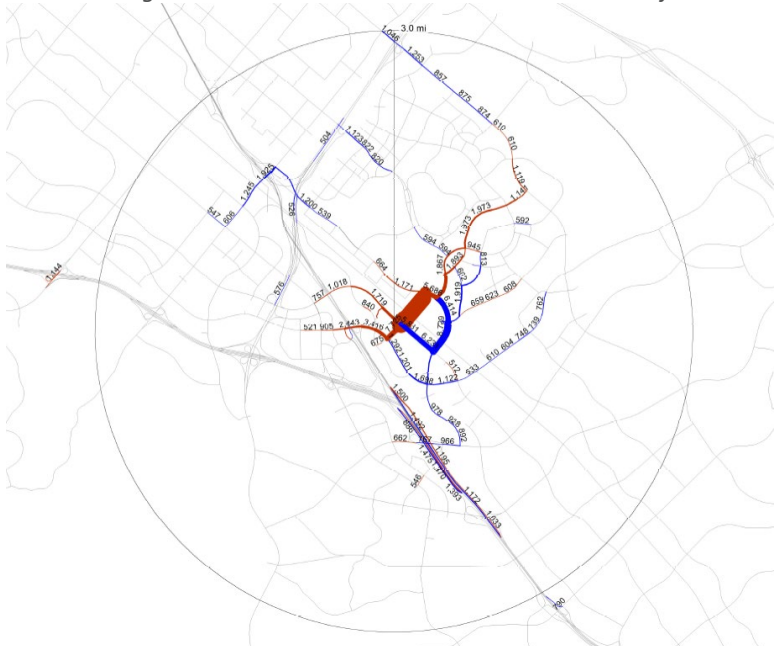


Figure 5-5 – Change in VMT With and Without Ada – Reduced Project Alternative



The net reduction in VMT is consistent with the expectation that a new transportation connection that provides connectivity between land uses on either side of a railroad track results in shortened journey distances, whereas if that connection did not exist, journey distances across the railroad tracks would be lengthier. This is noted in the Office of Planning and Research (OPR) Guidelines for SB 743 implementation (page 34):

*“A project which provides new connectivity across a barrier, such as a new bridge across a river, may provide a shortened path between existing origins and destinations, thereby shortening existing trips. .... this trip-shortening effect might be substantial enough to reduce the amount of vehicle travel resulting from the project .....or even lead a net reduction in vehicle travel overall.”*

## 6 MITIGATION MEASURES

When a project results in a significant VMT impact, the appropriate mitigation measures must be identified to reduce the VMT impact to a level that meets the City's adopted VMT threshold. All feasible mitigation measures must be incorporated into the project to substantially reduce the VMT impact even if the project cannot meet the adopted VMT threshold. If the project cannot meet the adopted VMT threshold rate after all feasible mitigations are incorporated, then a Statement of Overriding Considerations must be adopted along with preparation of an EIR in accordance with CEQA Guidelines.

### 6.1 AVAILABLE MITIGATION MEASURES

The City's Traffic Study Guidelines contain a 2-tier system for the VMT Mitigation Program:

**Tier I – On-Site Infrastructure:** An on-site connectivity reduction of 2.5 % VMT rate can be made due to on-site connectivity improvements as part of the project design to promote bicycle activity (i.e. bike facilities) and pedestrian walkability (i.e., connected sidewalks from building entrances to public streets. The 2.5 % reduction rate is based on the ranges provided in The California Air Pollution Control Officers Association (CAPCOA) Handbook for Analyzing Greenhouse Gas Emission Reductions (2021) [https://www.caleemod.com/documents/handbook/full\\_handbook.pdf](https://www.caleemod.com/documents/handbook/full_handbook.pdf) and other research *1 Handy, S. et al. (2014). Impacts of Pedestrian Strategies on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: <https://arb.ca.gov/cc/sb375/policies/policies.htm>.*

**Tier II – On-Site Transportation Demand Management (TDM):** A reduction of up to 5% can be made if the project develops or is part of a Transportation Demand Management (TDM) program. This reduction is consistent with the CAPCOA Handbook and other research on trip reduction estimates and is supported by observed data from the annual Spectrumotion surveys submitted to the City *2 Boarnet, M. et al. (2014). Impacts of Employer-Based Trip Reduction Programs and Vanpools on Passenger Vehicle Use and Greenhouse Gas Emissions - Policy Brief and Technical Background Document. California Air Resources Board. Retrieved from: <https://arb.ca.gov/cc/sb375/policies/policies.htm>*

While TDM programs in the past have typically focused on employer sites, they can also be implemented to new residential developments with measures such as bike share or car share programs.

**Discussion of VMT Mitigation Fee Program:** The purpose of a VMT mitigation fee program is to fund a set of off-site VMT reduction strategies (meaning strategies that would improve VMT conditions on a broader scale than a single development site) if Tier II reduction strategies are either infeasible or there is an inability to fully mitigate a potential significant VMT impact. A CEQA transportation mitigation fee program would include projects that could demonstrably reduce non-single occupancy vehicle mobility. These projects could either be existing projects from other fee programs or new improvement projects. Since the purpose of this program would be to streamline CEQA requirements, CEQA requires substantial evidence be provided to support findings with particular emphasis should be placed on feasible strategies for which there is a substantive body of evidence about their effects.

There are challenges involved in the implementation of a VMT Mitigation Fee Program including concerns regarding overall costs and the cost-effectiveness of VMT reduction measures, consistency with CEQA, and Mitigation Fee regulations such as nexus and additionally concerns about the economic impact of the fee on future development. These issues are compounded by the fact that several development projects would not need VMT mitigation.

The use of a Mitigation Fee Act (AB 1600 Requirements), Government Code § 66000- 66025-compliant program for use in the mitigation of CEQA significant impacts under the transportation resource area is something that has been explored by several jurisdictions; however, few jurisdictions have moved forward with such programs due to the technical infeasibility of such a mechanism for CEQA mitigation. The title of "Mitigation Fee Act" is not in reference to a CEQA mitigation of a significant environmental impact. The Mitigation Fee Act is intended to allow local agencies to impose a fee as a condition of approval of a development project at is imposed to provide for an improvement to be constructed

to serve the development project, or a fee for public improvements. Mitigation fees are developed by assessing an overall area deficiency and then using the cost of the improvements needed to address the deficiency, resulting in a fee per new unit of development.

CEQA mitigations have additional requirements beyond identification of a physical deficiency. CEQA mitigation's feasibility is determined through not only the type of improvement but its nexus, timeframe, effectiveness, and implementation—generally these requirements fall on the CEQA lead agency. Furthermore, mitigations must provide additional resources that otherwise would not have been provided or providing the additional resources substantially earlier than they otherwise would have been available. This “additionality” requirement means CEQA mitigation funds cannot replace other funds that could be available for a mitigation. In general, for CEQA transportation mitigations, both project applicants and CEQA lead agencies prefer to use infrastructure projects as mitigation where the project is considered mitigated once complete.

These additional requirements and practices result in difficulties in crafting and managing a program that satisfies both Mitigation Fee Act and CEQA mitigation requirements. For a programmatic environmental impact report, it is possible to determine a level of VMT that would need to be mitigated and attach that value to a fee-based mitigation program to be run by the City. This program would need to be closely monitored and managed to ensure mitigations were applied and effective and the program met ongoing legal requirements. In **Hamilton and High, LLC v. City of Palo Alto**, the California Court of Appeal ordered the City to refund nearly a million dollars of unspent “in-lieu parking fees” to the developer of a mixed use project because the City failed to meet the periodic reporting requirements of the Mitigation Fee Act.

Any mitigation that would be outside of the direct implementation of the City (e.g. Metrolink service improvements) may be considered infeasible due to the inability of the City to guarantee the implementation of the mitigation—and payment of mitigation funds to support ongoing projects may have issues with CEQA additionality requirements. This would leave the City with only City infrastructure or programmatic improvements which have not previously had identified funding as off-site mitigation options.

There is also the potential for yet-to-be identified projects which could reduce VMT to be included in a managed program—this is considered a mitigation bank / in-lieu fee option which would require a managed and monitored program run by the City. This model is used for natural habitat restoration. Caltrans and its local/regional partners who sponsor projects on the state highway system regularly pay in-lieu fees to mitigate impacts to biological resources at off-site locations with comparable habitat values. These in lieu fees are often paid to separate agencies or third parties such as a non-profit conservancies that ultimately carry out the biological mitigation activity as separate stand-alone projects. It is important to note that the technical and regulatory protocols regarding the nexus between biological impacts and mitigations is complex and wide-ranging—VMT-specific methodologies and protocols would be required to demonstrate the nexus between VMT impacts and mitigations to ensure the adequacy of mitigation under CEQA as revised by SB 743 and There would need to be a comparable mechanism in place to collect these funds and pass them through to a party that would carry out those strategies in order to demonstrate that their implementation is reasonably assured.

Examples of potential mitigation measures to include in such a program would be transit service funding for a set period or major infrastructure projects such as pedestrian bridges over major arterials. **Table 6-1** shows potential off-site mitigation measures and their potential maximum effect on VMT applied to a subset of project trips. A fuller list of potential VMT mitigation measures is included in **Appendix A** which is extracted from the Ventura County CEQA Vehicle Miles Travelled Adaptive Mitigation Program 2023 [Ventura County Vehicle Miles Traveled Adaptive Mitigation Program - Ventura County Transportation Commission \(goventura.org\)](#)

Table 6-1 – Potential Off site VMT mitigation measures (CAPCOA)

Category	Type	Strategy	Maximum	Affected Group
Land Use	Location	Improve Street Connectivity	30%	Community
Neighborhood Design	Infrastructure	Provide Pedestrian Network Improvement	6.4%	Community
Neighborhood Design	Infrastructure	Construct or Improve Bike Boulevard	0.2%	Corridor
Neighborhood Design	TDM	Implement Conventional Carshare Program	0.15%	Community
Neighborhood Design	TDM	Implement Pedal (Non-Electric) Bikeshare Program	0.03%	Community
All Categories	Infrastructure	Require Contributions to Infrastructure Projects	varies	Community
Cleaner Vehicles and Fuels	TDM	Use Cleaner-Fuel Vehicles	100%	Vehicle replacement
Neighborhood Design	Infrastructure	Provide Traffic Calming Measures	1%	Corridor
Neighborhood Design	Infrastructure	Construct or Improve Bike Facility	0.8%	Corridor
Neighborhood Design	Infrastructure	Dedicated Land for Bike Trails	0.8%	Corridor
Neighborhood Design	Infrastructure	Expand Bikeway Network	0.5%	Community
Neighborhood Design	Infrastructure	Create Urban Non-Motorized Zones	0.2%	Community
Neighborhood Design	TDM	Implement Electric Carshare Program	0.18%	Community
Neighborhood Design	TDM	Implement Electric Bikeshare Program	0.03%	Community
Neighborhood Design	TDM	Implement Scooter-share Program	0.03%	Community
Parking Management	Infrastructure	Implement Market Price Public Parking (On-Street)	30%	Community
Road Pricing	Infrastructure	Implement Area or Cordon Pricing	22%	Community
Parking Management	Infrastructure	Install Park-and-Ride Lots	0.5%	Community
Parking Management	Infrastructure	Require Residential Area Parking Permits	0.36%	Community
Transit	Infrastructure	Increase Transit Service Frequency/Speed	11.30%	Corridor
Transit	Infrastructure	Extend Transit Network Coverage or Hours	4.6%	Corridor
Transit	Infrastructure	Provide Local Shuttles	2.5%	Community
Transit	Infrastructure	Implement Transit-Supportive Roadway Treatments	0.6%	Corridor
Transit	Infrastructure	Provide Bike Parking Near Transit	0.09%	Community
Transit	TDM	Microtransit NEV (neighborhood electric vehicles)	12.7%	Corridor
Transit	TDM	Reduce Transit Fares	1.2%	Community
Trip Reduction Programs	Infrastructure	Implement School Bus Program	63%	Students
Trip Reduction Programs	TDM	Implement School Pool Program	15.8%	Students
Trip Reduction Programs	TDM	Provide Community-Based Travel Planning	2.3%	Community

Potential alternatives to developing a Citywide VMT Mitigation Fee program are use of a regional VMT programs or a VMT mitigation bank administered by agencies such as SCAG or OCTA or development of a fair share mitigation cost applicants could apply towards off-site VMT reducing projects such as active transportation or affordable housing.

Currently there are no regional VMT mitigation programs in Orange County and there are increasing concerns about the legality of such programs due to the challenges of demonstrating a nexus from the fee to VMT improvements for an individual jurisdiction. An additional concern could be that development projects in Irvine could be mitigating impacts with transportation projects located outside of the City that would not necessarily benefit Irvine residents.

In summary, while there are potential mechanisms to have a programmatic approach to CEQA transportation mitigation based on VMT metrics, it is likely a new, managed mitigation program would need to be enacted by the City which would be subject to several statutory constraints. Most California cities are opting to continue project-level mitigation approaches where the project applicant is directed to develop mitigation with direction from City staff in their role as the CEQA lead agency.

## 6.2 POTENTIAL MITIGATION MEASURES

The Conservative Project Alternative requires a 3.5% reduction in VMT to meet the City's VMT threshold while the Reduced Project Alternative requires a 6.7% reduction in VMT to meet the threshold.

Therefore, both the Conservative and Reduced Project Alternatives could meet the VMT threshold with the implementation of a combination of on-site infrastructure improvements (2.5%) and on-site TDM programs (5%), which could provide an overall 7.5% reduction in VMT in certain areas of the City where a TDM program exists or could be introduced as part of a development agreement.



While mitigation measures do not necessarily apply to the Cumulative scenarios (since several projects are outside the City), the fact that the VMT per service population is lower in the Cumulative scenarios compared to the Non-Cumulative scenarios implies that Cumulative impacts would also be mitigated by the same measures needed to mitigate the Non-Cumulative scenarios.

Both options would involve identifying projects with potential VMT reduction improvements. For example, this could be done through projects identified in the City's Active Transportation Plan, or proposed new transit circulator routes, or estimating the VMT reductions and costing the capital and recurring costs of the program to determine a fee per VMT reduced. Other aspects that would need to be considered include:

- **Legal Foundation:** Does the program meet statutory requirements established under CEQA and other relevant state laws?
- **Agency Oversight & Funding:** Which entity would manage the program and how would the program administration be funded?
- **Geography & Scale:** Could the program be applied at multiple geographic scales? How would the location of VMT impacts relate to the location of mitigations?
- **Applicability:** To what types of projects would the program apply, and what types of mitigations would it support? Would the program promote equitable outcomes for members of underserved communities?
- **Data Analysis & Monitoring:** Would the program establish a standardized approach to evaluating VMT impacts and reductions, and have clearly defined methods for ongoing data collection and monitoring?
- **Program Risk Management:** Is the program clear and easy to understand, and does it result in predictable and affordable results?

## 7 CONCLUSIONS

- The Irvine General Plan Update will update the General Plan land use element to support the City's RHNA. For CEQA compliance, a VMT analysis has been completed for this project. The project includes five land-use alternatives and a single transportation alternative.
- Since there is no guidance in the City's Traffic Study Guidelines for the treatment of area-wide or Citywide plans, metrics and thresholds of significance for citywide land-use plans. Therefore, a threshold of significance was developed based on the VMT per service population, which is calculated by dividing the countywide total VMT by the sum of the total countywide population and countywide employment.
- The Current General Plan would result in a significant increase in VMT per service population compared to service population threshold, requiring a 17% reduction to meet the City's VMT per service population significance threshold.
- Both the Conservative and Reduced Project Alternatives represent a notable reduction in VMT per service population compared to the existing on-the-ground development and the Current General Plan. However, since the VMT threshold is 15% below existing conditions, there are still significant impacts with VMT per service population being higher than the acceptable threshold in both the Conservative and Reduced Project Alternatives. The Conservative Project Alternative requires a 3.5% reduction in VMT to meet the City's VMT threshold and the Reduced Project Alternative requires a 6.7% reduction to meet the City's VMT threshold.
- The Cumulative conditions result in a marginally lower VMT per service population compared to the Non-Cumulative alternatives.
- The impacts in both Cumulative and Non-Cumulative for both Conservative and Reduced Project Alternatives could potentially be mitigated in certain geographical areas of the City by using a combination of on-site connectivity design and TDM measures, that would result in up to a 7.5 % reduction in VMT.
- While there are potential mechanisms to have a programmatic approach to CEQA transportation mitigation based on VMT metrics, it is likely a new, managed mitigation program would need to be enacted by the City which would be subject to several statutory constraints. Most California cities are opting to continue project-level mitigation approaches where the project applicant is directed to develop mitigation with direction from City staff in their role as the CEQA lead agency.
- The extension of Ada from the Irvine Train Station to Marine Way would result in a minor reduction in VMT and improve pedestrian and bicycle connectivity thereby reducing travel distances between the train station and the future development north of the train tracks. Improved access to the train station will also encourage the use of rail trips instead of car trips. While this improvement could potentially be screened out from VMT analysis, a VMT analysis was performed the results of which indicate that there was a net reduction in VMT with the proposed Ada extension. Therefore, VMT impacts under this scenario would be less than significant and there is no significant impact associated with this improvement. This is consistent with expectations when providing a new roadway connection that shortens trip distances.



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## APPENDIX I

### Proposed Conditions Infrastructure Report for Water, Sewer, Storm Drainage, and Water Quality

# **CITY OF IRVINE GENERAL PLAN UPDATE**

---

PROPOSED CONDITIONS INFRASTRUCTURE REPORT  
FOR WATER, SEWER, STORM DRAINAGE, AND WATER  
QUALITY

**CITY OF IRVINE**  
ORANGE COUNTY, CALIFORNIA

**PREPARED FOR:**

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**DATE PREPARED: MARCH 13, 2024**

## TABLE OF CONTENTS

<b>1. INTRODUCTION .....</b>	<b>4</b>
1.1 Project Description.....	4
1.2 Scope Of Work.....	4
1.3 Land Use Description.....	6
<b>2. WATER .....</b>	<b>13</b>
2.1 Water System Environmental Setting & Infrastructure .....	13
2.2 Existing Water Demands .....	15
2.3 Proposed Water Demands.....	18
2.4 Water Supply.....	23
2.5 Water Capacity Assessment.....	27
2.5.1 Water Capital Improvement Plans .....	28
2.6 Proposed Land Use and CEQA Threshold Analysis.....	29
<b>3. SEWER .....</b>	<b>31</b>
3.1 Sewer System Environmental Setting & Infrastructure .....	31
3.2 Existing Sewer Flows.....	34
3.3 Proposed Sewer Flows.....	37
3.4 Sewer Capacity Assessment.....	41
3.4.1 Sewer Capital Improvements Plans.....	42
3.5 Proposed Condition and CEQA Threshold Analysis.....	43
<b>4. STORM DRAINAGE AND WATER QUALITY.....</b>	<b>46</b>
4.1 Storm Drainage Environmental Setting & Infrastructure.....	46
4.1.1 Existing Drainage Facilities.....	46
4.1.2 Watershed Setting.....	48
4.2 Existing Flood Plain Mapping.....	50
4.2.1 Regional Flood Control Master Plan.....	52
4.3 Existing Water Quality Regulations .....	53
4.3.1 Existing Groundwater Conditions .....	56
4.3.2 Capital Improvement Plans.....	59
4.4 Proposed Stormwater Condition and CEQA Threshold Analysis.....	61
<b>5. APPENDICES .....</b>	<b>64</b>

**LIST OF FIGURES**

Figure 1 City of Irvine Aerial Extent ..... 5  
Figure 2 City of Irvine Planning Areas ..... 9  
Figure 3 City of Irvine Existing Zoning within the Focus Areas ..... 10  
Figure 4 IRWD Existing Water System Facilities Within the City of Irvine ..... 14  
Figure 5 City of Irvine Proposed Water Demands..... 22  
Figure 6 Existing Sewer System Facilities Within the City of Irvine..... 33  
Figure 7 City of Irvine Proposed Sewer Flows ..... 40  
Figure 8 City of Irvine Existing Storm Drain Facilities..... 47  
Figure 9 City of Irvine Watershed..... 49  
Figure 10 City of Irvine Flood Zones ..... 51

**LIST OF TABLES**

Table 1 Focus Areas Existing Zoning Designations..... 7  
Table 2 Proposed Buildout Plan ..... 11  
Table 3 IRWD Actual and Projected Water Demands..... 15  
Table 4 Existing Land Use Evaluation for Water Demands..... 17  
Table 5 Proposed Land Use Evaluation for Water Demands ..... 20  
Table 6 Net Change (Existing to Proposed) Land Use Evaluation for Water Demands. 21  
Table 7 IRWD Projected Water Supply..... 25  
Table 8 IRWD Projected Water Supply and Demand Comparison ..... 26  
Table 9 Water System Capital Improvement Plans ..... 29  
Table 10 IRWD Wastewater Collection 2020 ..... 34  
Table 11 Existing Land Use Evaluation for Sewer Demands ..... 36  
Table 12 Proposed Land Use Evaluation for Sewer Demands ..... 38  
Table 13 Net Change (Existing to Proposed) Land Use Evaluation for Sewer Flows ..... 39  
Table 14 Sewer System Capital Improvement Plans ..... 43  
Table 15 FEMA Flood Zone Designations..... 50  
Table 16 List of 303(d) Impairments and TMDLs ..... 55  
Table 17 Drainage System Capital Improvement Plans – City of Irvine ..... 59  
Table 18 Drainage System Capital Improvement Plans – OC Public Works ..... 59

**APPENDICES**

- Appendix A** Water Demand Calculations
- Appendix B** Sewer Demand Calculations

## **1. INTRODUCTION**

### **1.1 PROJECT DESCRIPTION**

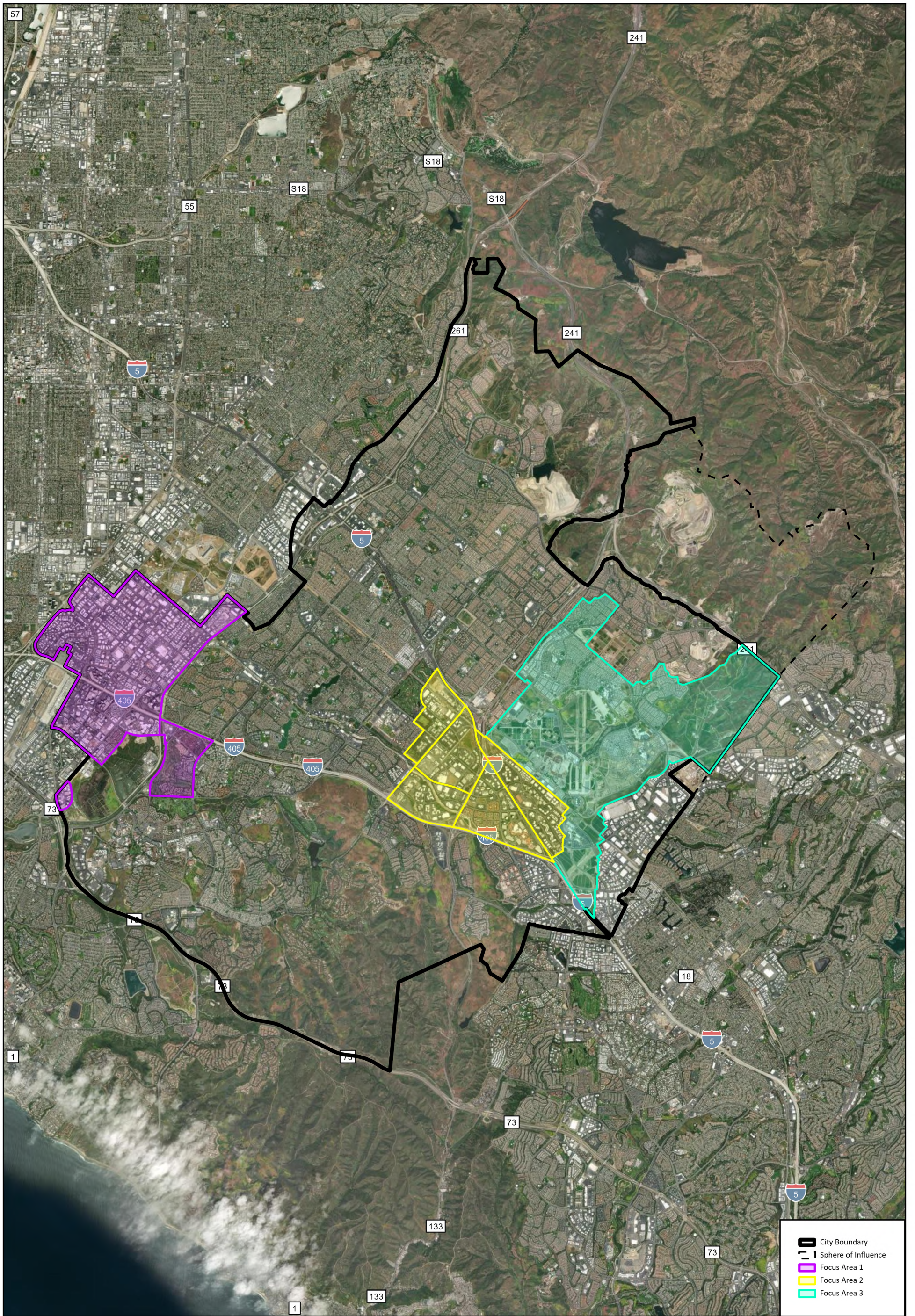
The City of Irvine (“City”) is currently undergoing a General Plan Update (GPU), which is intended to shape development and redevelopment in the City over the next 30-plus years. A General Plan is the principal long-range policy and planning document for guiding California cities and counties’ physical development, conservation, and enhancement of. As part of the GPU and the California Environmental Quality Act (CEQA), infrastructure such as drainage, sewer, water systems, and water quality that support the existing and proposed land uses will be evaluated at a programmatic city-wide level in connection with the proposed land use changes and focus areas.

### **1.2 SCOPE OF WORK**

This infrastructure assessment report describes the primary wet utility infrastructure systems that support the City of Irvine and its sphere of influence (SOI), including water, sewer, storm drainage systems, and water quality programs. As part of the California Environmental Quality Act (CEQA) process associated with GPUs, infrastructure, and utilities that support the existing and proposed land uses will be analyzed at a level consistent with the GPU city-wide program-level planning of an Environmental Impact Report (“EIR”). This report will evaluate the existing conditions of the infrastructure systems that serve the City and SOI (“Irvine GPU”). Under the proposed GPU, the proposed buildout and land use changes will alter demands on existing infrastructure and utilities. The analysis within this report will review, identify, and summarize the effects of the proposed conditions on the existing infrastructure within the water, sewer, storm drainage, and water quality systems. Any significant deficiencies will be identified, along with the tools available to address them, including any major Capital Improvements Plans (CIP) to remedy existing or prospective deficiencies within the City GPU.

See Figure 1 for an aerial extent of the Irvine GPU area.



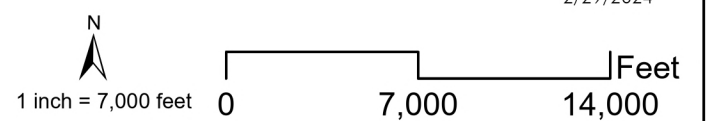


City Boundary  
 Sphere of Influence  
 Focus Area 1  
 Focus Area 2  
 Focus Area 3

**City of Irvine GPU Aerial Extent**

**Figure 1**

2/29/2024



### **1.3 LAND USE DESCRIPTION**

The City of Irvine's Zoning Ordinance<sup>1</sup> defines the land uses throughout the City. The Ordinance establishes regulations to protect public health, safety, and welfare while ensuring alignment with the City's GPU. The ordinance assigns specific land use intensities to planning areas (PAs), promotes compatibility between natural and built environments, incorporates State-mandated development procedures, and maintains existing regulations that align with the GPU. Infrastructure improvements follow building intensity standards, develop new zoning criteria as needed for GPU consistency, and emphasize urban design to enhance the City's development. Additionally, the ordinance encourages innovative solutions within the City and its SOI.

#### **PLANNING AREAS (PA)**

The City is divided into distinct neighborhoods called Planning Areas (PAs) and each PA has a distinct set of land uses and zoning descriptions within the City's GPU. PAs facilitate coordinated development by requiring zoning in accordance with the City's general development standards and land use regulations. See Figure 2 for a visual of the PAs throughout the City.

#### **LAND USE ELEMENT AND HOUSING ELEMENT**

The City's Land Use Element defines local policies for land development, and aligns with the zoning regulations for various residential, commercial, industrial, etc. designations. One of the GPUs primary goals is to update the Land Use Element to align with the 2021-2029 Housing Element<sup>2</sup>, a crucial component of the City's planning framework. The Housing Element analyzes present and future housing needs and establishes goals, policies, and programs for housing preservation, improvement, and development.

In accordance with California Government Code 65583(a), the Housing Element assesses housing needs, including an inventory of resources and constraints. Data from the Southern California Association of Governments (SCAG) and the Housing and Community Development (HCD) informs the City's Housing Element, which in the most recent 2021-2029 Housing element assigned the City a Regional Housing Needs Assessments (RHNA) of up to 23,610 dwelling units.

To comply with state housing statutes, including no-net loss and affirmatively furthering fair housing requirements, the 2021-2029 Housing Element also identified that the City has capacity for up to 57,656 new residential units through a sites inventory. However, the City's current GPU includes a significant amount of unbuilt non-residential square footage (SF) within the PAs. This surplus of non-residential space could potentially be converted to residential dwelling units (DUs).

---

<sup>1</sup> City of Irvine, Zoning Ordinance – Division 1 General Provisions and Definitions. Accessed March 2024. Found here: [https://library.municode.com/ca/irvine/codes/zoning?nodeId=ZOOR\\_DIVIGEPRDE](https://library.municode.com/ca/irvine/codes/zoning?nodeId=ZOOR_DIVIGEPRDE)

<sup>2</sup> City of Irvine, 2021-2029 Housing Element. May 6, 2022. Found here: <https://legacy.cityofirvine.org/civica/filebank/blobdload.asp?BlobID=34118>

Considering this potential conversion, a Reduced Project Alternative, also known as the Preferred Project, would require 15,019 fewer units compared to the Conservative Alternative, which captures all 57,656 new residential units. Instead, the Reduced Project Alternative would add 42,637 new DUs to the general plan to meet RHNA requirements and other development goals. Both approaches involve introducing additional residential and mixed-use development throughout the City using overlay zones and master plans, which offers greater flexibility for developers.

The residential overlays would encourage higher density residential (average 50 DUs/Acre) and mixed-use development in three focus areas. These areas are well-suited for growth, because of their proximity to existing job centers and major travel corridors with access to public transit options. Within this report’s assessment of impacts to wet utilities and infrastructure, the Conservative Alternative/Proposed Project, with the most planned residential growth and units, will be the core focus as it has the potential to have the most impacts in comparison to the less intensive Reduced Project Alternative. See the descriptions of PAs and zoning designation within the three focus areas described below.

- Focus Area 1 – Greater Irvine Business Complex Area: PAs 19 and 36
- Focus Area 2 – Greater Spectrum Area: PAs 12, 13<sup>3</sup>, 31, 32, and 33
- Focus Area 3 - Great Park Neighborhood Transit Village: PA 51

Existing land uses and their zoning descriptions are provided below Table 1.

**Table 1 Focus Areas Existing Zoning Designations**

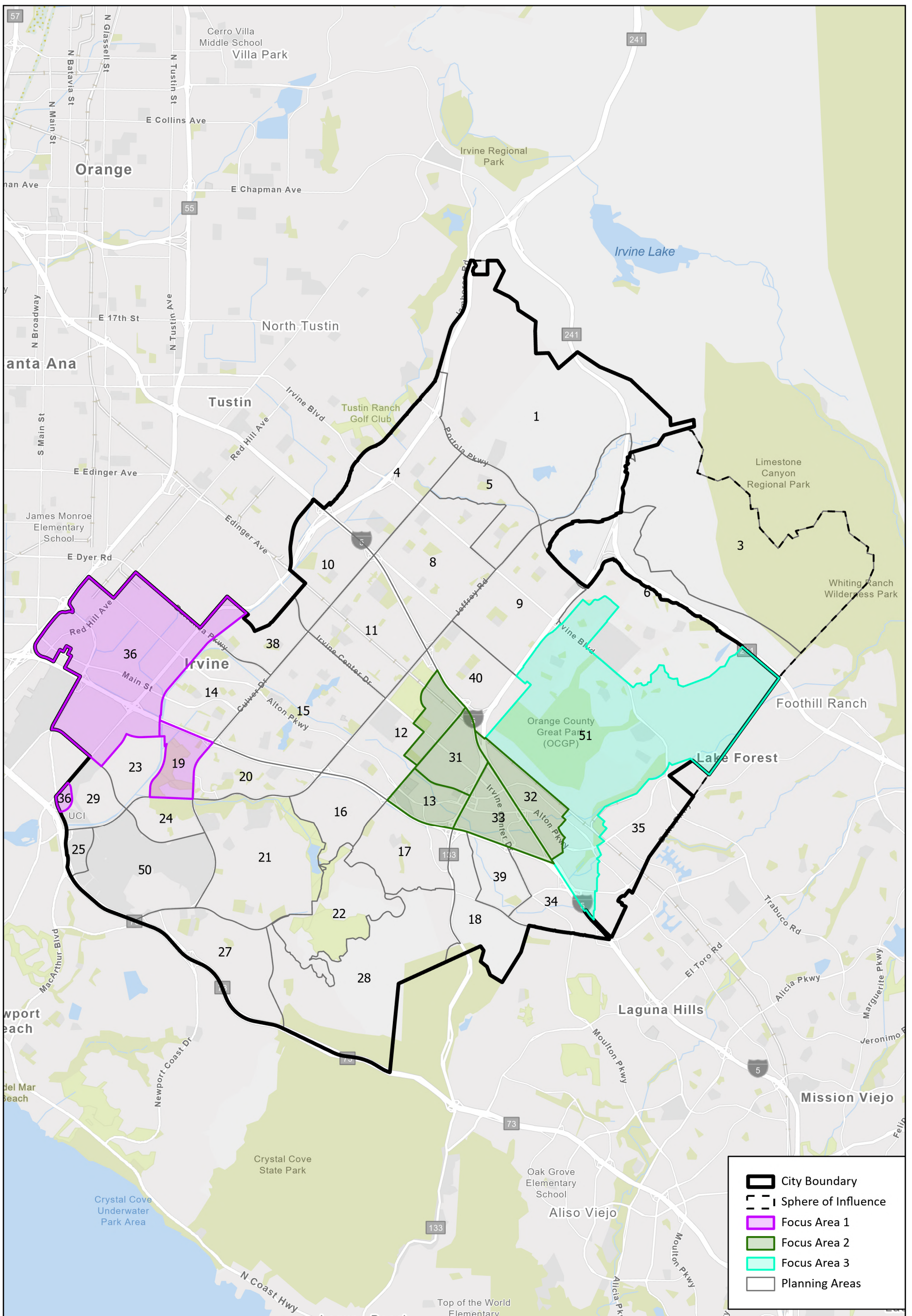
Zoning Designation(s)	Acres within Focus Area	
<b>Focus Area 1 – Greater Irvine Business Complex Area</b>		
Commercial Recreation	34.91	1%
IBC Industrial	92.47	4%
IBC Multi-Use	2,022.39	78%
Irvine Business Complex Mixed-Use	55.31	2%
Irvine Business Complex Residential	102.73	4%
Medium-High Density Residential	71.20	3%
Medium Density Residential	62.61	2%
Neighborhood Commercial	5.00	0%
Recreation	147.14	6%
Water Bodies	2.74	0%
<b>TOTAL ACRES</b>	<b>2,596.49</b>	<b>100%</b>
Zoning Designation(s)	Acres within Focus Area	
<b>Focus Area 2 – Greater Spectrum Area</b>		
Community Commercial	122.46	7%

<sup>3</sup> Note that Planning Area 13 is included within this focus area, but no additional units are proposed or contemplated as part of the project. As such, the analysis with respect to water and wastewater throughout this report does not address Planning Area 13.

Development Reserve	32.03	2%
General Industrial	438.79	27%
Institutional	13.73	1%
Irvine Center Garden Commercial	137.93	8%
Irvine Center Regional Commercial	54.91	3%
Irvine Center Retail/Office Commercial	32.02	2%
Irvine Center Urban Commercial	136.77	8%
Medical and Science	570.41	35%
Preservation	5.88	0%
Recreation	101.49	6%
<b>TOTAL ACRES</b>	<b>1,646.41</b>	<b>100%</b>
<b>Zoning Designation(s)</b>	<b>Acres% within Focus Area</b>	
<b>Focus Area 3 – Great Park Neighborhood Transit Village</b>		
Exclusive Agriculture	117.73	3%
General Industrial	1.25	0%
Institutional	136.54	3%
Multi-Use	1.08	0%
Orange County Great Park	925.93	21%
Preservation	1,166.71	27%
Trails and Transit Oriented Development	1,971.60	46%
<b>TOTAL ACRES</b>	<b>4,320.84</b>	<b>100%</b>

As shown above in Table 1 the City's three focus areas of growth are currently zoned to consist of a range of residential, commercial, industrial, and mixed uses. Most important to note is that each focus area consists largely of one zoning designation with Focus Area 1 being IBC Multi-Use, Focus Area 2 General Industrial & Medical and Science, and Focus Area 3 Trails and Transit Oriented Development. These zoning designations are important to note as they will drive the City's existing land use demands for water and sewer and provide a basis of comparison in determining the effects of the GPU and Housing Elements proposed zoning changes to high density residential for these areas.

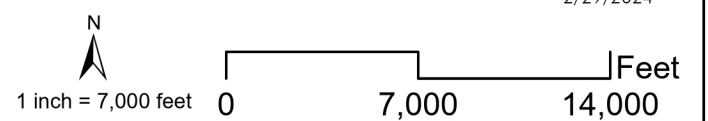
Refer to Figure 3 to see a visual of the zoning designations within the proposed Focus Areas of growth.

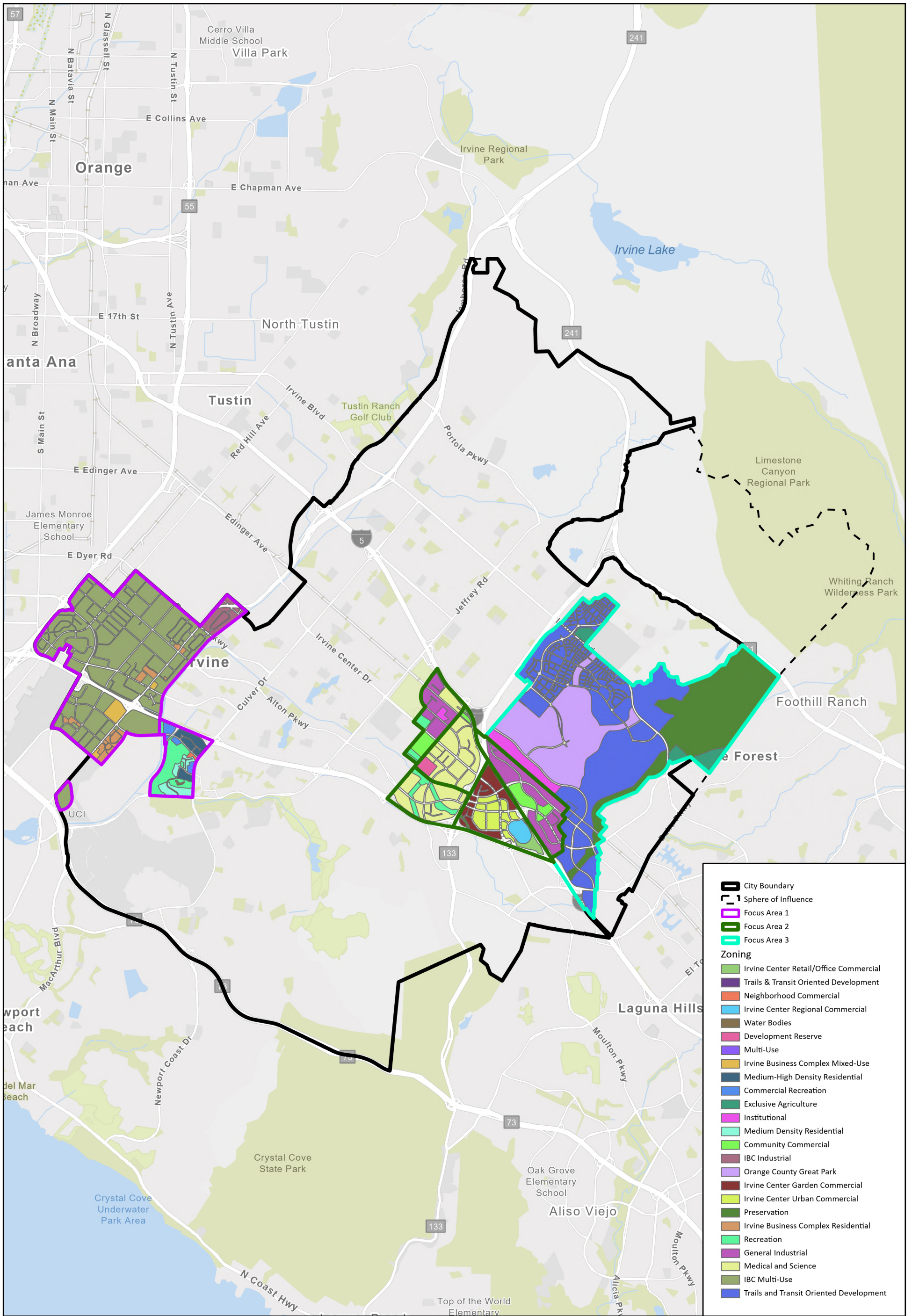


**City of Irvine Planning Areas**

**Figure 2**

2/29/2024

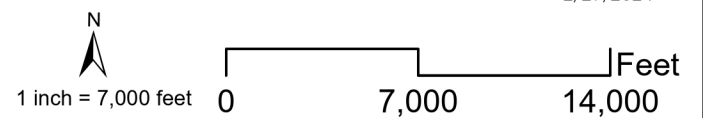




**City of Irvine Existing Zoning within the Focus Areas**

**Figure 3**

2/29/2024



As discussed above, the City’s Conservative Alternative Plan/Proposed Project expects to increase residential land use zoning throughout the City to allow up to 57,656 DUs under the Conservative Alternative housing plan. A majority, 81% of the residential land use increases will occur in the three focus areas and the remaining units 19% are allotted throughout the City’s PAs. These units are expected to be higher density multifamily residential dwelling units with an average density of 50 DUs/Acre. See Table 2 below to understand which PAs and Focus Areas are expected to be zoned for more residential DUs.

**Table 2 Proposed Buildout Plan**

Planning Area(s)	Conservative Alternative Dwelling Units (DUs)	
<b>Focus Area 1 - Greater Irvine Business Complex Area</b>		
19 (Rancho San Joaquin)	2,202	DUs
36 (Irvine Business Complex)	12,798	DUs
<b>Focus Area 2 – Greater Spectrum Area</b>		
12 (Oak Creek)	4,907	DUs
31 (Irvine Spectrum 6)	2,934	DUs
12 (Oak Creek)	4,907	DUs
31 (Irvine Spectrum 6)	2,934	DUs
<b>Focus Area 3 – Great Park Neighborhood Transit Village</b>		
51 (Great Park)	5,252	DUs
<b>Planning Areas Outside of the Focus Areas</b>		
4 (Lower Peters Canyon)	357	DUs
6 (Portola Springs)	400	DUs
8 (Northwood)	899	DUs
15 (Woodbridge)	2	DUs
20 (University Park)	152	DUs
24 (University Town Center)	823	DUs
34 (Irvine Spectrum 5)	85	DUs
35 (Irvine Spectrum 2)	5,239	DUs
39 (Los Olivos)	298	DUs
40 (Cypress Village)	281	DUs
<b>Pending Projects</b>		
IRWD Site	1,261	DUs
Market Place	1,000	DUs
<b>TOTAL</b>	<b>57,656</b>	<b>DUs</b>
<i>DU = Dwelling Unit</i>		
Source: City of Irvine, Project Description and Final Buildout. Received 18 January 2024.		

This report will review the baseline conditions of the water, sewer, storm drainage system, and existing water quality regulations and analyze the potential impact of the proposed Conservative Alternative Plan on the existing infrastructure systems. For CEQA purposes the focus of these assessments will be concentrated on the three focus areas that will undergo the most intensive residential growth. The remaining units will

be spread out among ten different PA's throughout the City and the change in land use throughout the City is not significant enough to impact the existing sewer, water and storm drain systems. Analysis will utilize GIS tools, data, and communication with City staff and local providers.



## **2. WATER**

### **2.1 WATER SYSTEM ENVIRONMENTAL SETTING & INFRASTRUCTURE**

#### **IRVINE RANCH WATER DISTRICT (IRWD)**

The City's existing potable water system is fully encompassed within the Irvine Ranch Water Districts (IRWD) potable and non-potable water service area. IRWD also services portions of the surrounding cities of Tustin, Santa Ana, Orange, Costa Mesa, Lake Forest, Newport Beach, and unincorporated areas of the County of Orange. Altogether the service area is approximately 181 square miles with the City of Irvine and its SOI accounting for approximately 41% (74 square miles) of IRWDs service area.

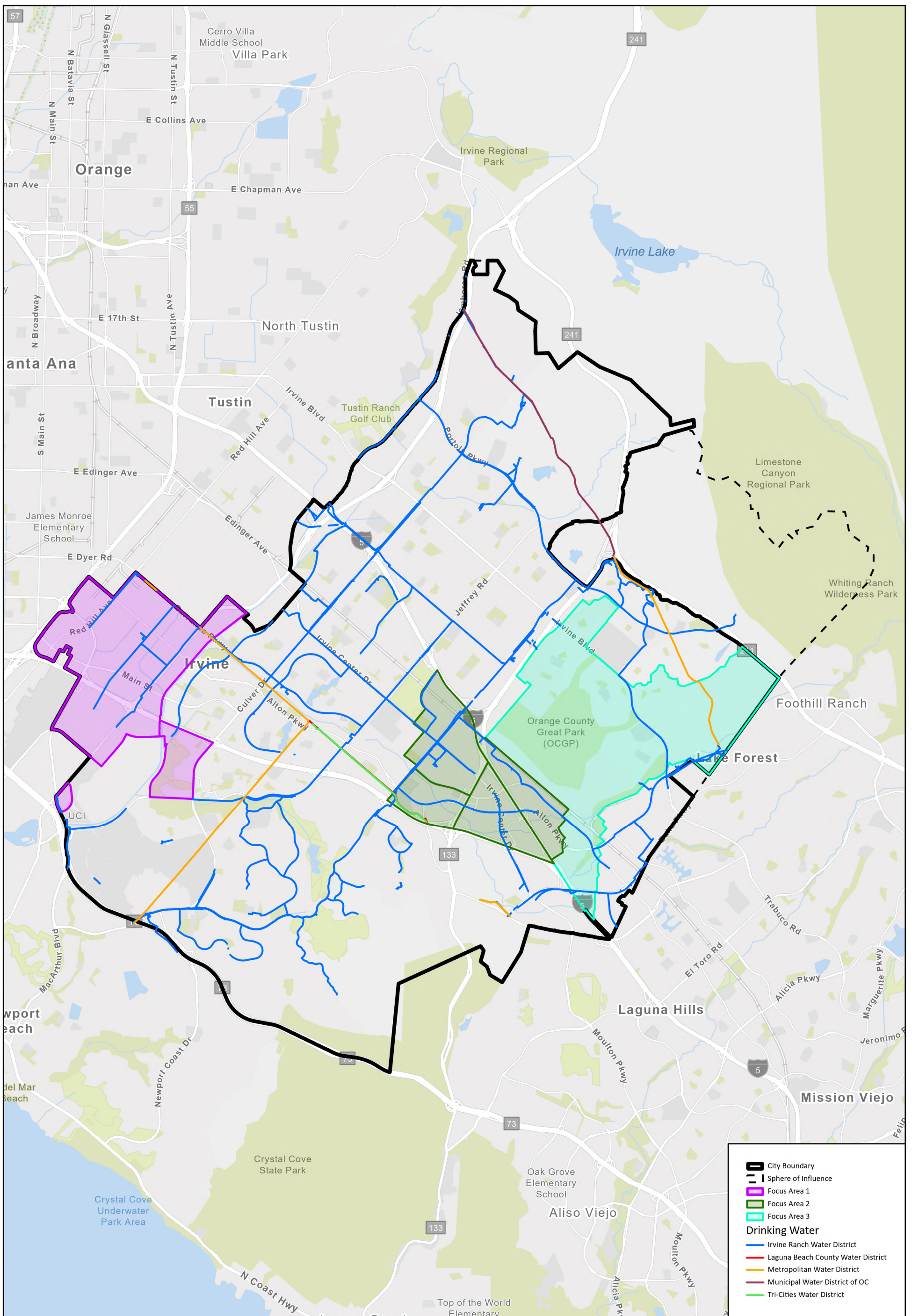
Because IRWD serves about one fifth of Orange County and it has facilities worth over \$1 billion that include more than 1,500 miles of drinking water pipelines, more than 900 miles of sewer pipes, 53 reservoirs and two large water recycling facilities. Distribution pipelines within the City range in diameter between 1" and 72" and have a total length of approximately 78 miles. Most of the water pipes throughout the City are 8" pipes and most of the pipelines were constructed in the 1970's through the 2000's. Refer to Figure 4 to see the District's service area and facilities.

#### **MUNICIPAL WATER DISTRICT OF ORANGE COUNTY (MWDOC)**

IRWD's imported water supplies come from the Metropolitan Water District of Southern California (Metropolitan) and is purchased through the Municipal Water District of Orange County (MWDOC). MWDOC is a wholesale water supplier and resource planning agency that serves all of Orange County through 27 retail water agencies (except for the cities of Anaheim, Fullerton, and Santa Ana). Local water supplies meet more than half of Orange County's total water demand. To meet the remaining demand, MWDOC purchases imported water- from the Colorado River and from the State Water Project in the north- through the Metropolitan Water District of Southern California, and distributes this water to its 27 member agencies, including IRWD. These member agencies are made up of both city water departments and water districts that provide retail water services to the public.

#### **ORANGE COUNTY WATER DISTRICT (OCWD)**

The Orange County Water District (OCWD) serves as the groundwater manager for the main Basin and sub-basins within its jurisdiction. OCWD oversees the groundwater management plan, updating it periodically to ensure effective water management practices. The Basin acts as an underground reservoir, with OCWD managing storage capacity to mitigate drought impacts. IRWD relies heavily on local groundwater sources, with approximately 50% of its overall supply coming from groundwater wells within the Orange County Groundwater Basin and its sub-basins, including Irvine and Lake Forest. IRWD operates groundwater-producing facilities within these areas, holding an adjudicated right to utilize groundwater from the Basin. OCWD's responsibilities extend to protecting water rights, managing replenishment efforts, and overseeing groundwater conditions within the Basin. Groundwater conditions are influenced by various factors, including natural hydrologic processes and artificial recharge methods. Despite challenges, the Basin remains a significant source of water supply for IRWD and other stakeholders within the region.



**Existing Water System Facilities Within the City of Irvine**

**Figure 4**

3/13/2024



## 2.2 EXISTING WATER DEMANDS

### REGIONAL

Water demands throughout the District are driven by existing populations and projected growth linked to the Southern California Associations of Governments (SCAG) projections. SCAG utilizes a detailed modeling framework covering multiple Southern California counties including Orange County and the City. The population, household, and employment projections used by the District to forecast service area population and service connections tie back to the SCAG census tract land use and growth projections. See Table 3 for the District’s estimated water demands for 2020 and projected demands for 2025 to 2040.

**Table 3 IRWD Actual and Projected Water Demands**

Land Use Type	Actual (2020) and Projected Water Demands (2025-2040) (AFY)				
	2020	2025	2030	2035	2040
Single Family	6,885	26,866	30,188	33,510	36,832
Multi-Family	24,955	12,515	14,062	15,609	17,157
Commercial	7,320	9,701	10,900	12,099	13,299
Industrial	5,024	4,465	5,018	5,570	6,122
Institutional/ Gov.	1,454	5,028	5,650	6,272	6,893
Landscape	6,176	1,705	1,915	2,126	2,337
Agricultural Irrigation	1,177	3,225	2,391	1,556	722
Other Potable/ Non-Potable	334	0	0	0	0
Losses	3,049	3,573	3,936	4,298	4,661
<b>TOTAL</b>	<b>56,374</b>	<b>67,078</b>	<b>74,060</b>	<b>81,040</b>	<b>88,023</b>

*AFY = Acre-Feet Per Year*

Source: Irvine Ranch Water District, UWMP "Table 4-1 and 4-2". Found here: [https://wuedata.water.ca.gov/public/uwmp\\_attachments/2761173844/2020%5FUrban%5Fwater%5Fmanagement%5Fplan%5FIRWD%5Fadopted%5FJune2021.pdf](https://wuedata.water.ca.gov/public/uwmp_attachments/2761173844/2020%5FUrban%5Fwater%5Fmanagement%5Fplan%5FIRWD%5Fadopted%5FJune2021.pdf)

As shown in the table above IRWD delivered 56,374 acre-feet (AF) of potable and non-potable water with residential demands (multifamily and single family) accounting for 56% or over half of water demands throughout the service area 2020IRWD projects that by 2040 its service area will demand up to 88,023 AFY, which is an increase of 31,649 AF. This significant growth is captured by IRWDs estimates that there will be significant increases in single family residential uses, commercial uses, and institutional/Government land use. During 2020 IRWD reports that the largest water use came from 44% multi-family residential units, 13% commercial, and 12% single family residential units.

### LOCAL

The water demands generated within the City and its three Focus Areas are representative of a portion of all IRWD’s customer water use and water demand

forecasting. All connections throughout IRWDs service area are metered and IRWD employs water use factors which assigns water demands to various land use types and then aggregates these demands. The water use factors are based on average water use and incorporate the effect of IRWD's tiered-rate conservation pricing (budget-based rates)<sup>4</sup>. For further details on the existing land use evaluation for water demands within the Focus Areas see Table 4 below and Appendix A for notes on how these calculations were derived.

---

<sup>4</sup> Irvine Ranch Water District, 2019, Water Resources Master Plan, Table 3-1

**Table 4 Existing Land Use Evaluation for Water Demands**

Planning Area	Proposed Residential (DUs)	Density/ Acre	Acres of Residential Development	City of Irvine Land Use Category	Estimated Existing Water Demand							
					IRWD Land Use Category	IRWD Water Use Factor Converted to (GPD/Acre)			Existing Water Demand (GPD)		Existing Water Demand (AFY)	
<b>Focus Area 1 – Greater Irvine Business Complex Area</b>												
19 (Rancho San Joaquin)	2,202 DUs	50 DUs/Acre	44 Acres	IBC Multi-Use	Light Industrial	70 GPD/KSF	43,560 SF/Acre	3,049 GPD/Acre	134,287 GPD		150 AFY	
36 (Irvine Business Complex)	12,798 DUs		256 Acres						780,473 GPD		874 AFY	
<b>Focus Area 2 – Greater Spectrum Area</b>												
12 (Oak Creek)	4,907 DUs	50 DUs/Acre	98 Acres	General Industrial & Medical and Science	Industrial - Light & Regional Commercial	70 GPD/KSF	43,560 SF/Acre	4,574 GPD/Acre	448,873 GPD		503 AFY	
31 (Irvine Spectrum 6)	2,934 DUs		59 Acres						268,391 GPD		301 AFY	
32 (Irvine Spectrum 3)	17,817 DUs		356 Acres						1,629,828 GPD		1,826 AFY	
33 (Irvine Spectrum Center)	949 DUs		19 Acres						86,811 GPD		97 AFY	
<b>Focus Area 3 – Great Park Neighborhood Transit Village</b>												
51 (Great Park)	5252 DUs	50 DUs/Acre	105 Acres	Trails and Transit Oriented Development	Regional Commercial	140 GPD/KSF	43,560 SF/Acre	6,098 GPD/Acre	640,576 GPD		718 AFY	
<b>TOTAL 46,859 DUs 937 Acres</b>					<b>ESTIMATED EXISTING WATER DEMAND 3,989,238 GPD 4,469 AFY</b>							
<i>AFY = Acre-Foot Per Year, DU = Dwelling Unit, KSF = thousand square feet, GPD = Gallons Per Day, SF = Square-Foot</i>												

As shown in the table above it is estimated that the existing land uses within the Focus Areas requires approximately 4,469 AFY or 3,989,238 GPD of water. To understand how these demands were generated please refer to the section below.

## **2.3 PROPOSED WATER DEMANDS**

### **METHODOLOGY**

In the process of developing existing and proposed water demands it was noted that the locations of the potential residential units were not readily available to provide a comparison in water use from the existing land uses to the proposed residential conversions. Without being able to specifically compare an existing condition location and associated water demand with a proposed residential location and associated water demand, a practical approach was taken. Namely, the primary focus of the City's Housing Element and the Conservative Alternative Plan/Proposed Project is intensified residential growth with an average of up to 50 DUs / Acre. This residential density was applied within the Focus Areas to determine an estimated acreage of residential development within each area.

After determining the acres of residential development, existing water demands were created by identifying the predominant existing land uses and zoning designations within each Focus Area. As noted in Table 1 each focus area consists largely of one zoning designation with Focus Area 1 being IBC Multi-Use, Focus Area 2 General Industrial & Medical and Science, and Focus Area 3 Trails and Transit Oriented Development. These primary zoning designations within each Focus Area were then matched to IRWD's water use factors, expressed in gallons per day per thousand square foot (gpd/ksf). These factors were then converted to acreages to establish a water use factor in gallons per day per acre (gpd/acre). This factor was then applied to each Focus Area's respective acreage of residential development to evaluate existing water demands in the area.

While this approach simplifies the calculation process and provides a reasonable estimate of existing water demands, it should be noted that it may not capture the full complexity of existing land use patterns and water use. Different land use categories such as commercial, industrial, or open space, may have varying water use profiles when compared to residential areas. However, due to the lack of detailed data on existing land uses, this approach is necessary to proceed with the analysis and determine the impacts on water and water infrastructure from an existing to proposed condition. By applying the average density of dwellings units per acre to the existing land use area, it allows for a consistent basis of comparison between existing and proposed water demands. It also provides a practical way to assess the potential impacts of proposed zoning changes on water demands within the City's Focus Areas of growth.

Similar to the existing land use evaluation methodology, the proposed water demand estimates also utilize the acreages of residential development to generate a proposed demand within the Focus Areas. To generate a water use, factor the average density of 50 DUs/ Acre was matched to IRWDs water use factor for high rise density units in Irvine. IRWD categorizes high rise density land uses as any development with a density of 40.0 DUs/Acre or more. Water demands associated with these high-rise density developments are shown to be 125 GPD/DU and this water factor was then converted to GPD/ Acre by applying the Housing Elements projected average density of 50 DUs/

Acre to it which results in a demand of 6,250 GPD/ Acre. Refer to Table 5 for the estimated demands generated from each Focus Areas of the residential development.

**Table 5 Proposed Land Use Evaluation for Water Demands**

Planning Area	Proposed Residential (DUs)		Density/Acre		Acres of Residential Development		City of Irvine Land Use Category	Estimated Proposed Water Demands										
								IRWD Land Use Category	IRWD Water Use Factor Converted to (GPD/Acre)				Proposed Water Demand (GPD)		Proposed Water Demand (AFY)			
<b>Focus Area 1 – Greater Irvine Business Complex Area</b>																		
19 (Rancho San Joaquin)	2,202	DUs	50	DUs/Acre	44	Acres	IBC Multi-Use	High Rise Density - Irvine	125	GPD/DU	50	DU/Acre	6,250	GPD/Acre	275,250	GPD	308	AFY
36 (Irvine Business Complex)	12,798	DUs			256	Acres			125	GPD/DU	50	DU/Acre	6,250	GPD/Acre	1,599,750	GPD	1,792	AFY
<b>Focus Area 2 – Greater Spectrum Area</b>																		
12 (Oak Creek)	4,907	DUs			98	Acres	General Industrial & Medical and Science	High Rise Density - Irvine							613,375	GPD	687	AFY
31 (Irvine Spectrum 6)	2,934	DUs	50	DUs/Acre	59	Acres			125	GPD/DU	50	DU/Acre	6,250	GPD/Acre	366,750	GPD	411	AFY
32 (Irvine Spectrum 3)	17,817	DUs			356	Acres			125	GPD/DU	50	DU/Acre	6,250	GPD/Acre	2,227,125	GPD	2,495	AFY
33 (Irvine Spectrum Center)	949	DUs			19	Acres									118,625	GPD	133	AFY
<b>Focus Area 3 – Great Park Neighborhood Transit Village</b>																		
51 (Great Park)	5252	DUs	50	DUs/Acre	105	Acres	Trails and Transit Oriented Development	High Rise Density - Irvine	125	GPD/DU	50	DU/Acre	6,250	GPD/Acre	656,500	GPD	735	AFY
<b>TOTAL</b>	<b>46,859</b>	<b>DUs</b>			<b>937</b>	<b>Acres</b>	<b>ESTIMATED PROPOSED WATER DEMAND</b>						<b>5,857,375</b>	<b>GPD</b>	<b>6,561</b>	<b>AFY</b>		
<i>AFY = Acre-Feet Per Year, DU = Dwelling Unit, KSF = thousand square feet, GPD = Gallons Per Day, SF = Square-Feet</i>																		



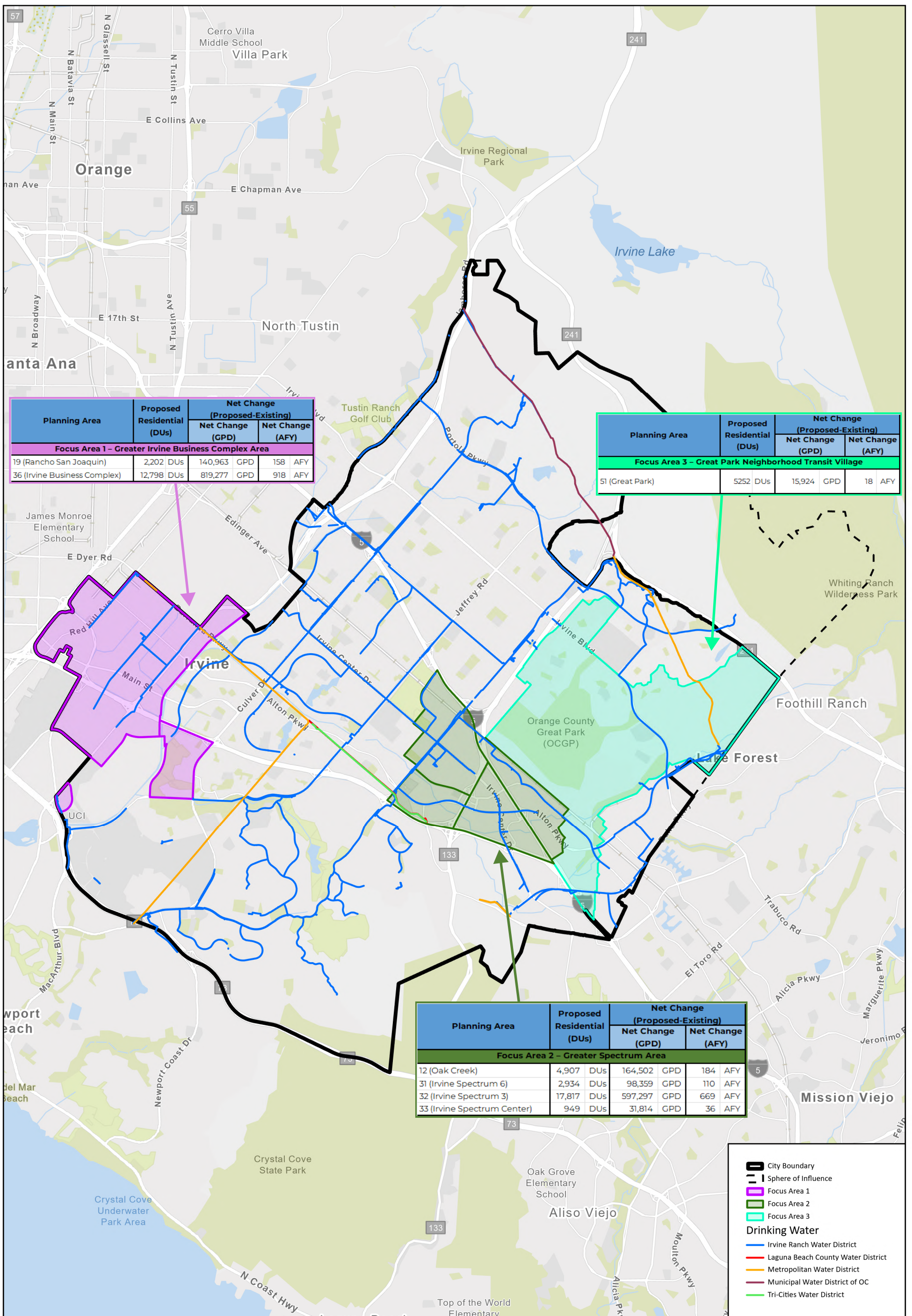
As shown above in Table 5 under the proposed Conservative Alternative/Proposed Project land use plan, the GPU will potentially increase the number of residential units by 57,656 DUs or 46,859 DUs (81% of all units) within the Focus Areas. This increase in units has the potential to generate demands up to 6,561 AFY or 5,857,375 GPD within the three Focus Areas. See Appendix A for a table of the water demand calculations and IRWDs water use factors.

The difference between the water demands calculated in Tables 4 and 5 are representative of the net change in demands for the areas of residential development. See Table 6 below for more details.

**Table 6 Net Change (Existing to Proposed) Land Use Evaluation for Water Demands**

Planning Area	Proposed Residential (DUs)	Net Change (Proposed-Existing)					
		Net Change (GPD)		Net Change (AFY)			
<b>Focus Area 1 – Greater Irvine Business Complex Area</b>							
19 (Rancho San Joaquin)	2,202 DUs	140,963	GPD	158	AFY		
36 (Irvine Business Complex)	12,798 DUs	819,277	GPD	918	AFY		
<b>Focus Area 2 – Greater Spectrum Area</b>							
12 (Oak Creek)	4,907 DUs	164,502	GPD	184	AFY		
31 (Irvine Spectrum 6)	2,934 DUs	98,359	GPD	110	AFY		
32 (Irvine Spectrum 3)	17,817 DUs	597,297	GPD	669	AFY		
33 (Irvine Spectrum Center)	949 DUs	31,814	GPD	36	AFY		
<b>Focus Area 3 – Great Park Neighborhood Transit Village</b>							
51 (Great Park)	5252 DUs	15,924	GPD	18	AFY		
<b>TOTAL</b>		<b>46,859</b>	<b>DUs</b>	<b>1,868,137</b>	<b>GPD</b>	<b>2,093</b>	<b>AFY</b>

As shown above, it is projected that these land use changes within the Focus Areas will produce an estimated water demand increase of 2,093 AFY (1,868,137 GPD). See Figure 5 for a summary of the GPU's proposed water demands and Appendix A to review details regarding the methodology of the existing, proposed, and net change water demand calculations.



**City of Irvine Proposed Water Demands**

**Figure 5**

2/29/2024



## 2.4 WATER SUPPLY

IRWD's water supply system includes local groundwater and surface water supplies (56% of total), recycled water (28% of total), and imported water from the Municipal Water District of Orange County (MWDOC) (16% of total). MWDOC is a wholesale importer and member agency of the Metropolitan Water District (MWD) and is entitled to receive water from the available sources of MWD including Colorado River and Northern California surface water. IRWD also has contracts with Kern County to store up to 126,000 AF of groundwater storage and extract up to 28,750 AF per year during dry years<sup>5</sup>. These water resources are described in more detail below.

### LOCAL GROUNDWATER

The City and its SOI is located within the Coastal Plain of Orange County groundwater basin also known as Basin 8-1. Under the Sustainable Groundwater Management Act (SGMA), the Basin 8-1 is classified as a medium priority basin, due to heavy reliance on the Basin's groundwater as a source of water supply<sup>6</sup>. The IRWD's local surface water supplies are the drainage tributary areas to the Irvine Lake and Harding Canyon Reservoir. On average, about 4,000 AFY are captured for IRWD's demands. Water supplies available from the Harding Canyon are often limited due to dry-weather conditions. Recycled water meets about 33% of IRWD's (non-potable; agricultural irrigation, landscape, golf course, commercial, and industrial uses) water demands. In 2020, approximately 24,626 AF of wastewater was recycled within the service area from the Michelson Water Recycling Plant (MWRP) and Los Alisos Water Recycling Plant (LAWRP) (Table 6-3, UWMP, 2020). In the case there isn't sufficient supplies of treated wastewater for use from the MWRP and LAWRP, supplemental untreated imported water can be used.

There are minimal stormwater recovery systems. IRWD captures dry weather runoff via Peter's Canyon Channel Water Capture and Reuse project (three intersections in the channel are used to capture and send dry-weather runoff to Orange County Sanitation District (OCSD) for treatment and eventual recharge into groundwater sources). There are currently no commitments for purchase of desalination water by IRWD.

### SUSTAINABLE GROUNDWATER MANAGEMENT ACT (SGMA)

The SGMA addresses the sustainable management of groundwater in California. This legislation is the result of severe water shortages in California, long-term issues with land subsidence, and overdrafting of groundwater aquifers. Department of Water Resources (DWR) identified the status of water basins by overdraft and priority levels (e.g., very low, low, medium, or high). While the Orange County Water District's (OCWD) water basin is not in overdraft, OCWD prepared a groundwater management plans<sup>7</sup> to further long-term groundwater sustainability. The plan describes basin hydrogeology, water supply monitoring, management and operation of recharge facilities,

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<sup>5</sup> Irvine Ranch Water District, 2020 Urban Water Management Plan

<sup>6</sup> California Department of Water Resources, SGMA Basin Prioritization Board, Accessed March 2024. Found here: <https://gis.water.ca.gov/app/bp-dashboard/final/#>.

<sup>7</sup> Orange County Water District, 2015. Groundwater Management Plan. Found here: [https://www.ocwd.com/wp-content/uploads/groundwatermanagementplan2015update\\_20150624.pdf](https://www.ocwd.com/wp-content/uploads/groundwatermanagementplan2015update_20150624.pdf)

groundwater replenishment system, seawater intrusion and barrier management, and water quality protection.

### **IMPORTED WATER**

As previously noted, (MWDOC) is the wholesale water supplier that serves all of Orange County through 27 retail water agencies including IRWD. Local water supplies meet more than half of Orange County's total water demand. To meet the remaining demand, MWDOC purchases imported water- from the Colorado River and from the State Water Project in the north- through the Metropolitan Water District of Southern California and distributes this water to its 27 member agencies. IRWD utilizes imported water to meet its water needs. Supplies from the Colorado River and the State Water Project are treated at Metropolitan's Diemer Filtration Plant, which receives a blend of Colorado River water from Lake Matthews and this treated water is delivered to the City through pipelines owned by IRWD. IRWD also purchases untreated or non-potable imported water to meet certain agricultural and irrigation demands, as well as to supplement the recycled water system during peak months. This untreated water is supplied through the Baker Pipeline, which serves the Baker Water Treatment Plant. Additionally, IRWD receives untreated Colorado River water through the OC-33 turnout connection.

### **RECYCLED WATER**

Water recycling is an essential part of IRWD's water supply portfolio, as it reduces the demand for high-quality potable drinking water. IRWD's recycled water program began with the focus of providing tertiary treated Title 22 recycled water to serve agriculture. Today, new developments must install dual plumbing that allows recycled water to be used for landscaping, toilets, and other uses not requiring potable water. IRWD recycled water serves many state approved uses, including landscape irrigation, toilet flushing, cooling towers, industrial processes, composting, grading, and compaction.

IRWD maintains an extensive infrastructure system for recycled water. This includes a recycled water pipeline system that includes more than 500 miles of dual distribution pipelines. Water is recycled at the Michelson Water Recycling Plant (MWRP) and Los Alisos Water Recycling Plant (LAWRP). The MWRP has a permitted tertiary treatment capacity of 28 mgd and recycles 90 percent of the plant's sewage inflow. To support the over 5,400 recycled water users, IRWD has 15 reservoirs with a storage capacity of 4,536 acre-feet of recycled water.

### **WATER SUPPLY PROJECTIONS**

As of 2020, IRWDs potable and non-potable water supply system consisted of the sources and quantities listed below in Table 7.

**Table 7 IRWD Projected Water Supply**

Water Supply	Existing & Projected Water Supply (AFY)				
	2020	2025	2030	2035	2040
MWD – Potable Purchased or Imported Water	12,861	51,027	51,027	51,027	51,027
MWD – Non-Potable Purchased or Imported	1,168	17,347	17,347	17,347	17,347
Surface Water	6,600	3,048	3,048	3,048	3,048
Potable Groundwater	37,990	49,480	49,480	49,480	49,480
Non-Potable Groundwater	4,437	3,461	3,461	3,461	3,461
Future Potable Water - Groundwater	-	12,352	12,352	12,352	12,352
MWRP & LAWRP – Recycled Water	24,627	42,012	42,012	42,012	42,012
<b>TOTAL</b>	<b>87,683</b>	<b>178,727</b>	<b>178,727</b>	<b>178,727</b>	<b>178,727</b>

*AFY = Acre-Feet Per Year*

Source: Irvine Ranch Water District, UWMP "Table 6-8 and 6-9". Found here: [https://wuedata.water.ca.gov/public/uwmp\\_attachments/2761173844/2020%5FUrban%5Fwater%5Fmanagement%5Fplan%5FIRWD%5Fadopted%5FJune2021.pdf](https://wuedata.water.ca.gov/public/uwmp_attachments/2761173844/2020%5FUrban%5Fwater%5Fmanagement%5Fplan%5FIRWD%5Fadopted%5FJune2021.pdf)

As shown above the 2020 actual supply totals do not fully encompass the entirety of IRWD’s groundwater supply capabilities or its connected delivery capacity through Metropolitan and MWDOC. On the other hand, the planned supply resources for 2025 to 2040 are IRWDs projections for total supply capacities that will be available to IRWD. These planned resources are based on historical groundwater production, planned future supply projects, and data from Metropolitan and MWDOC’s 2020 UWMPs. The projections are also representative of data pulled from IRWDs Water Resources Master Plan (WRMP), which indicates reasonably available supplies from 2025 to 2040. Overall IRWD projects to have up to 178,727 AFY of water available from 2020 to 2040.

**URBAN WATER MANAGEMENT PLANS**

Through Urban Water Management Plan (UWMP) reporting, IRWD uses population growth, climate scenarios, water supplies, water conservation, large development projects and approved specific plans and other factors to estimate future water demand and evaluate the ability to meet this demand through various water supply sources over a 20-year projection. This document is required by the California Water Code and based on the Water Resources Master Plan (WRMP), with certain elements required by the water code. It is updated every five years, and the latest revision was prepared in 2020.

**Land Use and Water Resources Planning** – IRWD considers future development projects and schedules to determine current and future supply and infrastructure. The planning information for these development projects are either contained in Sub Area Master Plans (SAMPs) or sites are acknowledged by IRWD as potential development areas. IRWDs current 2020 UWMP accounts for various specific and general plan

growth, namely up to 24,107 residential dwelling units and 18 million commercial and industrial square feet throughout its service area. Several of these areas encompass portions of the City's PAs and the GPUs three focus areas.

Although the estimated 24,000 units that IRWD has noted in the 2020 UWMP does not encompass the extensive 56,756 plus units zoned for development in the City's GPU the UWMPs estimates IRWD consistently evaluates potential development areas. Thus, as the GPU progresses development areas will be evaluated for appropriate facility planning as IRWD is made aware of their development schedules.

**WATER SUPPLY EVALUATION**

Taking the difference between the projected demands shown in Table 3 and projected available supply in Table 7 it is evident that IRWD will have a surplus of water available to its service area. See Table 8 below for a summary of the difference between IRWDs projected supply and demand totals.

**Table 8 IRWD Projected Water Supply and Demand Comparison**

	Existing & Projected Water Supply (AFY)				
	2020	2025	2030	2035	2040
Supply Totals	87,683	178,727	178,727	178,727	178,727
Demand Totals	56,374	67,078	74,060	81,040	88,023
<b>DIFFERENCE (AFY)</b>	<b>31,309</b>	<b>111,649</b>	<b>104,667</b>	<b>97,687</b>	<b>90,704</b>
<i>AFY = Acre-Feet Per Year</i>					
Source: Irvine Ranch Water District, UWMP "Table 4-1, 4-2, 6-8, and 6-9". Found here: <a href="https://wuedata.water.ca.gov/public/uwmp_attachments/2761173844/2020%5FUrban%5Fwater%5Fmanagement%5Fplan%5FIRWD%5Fadopted%5Fjune2021.pdf">https://wuedata.water.ca.gov/public/uwmp_attachments/2761173844/2020%5FUrban%5Fwater%5Fmanagement%5Fplan%5FIRWD%5Fadopted%5Fjune2021.pdf</a>					

As shown in the table above IRWD anticipates that it will have a surplus of water supply ranging from 31,909 AF to 111,649 AF when comparing the difference of IRWDs water supply and demand totals. Surplus water is available to all IRWDs service areas, including the City.

In determining the environmental impacts of the City's GPU through a CEQA lens, the projected demands from the addition of the Focus Areas 46,859 residential DUs fall well within IRWDs total water supply projections. In total the Focus Areas account for 81% of the GPUs Conservative Alternative land use plan which calls for up to 57,656 residential DUs. IRWDs robust water supply projections indicate that they are more than capable of accommodating the projected demand increase of 2,093 AFY because of the proposed zoning within the Focus Areas and the entire allotment of residential DU's based on the large supply availability Looking ahead, IRWD is prepared to incorporate these land use changes into the next 2025 UWMP thus ensuring that evolving development aligns with available water resources. Furthermore, water supply assessments (WSAs) will play a pivotal role in managing larger projects from a water supply perspective. These WSAs that are subject to approval by IRWD will serve as a crucial water resource planning tool, that allows the District to track water supply and demands, and thus ensuring water supply reliability as large projects are developed.

The City and IRWD will continue to collaborate on various planning documents, such as the City's GPU, to prepare for future developments, zoning updates, and necessary infrastructure and supply improvements.

## **2.5 WATER CAPACITY ASSESSMENT**

In addition to assuring that there is ample water supplies available to its service area through the UWMP, IRWD utilize several other resources such as a Water Resources Master Plan (WRMP), WSAs, Improvement Districts, and Capital Improvement Plans (CIPs) to monitor, improve, and repair local and regional water infrastructure and supplies.

### **WATER RESOURCES MASTER PLAN (WRMP)**

To effectively manage such a large water system, IRWD developed a comprehensive planning document titled Water Resources Master Plan (WRMP) that identifies existing and future planned water supply sources and demands. The most recent update occurred in 2019. The data within the WRMP is used for hydraulic modeling, the groundwater work plan, assessments of available water supply for specific development projects as required by CWC Section 10910, sub-area master plans and basin pumping projections. As part of the WRMP, the IRWD Capital Program identifies short term and long-term projects needed to maintain future demands while accounting for replacement and maintenance for existing facilities. In addition to the Capital Program, the Financial Plan includes infrastructure repair and replacement funds and identifies how to pay and manage the long-term funding requirements.

### **WATER SUPPLY ASSESSMENTS/ VERIFICATIONS (WSA)**

Since 2002, when the California State Legislature passed SB 610 (Costa) and SB 221 (Kuehl), mandating official water supply assessments and verifications, IRWD has consistently made proactive planning efforts. WSAs play a critical role in closely linking land use planning with water supply reliability. Governed by SB 610, these assessments determine water supply adequacy for a 20-year projection, encompassing existing and planned future uses like agriculture and manufacturing. They are obligatory for projects proposing commercial development exceeding 250,000 square feet or retail centers exceeding 500,000 square feet. Additionally, under SB 221, before a city or county approves of residential subdivisions with 500 or more units, IRWD must provide written verification of sufficient water supply. This verification is prepared before final subdivision map adoption and ensures adequate water supply availability before construction commences<sup>8</sup>.

### **POTABLE WATER SYSTEM IMPROVEMENT DISTRICTS**

IRWD manages water system improvements, maintenance, water connection fees and other aspects of the system through Potable Water System Improvement Districts. There are approximately eight Improvement Districts related to potable water and as maintenance needs or upgrades are required per District, the costs are spread out

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<sup>8</sup> Irvine Ranch Water District, Water Supply Assessments. Accessed March 2024. Found here: <https://www.irwd.com/doing-business/water-supply-assessments>

among the users within those Districts. If a development project will result in an impact beyond one District area, the Developer will be responsible for paying fees to support the improvements in all affected District areas. The costs of new capital facilities are shared equally between connection fees paid by developers and property taxes paid by property owners. The specific fees and taxes may differ between the Districts dependent upon the existing and future capacity of the water system and the maintenance requirements in each District<sup>9</sup>.

### **2.5.1 WATER CAPITAL IMPROVEMENT PLANS**

Stakeholders involved in managing water capital improvement projects employ various strategies to ensure effective oversight and maintenance of the water system. As part of the oversight and maintenance of the City's water system, IRWD and OCWD both prepare Capital Improvement Project budgets tailored to their specific objectives. IRWD focuses on infrastructure repairs and new facilities to enhance water delivery across its service area, while OCWD emphasizes basin production and water quality improvement. See Table 9 below for a description of some ongoing and planned CIPs.

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<sup>9</sup> Irvine Ranch Water District, Rules And Regulations For Water, Sewer, Recycled Water, And Natural Treatment System Service. December 2019. Found here: [https://www.irwd.com/images/pdf/doing-business/engineering/2019/\\_\\_\\_Rules\\_and\\_Regs\\_APPROVED\\_20191216\\_FINAL.pdf](https://www.irwd.com/images/pdf/doing-business/engineering/2019/___Rules_and_Regs_APPROVED_20191216_FINAL.pdf)



**Table 9 Water System Capital Improvement Plans**

Project Name	CIP Fiscal Year	Project Summary
IRWD – Recycled Water Financial Incentives <sup>1</sup>	On-Going	IRWD grants or loan funds to pay for on-site improvements for recycled water use. Is expected to increase recycled water use by 200 AF.
IRWD - Dual Plumbed Buildings <sup>1</sup>	On-Going	Work with customers to dual plumb new and existing commercial buildings.
IRWD - Conversion Projects <sup>1</sup>	On-Going	Where possible establish new infrastructure for recycled water supplies. Is expected to increase recycled water use by 1,000 AF
IRWD - Syphon Reservoir Improvement Project <sup>1</sup>	On-Going	Increase recycled water storage capacity by 4,500 AF at the Syphon Reservoir.
IRWD - Central Orange County Water Supply and Water Quality Improvement Project <sup>1</sup>	FY 22-23	Utilize existing flood control basins for groundwater recharge and water quality improvement to increase water supply.
North/Central Orange County Irrigation Efficiency, Runoff Reduction, and Pollution Prevention Program <sup>2</sup>	FY 22-23	Rebate program promotes water-efficient landscaping and irrigation upgrades.
Making Conservation an Orange County Way of Life <sup>2</sup>	FY 22-23	Project includes changing 14 acres of grass, smart controllers, and indoor water-saving measures.
OCPW - Irvine Regional Park - Irrigation Pump House Transformer & Feeder Wiring- Replacement <sup>3</sup>	FY 21-28	The project consists of removal of the old automatic booster pump controls, development, and installation of new automatic controls.
Sources 1. Irvine Ranch Water District, 2020 Urban Water Management Plan 2. North Orange County Integrated Regional Water Management, Current Projects. Accessed March 2024. Found here: <a href="https://www.northocirwm.org/pages/projects">https://www.northocirwm.org/pages/projects</a> 3. OC Public Works and OC Community Resources Seven Year Capital Improvement Program FY 2021-22 to 2027-28. Found here: <a href="https://ocpublicworks.com/ocpw/capital-improvement-program">https://ocpublicworks.com/ocpw/capital-improvement-program</a>		

As shown above IRWD and OCWD are continually exploring water reliability CIPs to secure the Districts infrastructure reliability and future water supply.

**2.6 PROPOSED LAND USE AND CEQA THRESHOLD ANALYSIS**

The following question regarding Utilities and Service Systems are identified in the CEQA Checklist related to water.

Would the Project:

- A. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Should the answer to this prove to be a potentially significant impact, mitigation measures would be required to reduce those impacts to a less-than-significant threshold. The following impact assessments are based on the significance criteria established earlier in the section.

***Impact A: Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?***

**Impact Analysis:** Implementation of proposed land uses within the Focus Areas will have the potential for water demands to increase in the range of 1.87 MGD or 2,093 AFY over existing conditions. Implementation of projects consistent with the land use will require the construction of new water infrastructure where existing water lines are not sufficient to accommodate the increased supply demands. These determinations will be made on a project-by-project basis including site specific fire flow tests and hydraulic pressure analyses. The proposed improvements may include upsizing water lines on-site and off-site and additions of boosters in low pressure areas. In those conditions, where hydraulic or capacity impacts affect other service areas within the Improvement District, the developer is responsible for paying for the impacts through their connection fees. In addition, the 2025 UWMPs will be required to incorporate the proposed land use changes into their water demand and supply projections out to 2050.

The construction of the on-site and off-site water lines and associated improvements will primarily include trenching for the pipelines. All construction will be performed in accordance with the Construction General Permit and all associated requirements. Any work that may affect services to the existing water lines will be coordinated with the City and IRWD. When considering impacts resulting from the installation of any required water infrastructure, all impacts are of a relatively short-term duration and would cease to occur once the installation is complete. Therefore, Project impacts on water associated with construction activities would be less than significant.

### 3. SEWER

#### 3.1 SEWER SYSTEM ENVIRONMENTAL SETTING & INFRASTRUCTURE

##### IRVINE RANCH WATER DISTRICT (IRWD)

IRWD owns and operates a complex sewer collection system that stretches 963 miles to serve its current and future customers. The sewer system and drainage are defined by the physical geography of the San Diego Creek and Peters Canyon Wash/Channel. IRWD is bounded on the northeast by the Santa Ana Mountains and on the south by the San Joaquin Hills. As a result of these dominant drainage features, IRWD's sewer system flows generally from northeast to southwest. The majority of the IRWD sewer system serves the City of Irvine although there are some additional service areas that fall outside the City including portions of Lake Forest, Newport Beach, Costa Mesa, and Orange.

As of 2018<sup>10</sup> there are twenty-three sewage lift stations and twelve are considered major facilities. IRWD operates and maintains 1,100 miles of sanitary sewer mains and 12 miles of force mains spanning 181 square miles (84,000 acres) of service area in Orange County. The wastewater collection system serves the City of Irvine, Lake Forest, parts of Tustin, Newport Beach, Foothill Ranch, Costa Mesa, and unincorporated areas of Orange County. There is a small amount of wastewater generated in Newport Beach and the City that is collected by trunk sewers owned, operated, and maintained by the IRWD, then discharged into sewers owned and maintained by the Orange County Sanitation District (OCSD). The system also includes nineteen siphons which are used to convey wastewater flows under man-made and natural obstructions, and seven diversion structures to divert or split the upstream flows into two separate downstream pipelines. The collection is comprised of primarily vitrified clay pipe (VCP) and polyvinyl chloride (PVC) sewer mains that range from 4 to 60 inches in addition to 32 trunk lines that are the most critical components of the sewer collection system. The ultimate destination of wastewater collected in IRWD's system include the Michelson Water Reclamation Plant (WRP), the Los Alisos WRP or treatment plants.

***Michelson Water Reclamation Plant (WRP)*** - The Michelson Water Recycling Plant (MWRP) serves as a pivotal component of IRWDs wastewater treatment infrastructure. Established in 1967, MWRP initially catered to agricultural users, delivering about 2 million gallons per day (MGD) of tertiary-treated recycled water. Over the years, MWRP has undergone substantial expansions to keep pace with the growing demands of IRWD's service area. By 2008, its capacity had expanded to 18 mgd, supplying recycled water for various non-potable uses. Recently, in response to increasing demand, the plant's capacity was further expanded to 28 mgd, with projections indicating a need for 32.6 mgd at final build-out<sup>11</sup>.

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<sup>10</sup> Irvine Ranch Water District, Sewer System Management Plan, June 2018. Found here:

[https://www.irwd.com/images/pdf/water-sewer/irwd\\_sewer\\_system\\_management\\_plan.pdf](https://www.irwd.com/images/pdf/water-sewer/irwd_sewer_system_management_plan.pdf)

<sup>11</sup> Irvine Ranch Water District, Michelson Water Recycling Plant. Accessed March 2024. Found here:

<https://www.irwd.com/construction/michelson-water-recycling-plant>

***Los Alisos Water Reclamation Plant (WRP)*** - The Los Alisos Water Recycling Plant (LAWRP) stands as another critical component of IRWD's wastewater treatment infrastructure, serving the City of Lake Forest and surrounding areas. Operating since 1964, LAWPR has witnessed several upgrades to incorporate advancements in recycling technology, enhancing efficiency and cost-effectiveness. Recent upgrades in 2007 introduced a new disinfection facility, pumping station, sodium hypochlorite building, and pipeline enhancements, elevating the plant's recycled water production capacity to 7.5 mgd. LAWPR's treatment process involves multiple steps, including preliminary treatment, biological treatment in five ponds, coagulation, flocculation, clarification, filtration, and sodium hypochlorite disinfection. These treatment measures ensure the production of tertiary recycled water is suitable for various non-potable uses, such as irrigation for parks, golf courses, and residential yards, as well as industrial applications and manufacturing processes<sup>12</sup>.

### **ORANGE COUNTY SANITATION DISTRICT, DISTRICT NO. 5 (OCSD)**

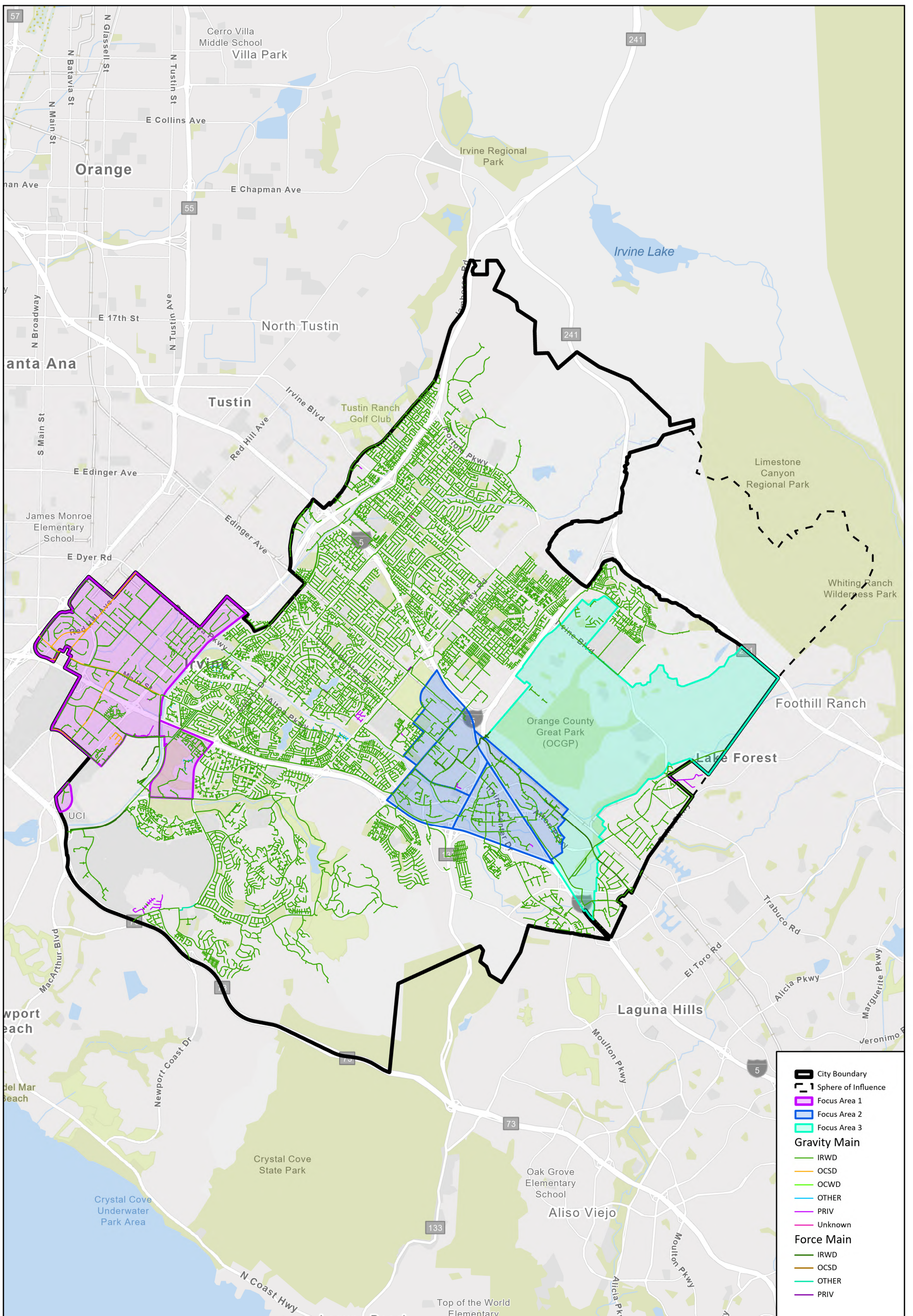
Orange County Sanitation District (OCSD) plays a crucial role in the sewage collection, treatment, and disposal processes within IRWD's service area. While IRWD collects and treats most of the sewage generated within its service area, a small percentage is handled by OCSD. OCSD operates treatment facilities that treat sewage to high-quality standards, meeting the water quality requirements for recycled water use. IRWD collaborates with OCSD to ensure backup sewage treatment capacity and disposal as needed, maintaining a connection for further treatment and eventual ocean discharge. Additionally, IRWD diverts some sewage to OCSD for treatment. This partnership with OCSD ensures efficient sewage management and supports IRWD's efforts to meet water quality standards and address wastewater treatment needs within its service area. See Figure 6 for a map of existing sewer infrastructure within the City.

***Plant No. 1*** – The Orange County Sanitation District (OCSD) operates several treatment facilities, including Plant No. 1, which treats wastewater from IRWD's Revenue Area 14 (RA 14) and other areas. Plant No. 1, 2021-2022 estimated average daily flows are 120 MGD, out of the treatment facilities treatment capacity of – MGD. OCSD's treatment facilities play a critical role in processing wastewater from various regions, ensuring compliance with regulatory standards, and protecting public health and the environment. While MWRP and LAWPR focus on producing recycled water, OCSD's facilities are integral to the broader wastewater treatment network, serving a larger geographical area and handling diverse types of wastewater flows. Together, these treatment plants and facilities contribute significantly to water management efforts in the region, promoting environmental sustainability, and resource conservation<sup>13</sup>.

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<sup>12</sup> Irvine Ranch Water District, Los Alisos Recycling Plant. Accessed March 2024. Found here: <https://www.irwd.com/construction/los-alisos-recycled-water-plant>

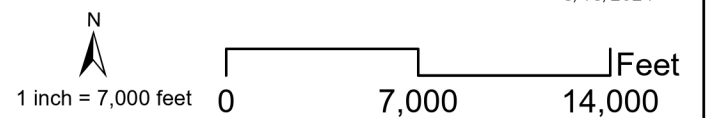
<sup>13</sup> Orange County Sanitation District Facilities Master Plan 2017. Found here: <https://www.ocsan.gov/home/showpublisheddocument/29611/637230561850600000>



**Existing Sewer System Facilities Within the City of Irvine**

**Figure 6**

3/13/2024



### 3.2 EXISTING SEWER FLOWS

#### REGIONAL

Wastewater in the City travels through IRWD’s collection system to the Michelson Water Reclamation Plant, where it is treated through the reclamation process for use in landscaping, agricultural irrigation, and other non-potable water uses. However, the Irvine Business Complex is serviced by the IRWD collection system and the majority of the IBC area (primarily western area) discharges into trunk sewers owned and maintained by the Orange County Sanitation District (OCSD). This area of the IBC falls within OCSD tributary zone No. 7. A smaller portion of the IBC (eastern area) is treated by the Michelson Water Reclamation Plant. See Table 10 for an estimate of the District’s indoor sewer generation for 2020.

**Table 10 IRWD Wastewater Collection 2020**

Wastewater Collection Agency	Volume Metered or Estimated?	Volume Collected (AF)	Receiving Agency	Treatment Plant	Located within IRWD Service Area?
IRWD <sup>1</sup>	Metered	22,575	IRWD	MWRP	Yes
IRWD	Metered	3,760	IRWD	LAWRP <sup>2</sup>	Yes
OCSD	Metered	7,568	OCSD	OCSD	Yes
IRWD	Estimated	112	SMWD	Chiquita Water Reclamation Plant	No
<b>TOTAL</b>		<b>34,015 AF</b>			
Source: Irvine Ranch Water District 2020 Urban Water Management Plan – Table 6-2 Retail: Wastewater Collected Within Service Area in 2020 1. Includes 1.09 MGD from outside service area 7 (SA-7). 2. Includes English Canyon flows (outside UWMP service area). 3. SMWD – Santa Margarita Water District					

As seen in the table above, the District estimates that in 2020 the volume of wastewater collected and treated by the IRWD, OCSD, and the Santa Margarita Water District (SMWD) was 34,015 AF. Overall, IRWDs system is very highly managed and is in relatively “young health” by sewer system standards. In addition, when specific plans or major projects are processed (over 400 residential units or equivalent mixed-use projects with similar sewer demands), IRWD requires subarea master plans that identify projected water and sewer demands, required sewer and water infrastructure, and conformance with the sewer collection system master plan. This process enables IRWD to manage the sewer and water systems in a comprehensive manner.

#### LOCAL

Under the proposed land use condition, the GPU will increase the number of residential units by 57,656 residential DUs. Based on IRWDs 2017 Sewer Collection System Master Plan (SCSMP), City specific sewer generation factors were utilized. For further details on

the existing land use evaluation for water demands within the Focus Areas see Table 11 below and Appendix B for notes on how these calculations were derived.

**Table 11 Existing Land Use Evaluation for Sewer Demands**

Planning Area	Proposed Residential (DUs)		Density/Acre		Acres of Residential Development		City of Irvine Land Use Category	Estimated Existing Sewer Flows										
								IRWD Land Use Category		IRWD Sewer Flow Factor Converted to (GPD/Acre)				Existing Sewer Flows (GPD)		Existing Sewer Flows (AFY)		
<b>Focus Area 1 – Greater Irvine Business Complex Area</b>																		
19 (Rancho San Joaquin)	2,202	DUs	50	DUs/Acre	44	Acres	IBC Multi-Use	Light Industrial	60	GPD/KSF	43,560	SF/Acre	2,614	GPD/Acre	115,103	GPD	129	AFY
36 (Irvine Business Complex)	12,798	DUs			256	Acres									668,977	GPD	749	AFY
<b>Focus Area 2 – Greater Spectrum Area</b>																		
12 (Oak Creek)	4,907	DUs	50	DUs/Acre	98	Acres	General Industrial & Medical and Science	Industrial - Light & Regional Commercial	60	GPD/KSF	43,560	SF/Acre	4,138	GPD/Acre	406,123	GPD	455	AFY
31 (Irvine Spectrum 6)	2,934	DUs			59	Acres									242,830	GPD	272	AFY
32 (Irvine Spectrum 3)	17,817	DUs			356	Acres		1,474,606	GPD	1,652	AFY							
33 (Irvine Spectrum Center)	949	DUs			19	Acres		78,543	GPD	88	AFY							
<b>Focus Area 3 – Great Park Neighborhood Transit Village</b>																		
51 (Great Park)	5,252	DUs	50	DUs/Acre	105	Acres	Trails and Transit Oriented Development	Regional Commercial	130	GPD/KSF	43,560	SF/Acre	5,663	GPD/Acre	594,821	GPD	666	AFY
<b>TOTAL</b>		<b>46,859</b>	<b>DUs</b>		<b>937</b>	<b>Acres</b>	<b>ESTIMATED EXISTING WATER DEMAND</b>								<b>3,581,002</b>	<b>GPD</b>	<b>4,011</b>	<b>AFY</b>
<i>AFY = Acre-Foot Per Year, DU = Dwelling Unit, KSF = thousand square feet, GPD = Gallons Per Day, SF = Square-Foot</i>																		



As shown in the table above it is anticipated that existing land uses within the Focus Areas generates approximately 4,011 AFY or 3,581,002 GPD in sewer flows. To understand how these sewer flows were generated please refer to the section below.

### **3.3 PROPOSED SEWER FLOWS**

#### **METHODOLOGY**

As mentioned in the water demand methodology, in the process of developing existing and proposed sewer flows it was noted that the locations of the potential residential units were not readily available to provide a comparison in sewer flows from the existing land uses to the proposed residential conversions. Without being able to specifically compare an existing condition location and sewer flows with a proposed residential location and sewer flows, a practical approach was taken. Namely, the primary focus of the City's Housing Element and the Conservative Alternative Plan is intensified residential growth with an average of up to 50 DUs / Acre. This residential density was applied within the Focus Areas to determine an estimated acreage of residential development within each area.

After determining the acres of residential development, existing sewer flows were created by identifying the predominant existing land uses and zoning designations within each Focus Area. As noted in Table 1 each focus area consists largely of one zoning designation with Focus Area 1 being IBC Multi-Use, Focus Area 2 General Industrial & Medical and Science, and Focus Area 3 Trails and Transit Oriented Development. These primary zoning designations within each Focus Area was then matched to IRWD's water use factors, expressed in (gpd/ksf). These factors were then converted to acreages to establish a sewer flow factor in gallons per day per acre (gpd/acre). This factor was then applied to each Focus Areas respective acres of residential development to evaluate existing sewer flows in the area.

While this approach simplifies the calculation process and provides a reasonable estimate of existing sewer flows, it should be noted that it may not capture the full complexity of existing land use patterns and sewer generation. Different land use categories such as commercial, industrial, or open space, may have varying sewer flow profiles when compared to residential areas. However, due to the lack of detailed data on existing land uses, this approach is necessary to proceed with the analysis and determine the impacts on sewer flows and sewer infrastructure from an existing to proposed condition. By applying the average density of dwellings units per acre to the existing land use area, it allows for a consistent basis of comparison between existing and proposed sewer flows. It provides a practical way to assess the potential impacts of proposed zoning changes on sewer flows within the City's Focus Areas of growth.

Similar to the existing land use evaluation methodology the proposed sewer flow calculations also utilizes the acreages of residential development to generate proposed flows within the Focus Areas. To generate a sewer flow factor the average density of 50 DUs/ Acre was matched to IRWDs sewer flow factor for high rise density units in Irvine. IRWD categorizes high rise density land uses as any development with a density of 40.0 DUs/Acre or more. Sewer flows associated with these high-rise density developments is 120 GPD/DU and this water factor was then converted to GPD/ Acres by applying the Housing Elements projected average density of 50 DUs/ Acre to it which results in a demand of 6,000 GPD/ Acre. Refer to Table 12 for the estimated sewer flows generated from each Focus Areas of the residential development.

**Table 12 Proposed Land Use Evaluation for Sewer Demands**

Planning Area	Proposed Residential (DUs)		Density/Acre	Acres of Residential Development		City of Irvine Land Use Category	Estimated Proposed Sewer Flows											
							IRWD Land Use Category		IRWD Sewer Flow Factor Converted to (GPD/Acre)				Proposed Sewer Flows (GPD)		Proposed Sewer Flows (AFY)			
<b>Focus Area 1 – Greater Irvine Business Complex Area</b>																		
19 (Rancho San Joaquin)	2,202	DUs	50	DUs/Acre	44	Acres	IBC Multi-Use	High Rise Density - Irvine	120	GPD/ DU	50	DU/ Acre	6,000	GPD/ Acre	264,240	GPD	296	AFY
36 (Irvine Business Complex)	12,798	DUs			256	Acres									1,535,760	GPD	1,720	AFY
<b>Focus Area 2 – Greater Spectrum Area</b>																		
12 (Oak Creek)	4,907	DUs	50	DUs/Acre	98	Acres	General Industrial & Medical and Science	High Rise Density - Irvine	120	GPD/ DU	50	DU/ Acre	6,000	GPD/ Acre	588,840	GPD	660	AFY
31 (Irvine Spectrum 6)	2,934	DUs			59	Acres									352,080	GPD	394	AFY
32 (Irvine Spectrum 3)	17,817	DUs			356	Acres									2,138,040	GPD	2,395	AFY
33 (Irvine Spectrum Center)	949	DUs			19	Acres									113,880	GPD	128	AFY
<b>Focus Area 3 – Great Park Neighborhood Transit Village</b>																		
51 (Great Park)	5,252	DUs	50	DUs/Acre	105	Acres	Trails and Transit Oriented Development	High Rise Density - Irvine	120	GPD/ DU	50	DU/ Acre	6,000	GPD/ Acre	630,240	GPD	706	AFY
<b>TOTAL</b>		<b>46,859</b>	<b>DUs</b>		<b>937</b>	<b>Acres</b>	<b>ESTIMATED PROPOSED WATER DEMAND</b>							<b>5,623,080</b>	<b>GPD</b>	<b>6,299</b>	<b>AFY</b>	
<i>AFY = Acre-Feet Per Year, DU = Dwelling Unit, KSF = thousand square feet, GPD = Gallons Per Day, SF = Square-Feet</i>																		

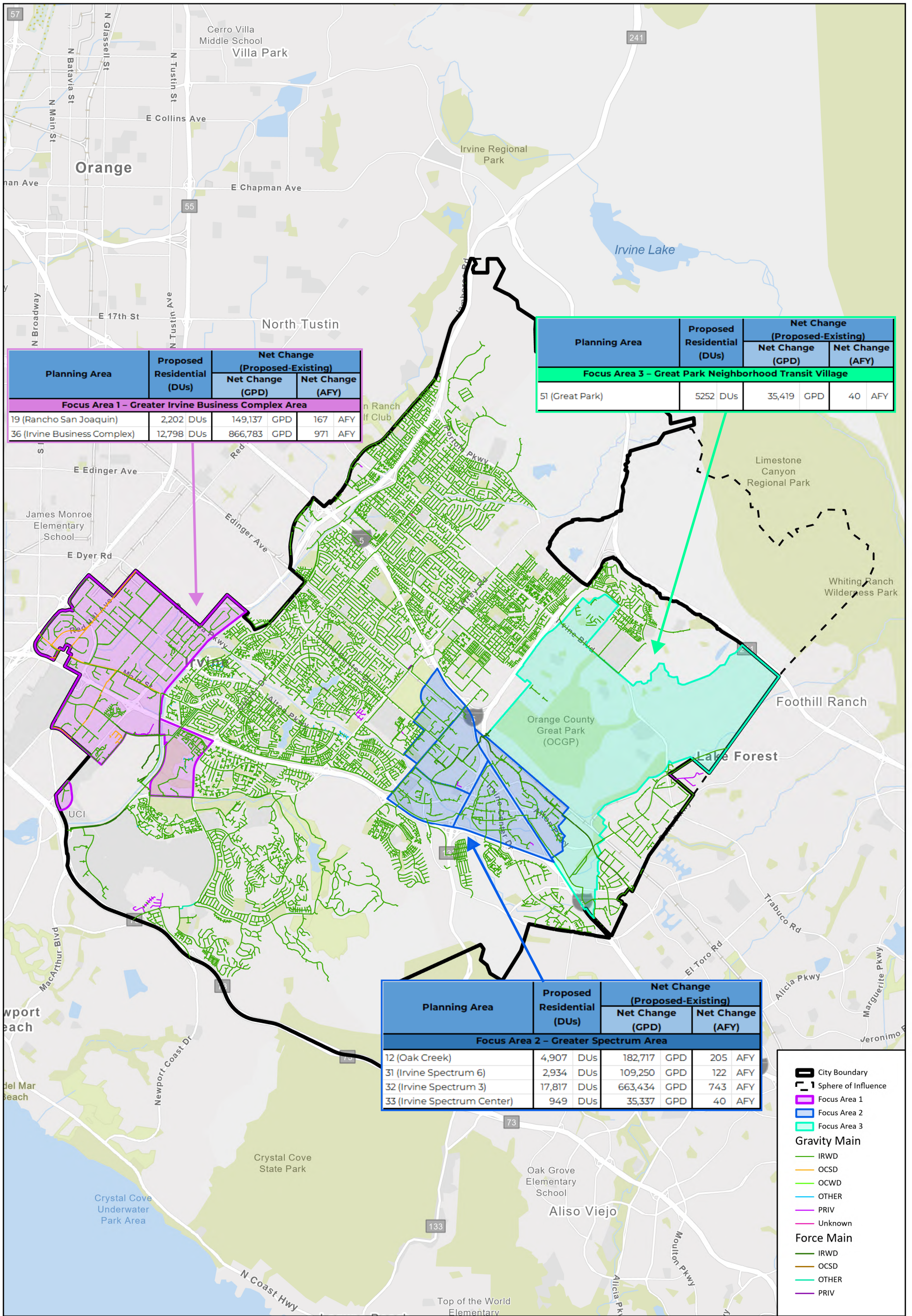
As shown above in Table 12 under the proposed Conservative Alternative land use plan/Proposed Project, the GPU will potentially increase the number of residential units by 57,656 DUs or 46,859 DUs (81% of all units) within the Focus Areas. This increase in units has the potential to generate sewer flows up to 6,299 AFY or 5,623,080 GPD within the three Focus Areas. See Appendix B for a table of the sewer flow calculations and IRWDs sewer flow factors.

The difference between the sewer flows calculated in Table 11 and Table 12 are representative of the net change in wastewater generation for the areas of residential development. See Table 13 below for more details.

**Table 13 Net Change (Existing to Proposed) Land Use Evaluation for Sewer Flows**

Planning Area	Proposed Residential (DUs)	Net Change (Proposed-Existing)	
		Net Change (GPD)	Net Change (AFY)
<b>Focus Area 1 – Greater Irvine Business Complex Area</b>			
19 (Rancho San Joaquin)	2,202 DUs	149,137 GPD	167 AFY
36 (Irvine Business Complex)	12,798 DUs	866,783 GPD	971 AFY
<b>Focus Area 2 – Greater Spectrum Area</b>			
12 (Oak Creek)	4,907 DUs	182,717 GPD	205 AFY
31 (Irvine Spectrum 6)	2,934 DUs	109,250 GPD	122 AFY
32 (Irvine Spectrum 3)	17,817 DUs	663,434 GPD	743 AFY
33 (Irvine Spectrum Center)	949 DUs	35,337 GPD	40 AFY
<b>Focus Area 3 – Great Park Neighborhood Transit Village</b>			
51 (Great Park)	5252 DUs	35,419 GPD	40 AFY
<b>TOTAL</b>	<b>46,859 DUs</b>	<b>2,042,078 GPD</b>	<b>2,287 AFY</b>

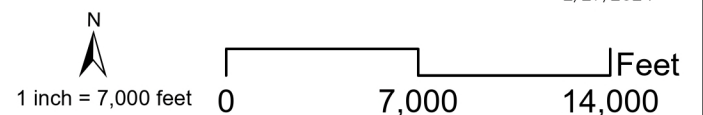
As shown above, it is projected that these land use changes within the Focus Areas will produce an estimated sewer flow increase of 2,287 AFY (2,042,078GPD). See Figure 7 for a summary of the GPUs proposed sewer flows and Appendix B to review details regarding the methodology of the existing, proposed, and net change sewer flow calculations.



**City of Irvine Proposed Sewer Flows**

**Figure 7**

2/29/2024



### **3.4 SEWER CAPACITY ASSESSMENT**

In addition to assuring that there are ample water supplies available to its service area through the SCSMP, IRWD utilize several other resources such as Sewer System Management Plan, Sub-Area Master Plans (SAMPs), Improvement Districts, and Capital Improvement Plans (CIPs) to monitor, improve, and repair local and regional sewer infrastructure.

#### **IRWD SEWER COLLECTION SYSTEM MASTER PLAN (SCSMP)**

To assure continuous high levels of customer service, a hydraulic model prepared for the Sewer Collection System Master Plan<sup>14</sup> was used to evaluate the hydraulic capacity required for the predicted 2010-2025 IRWD customer base. A capacity analysis was conducted across the piping system to determine the depth of flow as compared to the diameter of pipe (d/D).

The results highlighted 21 areas that exceeded current design criteria with 11 areas at a medium/high priority level. Recommendations were indicated to address the capacity deficiencies. It is noted that the largest, most severe and earliest occurring deficiencies should have the highest priority for action. The Capital Improvement Plan includes nine potential projects necessary to meet long term growth that is predicted to occur within the District.

#### **IRWD SEWER SYSTEM MANAGEMENT PLAN (SSMP)**

In addition, IRWD prepared an updated 2018 Sewer System Management Plan as part of the separate State Water Resources Control Board requirements. The SSMP identifies that since the development of the 2006 Sewer Collection System Master Plan, several of the high-priority deficiency projects have been implemented and several other projects have been put under a more detailed analysis. The SSMP serves as a separate guidance document that covers operations and maintenance, design and performance provisions, overflow emergency response plans, Fats Oils and Grease (FOG) Program, system evaluation and capacity assurance plan, monitoring, and measurement and program modifications. The periodic update of this document ensures the entire system is being operated and maintained and is continually being upgraded for future conditions<sup>15</sup>.

#### **SEWER SYSTEM DISTRICT IMPROVEMENT AREAS**

IRWD manages sewer system improvements, maintenance, sewer connection fees and other aspects of the system through Sewer System Improvement Districts. There are approximately eight Improvement Districts related to sewer generation and flows and as maintenance needs or upgrades are required per District, the costs are spread out among the users within those Districts. If a development project will result in an impact beyond one District area, the Developer will be responsible for paying fees to support

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<sup>14</sup> Irvine Ranch Water District, Sewer System Collections Master Plan. March 2017. Found here: [https://www.irwd.com/images/pdf/water-sewer/irwd\\_sewer\\_system\\_management\\_plan\\_appendices.pdf](https://www.irwd.com/images/pdf/water-sewer/irwd_sewer_system_management_plan_appendices.pdf)

<sup>15</sup> Irvine Ranch Water District, Sewer System Management Plan. June 2018. Found here: [https://www.irwd.com/images/pdf/water-sewer/irwd\\_sewer\\_system\\_management\\_plan.pdf](https://www.irwd.com/images/pdf/water-sewer/irwd_sewer_system_management_plan.pdf)

the improvements in all affected District areas. The costs of new capital facilities are shared equally between connection fees paid by developers and property taxes paid by property owners. The specific fees and taxes may differ between the Districts dependent upon the existing and future capacity of the sewer system and the maintenance requirements in each District<sup>16</sup>.

### **SUB-AREA MASTER PLANS (SAMPS)**

Sub-Area Master Plans (SAMPs) serve as crucial studies conducted by IRWD to plan for sewer facilities in specific development areas or proposals. Typically initiated after developers present specific development plans, SAMPs refine general plan land uses and provide insights into phasing information. These plans include descriptions and mappings of proposed sewer systems, calculations of expected wastewater generation, and analyses of the new development's impact on existing sewer systems. Utilizing available SAMP reports and models, future system facilities are developed for hydraulic modeling. The SAMP hydraulic models, constructed with detailed tract map information, ensures that sewer flow loadings are appropriately applied. IRWD ensures that future gravity mains follow design criteria in the SAMP reports.

### **ORANGE COUNTY SANITATION DISTRICT MASTER PLAN UPDATE**

OCSD, in coordination with Woodard & Curran, prepared an update to its Master Plan in December 2019. The purpose of this Update Report was to evaluate collections system capacity throughout the OCSD service area. A new model was developed to replace the previous 2006 model, based on Center for Demographic Research (CDR) population and employment data and growth estimates. The updated capacity assessment was conducted between 2016 and 2017. The 2019 Master Plan update determined a series of trunk line segments that exhibited hydraulic deficiencies or potential hydraulic deficiencies under existing (2017) and buildout (2040) conditions. Hydraulic deficiencies were assessed for both peak dry-weather flow and peak wet-weather flow scenarios. Thus, OCSDs planning division maintains a 20-year CIP comprised of potential future projects. These projects are typically scoped to rehabilitate, upgrade, or replace most of the assets within a sub-area or facility.

#### **3.4.1 SEWER CAPITAL IMPROVEMENTS PLANS**

IRWD's SSMP plans for continuous high levels of customer service to accommodate future service demands. As part of this effort, hydraulic capacity models were used to determine the existing capacity and future capacity based on long-term growth projections. Although IRWD has not experienced any capacity-related sewer overflows, several specific capital improvement projects were identified to improve capacity to meet future needs. Since the 2006 study, four of the highest priority deficiency projects have been implemented; the other projects are deferred indefinitely. These remaining projects are being monitored with flow sensors at strategic locations, and IRWD is using real data (not modeled results) to evaluate capacity as compared to future growth in

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<sup>16</sup> Irvine Ranch Water District, Rules And Regulations For Water, Sewer, Recycled Water, And Natural Treatment System Service. December 2019. Found here: [https://www.irwd.com/images/pdf/doing-business/engineering/2019/\\_\\_\\_Rules\\_and\\_Regs\\_APPROVED\\_20191216\\_FINAL.pdf](https://www.irwd.com/images/pdf/doing-business/engineering/2019/___Rules_and_Regs_APPROVED_20191216_FINAL.pdf)

these areas. See Table 14 below for a list of CIP projects that OCSD and IRWD are planning to implement throughout the City.

**Table 14 Sewer System Capital Improvement Plans**

Project Name	CIP Fiscal Year	Project Summary
OCSD – Costa Mesa and Irvine Gisler-Red Hill Interceptor and Baker Force Main Rehabilitation <sup>1</sup>	FY 23-25 In Construction	The project will make repairs to the inside of the pipeline to protect the pipe from corrosion, reducing the risk of a sewage spill and extending the pipeline's life. (Project No. 7-65).
OCSD – Costa Mesa and Irvine Sunflower and Red Hill Interceptor Repair <sup>1</sup>	FY 21-23 In Construction	Repair of the interceptor on sunflower and Red Hill to mitigate risks to wastewater collection, sewer spills, and water quality (Project No. 7-66)
IRWD – Michelson Force Main Rehabilitation Project <sup>2</sup>	FY 22-23 Design	This project will install CIP Pipe Lining on approximately 3,400 LF of force main sewer pipe.
IRWD – Newport Coast Lift Station Rehabilitation Project <sup>2</sup>	FY 22-23 Planning	This project rehabilitates CIP Pipe Lining on approximately 3,000 LF of force main sewer pipe and installs a new portion of epoxy-lined Ductile Iron Pipe that connects the rehabilitated force main to the lift station drywell
IRWD – Sewer Siphon Rehabilitation <sup>2</sup>	FY 22-23 Design	This project uses the results from the Criticality analysis and implements the identified rehabilitation.
IRWD – Sewer System Calcium Removal <sup>2</sup>	On-going	The routine sewer line cleaning and inspections identify areas for calcium removal, this project implements this maintenance task.
IRWD – Sewer Line Repairs <sup>2</sup>	On-going	This project is an on-going annual project put in place for, previously unidentified, sewer repairs.
<p>Sources</p> <ol style="list-style-type: none"> <li>1. Orange County Sanitation District. CIP Annual Report for the Fiscal Year 2022-23. Found here: <a href="https://online.fliphtml5.com/zecooq/dppx/">https://online.fliphtml5.com/zecooq/dppx/</a></li> <li>2. Irvine Ranch Water District, Sewer System Management Plan, June 2018. Found here: <a href="https://www.irwd.com/images/pdf/water-sewer/irwd_sewer_system_management_plan.pdf">https://www.irwd.com/images/pdf/water-sewer/irwd_sewer_system_management_plan.pdf</a></li> <li>3. Irvine Ranch Water District, Engineering And Operations Committee Meeting - EXHIBIT "A" IRWD Upcoming Projects Status Report. May 2022. Found here: <a href="https://www.irwd.com/images/pdf/about-us/committee-meetings/engineering-and-operations/2022/5-17-22_Eng_and_Opers_Comm_Pkg.pdf">https://www.irwd.com/images/pdf/about-us/committee-meetings/engineering-and-operations/2022/5-17-22_Eng_and_Opers_Comm_Pkg.pdf</a></li> </ol>		

As shown above, the IRWD and the OCSD are continually exploring sewer reliability CIPs in preparation for increased sewer generation and flows.

**3.5 PROPOSED CONDITION AND CEQA THRESHOLD ANALYSIS**

The following questions regarding Utilities and Service Systems are identified in the CEQA Checklist related to sewer.

**Would the Project:**

- A. Require or result in the relocation or construction of new or enhanced water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?
- B. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Should the answers to these environmental factors prove to be a potentially significant impact, mitigation measures would be required to reduce those impacts to a less-than-significant threshold.

***Impact A: Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?***

**Impact Analysis:** Implementation of proposed land uses within the City's GPU will likely require construction of upgrades to new sewer infrastructure where existing sewer lines are not sufficient to accommodate the increased flows. The locations of these sewer improvements will be based on the project-specific locations. These determinations will be made on a project-by-project basis including site specific sewer flow monitoring and hydraulic sewer analysis. All project applicants are required to submit detailed information to IRWD regarding product type, size, number of units or square feet, projected demands (indoor and outdoor), and other project details so impacts on the existing sewer system can be managed properly. In those conditions, where hydraulic or capacity impacts affect other service areas or users within the Improvement District, the developer is responsible for paying for the impacts through their connection fees. When capital projects are identified for regional sewer improvements within the Improvement District, the costs are shared 50/50 between developer connection fees and existing users through property tax assessments.

The construction of the on-site and off-site sewer lines and associated improvements will primarily include trenching for the pipelines. All construction will be performed in accordance with the Construction General Permit and all associated requirements. Any work that may affect services to the existing sewer lines will be coordinated with the City and IRWD. IRWD also has Sewer Improvement Districts which allows the District to assess improvements per Improvement Area and collect fees accordingly. This process ensures that the fees collected are consistent with the improvements needed within the respective District being improved.

Furthermore, a Construction Management Plan or equivalent, which would ensure safe pedestrian access as well as emergency vehicle access and safe vehicle travel in general, will be implemented to reduce any temporary



pedestrian and traffic impacts occurring as a result of construction activities. Moreover, when considering impacts resulting from the installation of any required wastewater infrastructure, all impacts are of a relatively short-term duration and would cease to occur once the installation is complete. Therefore, Project impacts on wastewater associated with construction activities would be less than significant.

***Impact B: Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?***

**Impact Analysis:** The proposed development within the CPUs Focus Areas is expected to result in an increase in sewer flows by approximately 2.04 MGD. However, upon evaluation, this increase falls well within the remaining treatment capacity of the Michelson Water Recycling Plant (MWRP) at Irvine Ranch Water District (IRWD), which currently stands at 28 MGD. The capacity expansion of MWRP through projects like the Phase 2 Expansion in 2014, which added 7 MGD, has ensured that the plant can accommodate additional demand. The MWRP currently operates at an average of 25 MGD, recycling about 9 billion gallons of water annually. When combined with water from the Los Alisos Recycling Plant, the recycled-water operation collectively provides 28% of the water supplied to customers. Additionally, OCSD's Plant No. 1, with a treatment capacity of 320 MGD, remains capable of accommodating the projected increase in sewer flows<sup>17</sup>.

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<sup>17</sup> Orange County Sanitation District, Headworks Rehabilitation At Plant No. 1 (Project No. P1-105) Draft Initial Study/Mitigated Negative Declaration Prepared By Esa In 2019 Fuscoe Engineering, Inc.. Found here: [https://files.ceganet.opr.ca.gov/250889-2/attachment/ifoQfEz8SEQuvFlxmB8M8KQd\\_VUicrvHjdsSc9irHQ5xNsoEXmNDAmTREeHx5tuUufqYMTgLOAt-CO50](https://files.ceganet.opr.ca.gov/250889-2/attachment/ifoQfEz8SEQuvFlxmB8M8KQd_VUicrvHjdsSc9irHQ5xNsoEXmNDAmTREeHx5tuUufqYMTgLOAt-CO50)

## **4. STORM DRAINAGE AND WATER QUALITY**

### **4.1 STORM DRAINAGE ENVIRONMENTAL SETTING & INFRASTRUCTURE**

#### **4.1.1 EXISTING DRAINAGE FACILITIES**

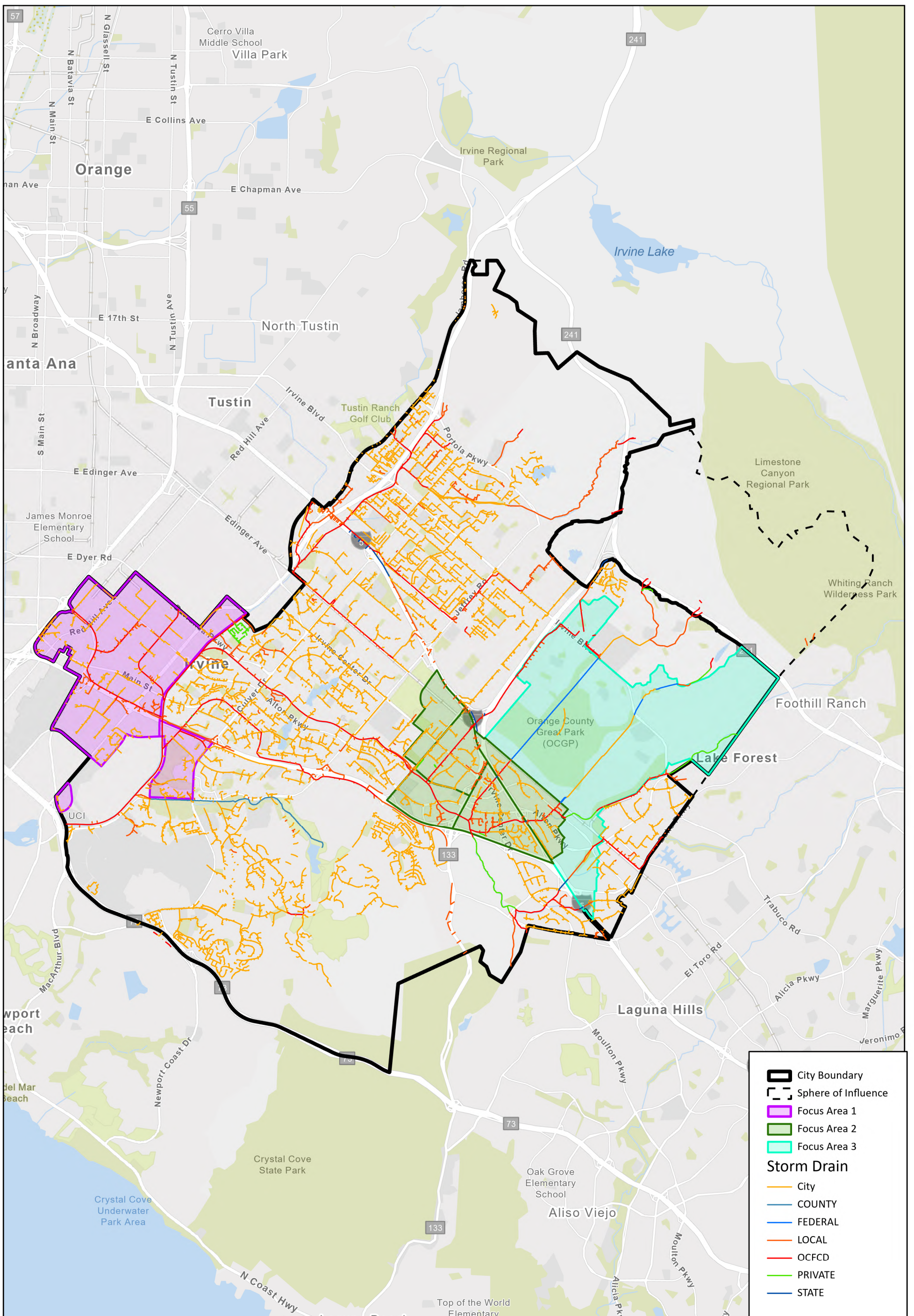
The local storm drain system within the City of Irvine is owned by the City of Irvine and maintained by the City's Public Works Department. The regional flood control system is owned and maintained by the Orange County Public Works Department (OCPW). Lines typically range in size from 18" - 60" with the local drainage system consisting of the smaller diameter pipes and the larger flood control facilities consisting of trapezoidal channels or riverine systems. Drainage facilities are typically either RCP pipe or box culverts to convey stormwater. Local storm drain facilities are typically designed to accommodate 10- to 25-year flow requirements and the regional County facilities are designed to accommodate from 10-year to up to 100-year storm events. The City conveys stormwater to the Orange County Flood Control District (OCFCD) regional conveyance facilities and has a detailed GIS based inventory of all drainage facilities including storm drainpipes, catch basins, BMPs/filters within catch basins, pump stations, settling basins and outfalls for both public and private properties. See Figure 8 below that shows the existing storm drain system throughout the City and Focus Areas. The City has an ongoing monitoring and maintenance procedure to ensure the overall system functions effectively. To prevent against significant flooding during storm events OCFCD and the City monitors and maintains stormwater pumping stations to ensure they are functioning efficiently.

In addition, the City currently requires individual drainage analyses for new developments and redevelopments to ensure conformity with the entire Citywide drainage system.<sup>18</sup> New developments and significant redevelopments must analyze the 10- to 25-year storm event for onsite areas and determine if there are any impacts to the public storm drain system. The City uses a hybrid approach of ensuring storm drain capacity is maintained and promotes the use of existing features (i.e., parks) and natural treatment systems (IRWD) to serve as detention systems, water quality treatment and infiltration wherever feasible.

See Figure 8 below for the existing storm drain system throughout the City.

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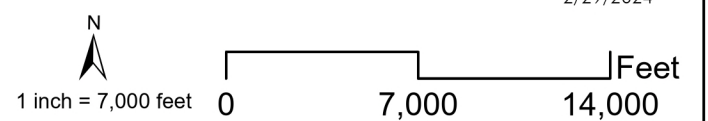
<sup>18</sup> City of Irvine, CA, July 28, 2023. Municipal Code (Ord. No. 10-06, § 1, 7-13-10). Found here: [https://library.municode.com/ca/irvine/codes/code\\_of\\_ordinances?nodetid=TIT6PUWO\\_DIV8PO\\_CH3STURRU\\_S6-8-303COSTURRU](https://library.municode.com/ca/irvine/codes/code_of_ordinances?nodetid=TIT6PUWO_DIV8PO_CH3STURRU_S6-8-303COSTURRU)



**City of Irvine Existing Storm Drain Facilities**

**Figure 8**

2/29/2024



#### **4.1.2 WATERSHED SETTING**

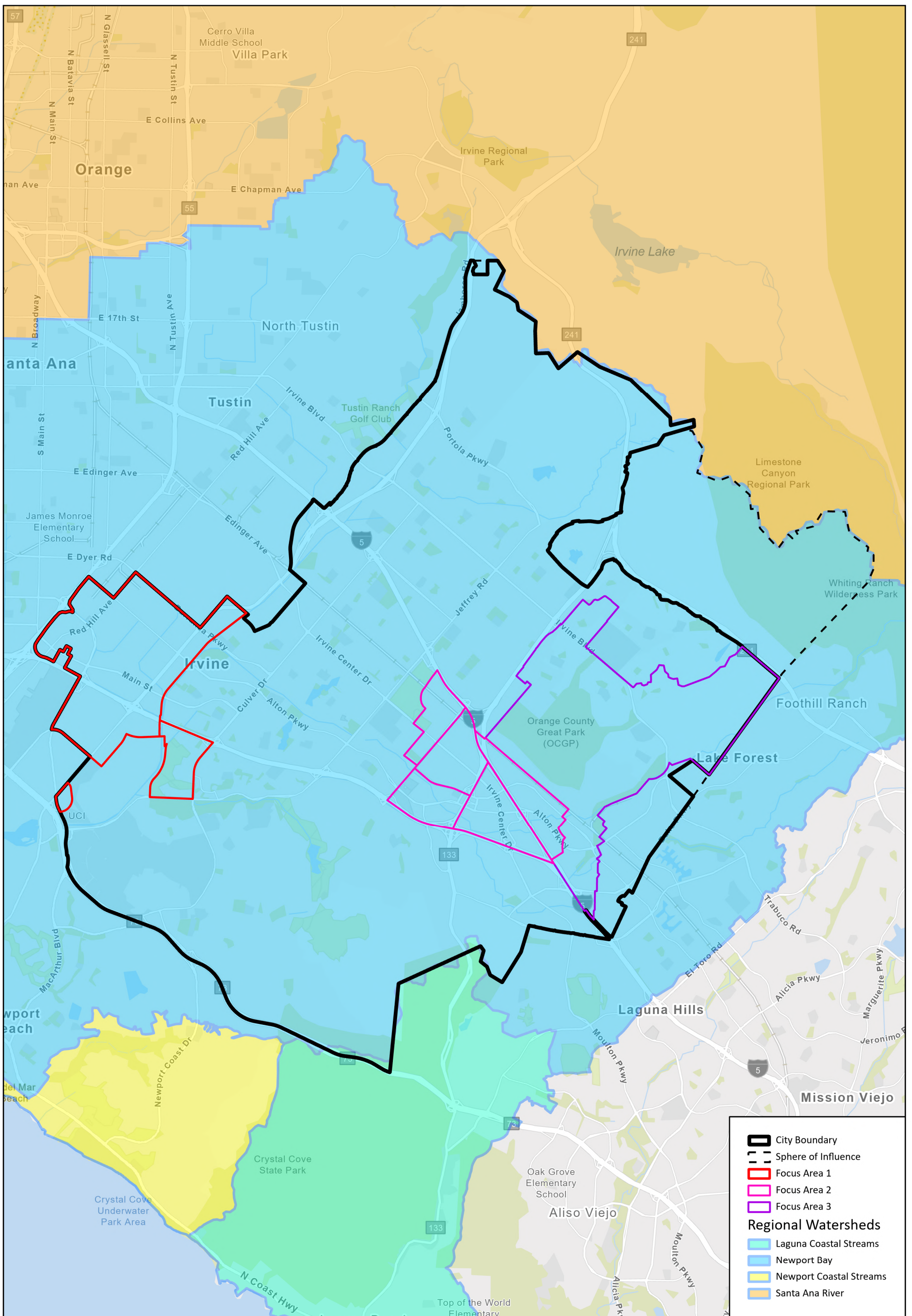
The City is located primarily within the 154-square mile Newport Bay Watershed. Newport Bay is located in the central portion of Orange County “OC”, California and is defined by the foothills of the Santa Ana Mountains to the east (Loma Ridge), and the San Joaquin Hills to the west and southwest. The Newport Bay Watershed is a part of the larger Orange County Watershed Management Areas, which consist of a split into a South, North, and Central Watershed Management Areas (WMA). The total area of the Newport Bay Watershed is approximately 154 square miles (98,500 acres) of the Central Orange County (COC) WMA. The watershed is comprised of channels that ultimately deliver stormwater to Newport Bay.

#### **WATERSHEDS**

As discussed previously, the City of Irvine is located in the Newport Bay Watershed. The primary tributaries are identified below.

- Newport Bay Watershed
  - Santa Ana Delhi Channel
  - Bonita Creek
  - Borrego Creek
  - Peters Canyon Wash
  - San Diego Creek Reach 1
  - Upper Newport Bay (Ecological Reserve)

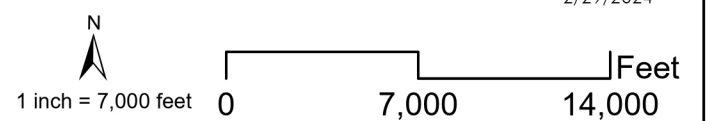
See Figure 9 below for a map of the watersheds within and surrounding the City.



**City of Irvine Watersheds**

**Figure 9**

2/29/2024



## 4.2 EXISTING FLOOD PLAIN MAPPING

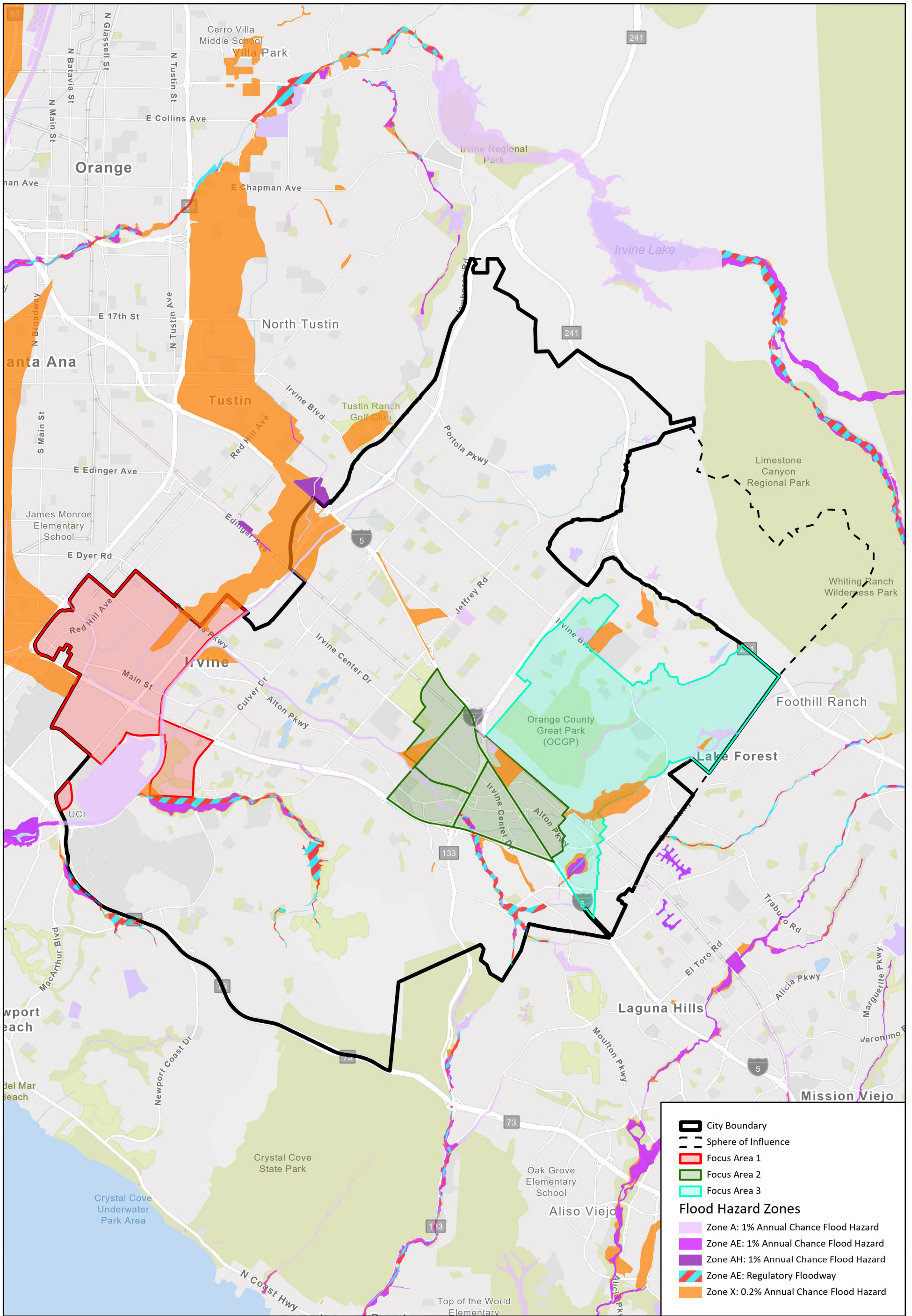
The National Flood Insurance Act (1968) established the National Flood Insurance Program, which is based on the minimal requirements for flood plain management and is designed to minimize flood damage within Special Flood Hazard Areas. The Federal Emergency Management Agency (FEMA) is the agency that administrates the National Flood Insurance Program. Special Flood Hazard Areas (SFHA) are defined as areas that have a 1-percent chance of flooding within a given year, also referred to as the 100-year flood. Flood Insurance Rate Maps (FIRMs) were developed to identify areas of flood hazards within a community. According to the Flood Zone determination, the City has several flood designations listed as Zone A, Zone AE, Zone AH, and Zone X (shaded). These zones are described below.

See Table 15 for description of the City’s flood zone designations.

**Table 15 FEMA Flood Zone Designations**

Zone Designation	Zone	Zone Description
Special Flood Hazard Area – With Base Flow Elevation or Depth	Zone A	Areas with a 1% annual chance of flooding and -a 26% chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas; no depths or base flood elevations are shown within these zones.
	Zone AE	Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30 year mortgage. Base flood elevations (BFE) are provided.
	Zone AH	Areas with a base floodplain, usually in the form of a pond, with an average depth ranging from 1 to 3 ft. where elevations (BFE) and flood hazard factors are determined.
Other Areas of Flood Hazard	Zone X	<u>Shaded</u> : Area of 500-year flood; area subject to the 100-year flood with average depths of less than 1 foot or with contributing drainage area less than one square mile; and areas protected by levees from the base flood. <u>Unshaded</u> : Area determined to be outside the 500-year floodplain
Source: FEMA, Glossary. Found here: <a href="https://www.fema.gov/about/glossary">https://www.fema.gov/about/glossary</a> .		

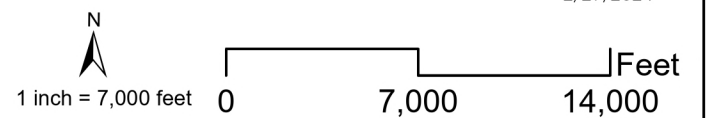
Any development within special flood hazard areas must follow FEMA and the City’s floodplain safety requirements, including flood analysis, proper setbacks, and sufficient pad elevations. The City also has preparation measures to protect residents and limit damage and infrastructure loss. See Figure 10 for a map of the FEMA flood zones within the Irvine GPU.



**City of Irvine Flood Zones**

**Figure 10**

2/29/2024



#### **4.2.1 REGIONAL FLOOD CONTROL MASTER PLAN**

Unlike many other cities in Orange County, Irvine was designed as a master planned community. The City is divided into planning areas. As each planning area was developed, they were required to implement the necessary storm drain system for the full buildout of the planning area. This was repeated for all planning areas, resulting in a well-functioning system.

The 1999 Regional Flood Control Master Plan for San Diego Creek serves as the comprehensive engineering and flood protection document for the City's regional flood control facilities. The OCFCD and Irvine use the master plan to regulate peak flow discharges and ensure that runoff is managed in accordance with the design parameters in the master plan. When the City processes major land use changes within the watershed, detailed studies and addendums to the master plan are required. The master plan is used to determine where detention and flow attenuation is required to match up with the ultimate conditions within the master plan.

Irvine contains both natural areas where stormwater can be recharged into the ground and urbanized areas that are dominated by impervious (nonporous) surfaces and other hardscapes. However, most waterways in the City are channelized for flood control purposes. Because growth in Irvine has been master planned, stormwater infrastructure has been improved incrementally as the City has grown, keeping pace as development has occurred. Deficiencies in the system are limited. Periodically, the OCPW scours the San Diego Creek channels to reduce sedimentation and ensure the proper functioning of channels.



## **CITY OF IRVINE STORMWATER MANAGEMENT**

The City of Irvine Public Works' Maintenance Division is responsible for the maintenance and upkeep of the City's public drainage facilities. The Maintenance Division's responsibilities include the annual inspection and cleaning of all City storm drains and catch basins, erosion control of slopes along City open channels, and other City drainage facilities, cleaning of debris and clearance of drainage systems after storm events, and the prevention of standing water issues/concerns in City right-of-way areas.

### **STORMWATER DESIGN FOR NEW DEVELOPMENT**

The City of Irvine requires new development to submit to the City for review and approval, a hydrology & hydraulics report that presents the analyses of the grading and stormwater design, along with conclusions that demonstrate that any increases in stormwater discharges will be mitigated with onsite detention systems. What is typically required is that the stormwater discharges associated with the new development do not exceed those of the existing or master-planned condition. Since much of the City is built-out with commercial, industrial, or residential development, many of the redevelopment projects may not require detention. However, sites that are currently undeveloped may require detention, to mitigate for additional discharges associated with the new development or to meet local hydromodification requirements associated with the stormwater Municipal Separate Storm Sewer System (MS4) permit.

#### **4.3 EXISTING WATER QUALITY REGULATIONS**

The City of Irvine is mandated by a federal National Pollutant Discharge Elimination System (NPDES) permit to implement Storm Water Runoff Management Programs. Unlike the sanitary sewer system, any discharge to the municipal storm drain system does not get treated and will ultimately end up in the ocean. The Storm Water Runoff Management Programs are therefore designed to protect the water quality and beneficial uses of the receiving water body, by requiring onsite water quality treatment of the stormwater prior to discharging offsite into the municipal storm drain system.

A project Water Quality Management Plan (WQMP) must be submitted for new development and significant redevelopment projects in the City of Irvine.

Project WQMPs describe how property owners/managers will comply with the post construction water quality requirements described in the City's National Pollutant Discharge Elimination System (NPDES) permit (issued by the Santa Ana Regional Water Quality Control Board), and the City's Local Implementation Plan (LIP). This project WQMP template has been designed to facilitate the expeditious review and approval of project WQMPs by the City's Building and Safety Division, and to reduce the number of revisions and re-submittals of project WQMPs before approval is granted. Project plans submitted for plan check must be consistent with the approved project WQMP, and the project WQMP must be approved prior to the issuance of building or grading permits.

The Water Quality Ordinance (No. 10-06) gives the City of Irvine adequate legal authority as may be necessary to carry out the requirements of the NPDES Permit and accomplish the requirements of the Clean Water Act.

In addition to the programs and requirements discussed above there are several state and regional regulations that focus on protecting storm water quality throughout the City and County region. They are described as follows.

### **COUNTY OF ORANGE MS4 PERMIT, DRAINAGE AREA MANAGEMENT PLAN (DAMP) & LOCAL IMPLEMENTATION PLANS (LIP)**

In May 2009, the Santa Ana RWQCB re-issued the North Orange County MS4 Storm Water Permit as WDR Order R8-2009-0030 (NPDES Permit No. CAS618030) to the County of Orange, the incorporated cities of Orange County, and the Orange County Flood Control District within the Santa Ana Region. Pursuant to this “Fourth Term” MS4 Permit, the Co-permittees were required to update and implement a Drainage Area Management Plan (DAMP) for its jurisdiction, as well as Local Implementation Plans (LIPs), which describe the Co-permittees’ urban runoff management programs for their local jurisdictions.

Under the City’s LIP, land development policies pertaining to hydromodification, and low impact development (LID) are regulated for new developments and significant redevelopment projects. The term “hydromodification” refers to the changes in runoff characteristics from a watershed caused by changes in land use condition. More specifically, hydromodification refers to “the change in the natural watershed hydrologic processes and runoff characteristics (i.e., interception, infiltration, overland flow, interflow and groundwater flow) caused by urbanization or other land use changes that result in increased stream flows and sediment transport.” The use of LID Best Management Practices (BMPs) in project planning and design is to preserve a site’s predevelopment hydrology by minimizing the loss of natural hydrologic processes such as infiltration, evapotranspiration, and runoff detention. LID BMPs try to offset these losses by introducing structural and non-structural design components that restore these water quality functions into the project’s land plan. These land development requirements are detailed in the County-wide Model Water Quality Management Plan (WQMP) and Technical Guidance Document (TGD), last updated in 2013, which Cities have incorporated into their discretionary approval processes for new development and redevelopment projects.

The LID hierarchy requires new developments and re-developments to implement BMPs under the LID hierarchy as described in the TGD. The LID hierarchy requires new projects to first attempt to infiltrate if feasible, then harvest and reuse, then biofilter stormwater runoff from their project site depending on site constraints. New projects and redevelopments within the City will follow the set hierarchy of BMP selection, and more runoff throughout the City will be effectively treated as development occurs.

### **TOTAL MAXIMUM DAILY LOADS (TMDLS)**

Once a water body has been listed as impaired on the 303(d) list, a TMDL for the constituent of concern (pollutant) must be developed for that water body. A TMDL is an estimate of the daily load of pollutants that a water body may receive from point sources, non-point sources, and natural background conditions (including an appropriate margin of safety), without exceeding its water quality standard. Those facilities and activities that are discharging into the water body, collectively, must not exceed the TMDL. In general terms, Municipal Separate Storm Sewer System (MS4) and other dischargers within each watershed are collectively responsible for meeting the required reductions and other TMDL requirements by the assigned deadline.

The Newport Bay Watershed was historically home to agricultural uses, but now contains the cities of Irvine, Tustin, Santa Ana, Costa Mesa, Lake Forest, Laguna Hills, Orange, and Newport Beach, and unincorporated areas of Orange County. Because of its historical agricultural uses and present urbanized uses, including industry and commerce, many of the waterways are impaired with various pollutants. TMDL allocations have been developed for the Newport Bay Watershed for nutrients, sediment, and toxics; there is also a fecal coliform TMDL for Newport Bay. Additional TMDL allocations are pending. Table 16 provides a list of impaired waterways in Irvine, type of contaminants causing the impairment, and estimated date for addressing the TMDL requirements<sup>19</sup>.

Presented below in Table 16 are the 303(d) list and TMDLs for the applicable regional channels and water bodies that receive flows from the Irvine GPU area.

**Table 16 List of 303(d) Impairments and TMDLs**

<b>Water Body / Channel</b>	<b>List of 303(d) Impairments</b>	<b>TMDL</b>
Borrego Creek Reach 2	Ammonia, Indicator Bacteria	N/A
Peter Canyon Channel	Benthic Community Effects, DDT, Indicator Bacteria, Malathion, pH, Selenium, Toxaphene, Toxicity	DDT, Toxaphene
San Diego Creek Reach 1	Benthic Community Effects, DDT, Indicator Bacteria, Malathion, Nutrients, Sedimentation/Siltation, Selenium, Toxaphene, Toxicity	Newport Bay/San Diego Creek Nutrient TMDL, Newport Bay Toxics TMDL,
San Diego Creek Reach 2	Sedimentation/Siltation, Nutrients, Indicator Bacteria, Benthic Community Effects, Toxicity	N/A
Source 1. Orange County Public Works, OC Environmental Resources - Total Maximum Daily Loads. Accessed October 2023. Found here: <a href="https://ocerws.ocpublicworks.com/service-areas/oc-environmental-resources/oc-watersheds/regional-stormwater-program/north-oc-12">https://ocerws.ocpublicworks.com/service-areas/oc-environmental-resources/oc-watersheds/regional-stormwater-program/north-oc-12</a>		

**IRWD NATURAL TREATMENT SYSTEMS**

In 1997, IRWD implemented a treatment program, by creating wetlands that use organisms, plants and soil to naturally remove bacteria, nitrogen and phosphorus from water. The wetlands at the San Joaquin Marsh and Wildlife Sanctuary in Irvine use this natural treatment process to handle urban runoff from San Diego Creek. Plants and

<sup>19</sup> Orange County Public Works, Drainage Area Management Plan, Appendix D - Newport Bay Watershed Chapter. February 2021. Found here: <https://ocerws.ocpublicworks.com/sites/ocpwocerws/files/2021-02/Newport%20Bay%20WAP.pdf>

soils in the manmade ponds take about seven to 10 days to remove nitrates and other pollutants and deliver cleaner water back into the creek before it makes its way through Upper Newport Bay to the ocean. The success of the program led to the expansion of the natural treatment system (NTS) created throughout the San Diego Creek watershed to enhance water to treat urban runoff prior to reaching the San Joaquin Marsh. There are approximately 40 smaller NTS systems currently built and operating with additional sites under consideration. Overall, the NTS program has resulted in a significant improvement in water quality for dry weather flows and smaller storm events resulting in the protection of existing receiving waters.

#### **4.3.1 EXISTING GROUNDWATER CONDITIONS**

The GPU area lies within the Orange County Groundwater Basin (OC Basin or Basin 8-1).<sup>20</sup> The OC Basin is the source of approximately 60 to 70 percent of the water supply for 2.3 million people. OCWD is responsible for managing the OC Basin. To maintain groundwater quality, OCWD conducts an extensive monitoring program that serves to manage the OC Basin's groundwater production, control groundwater contamination, and comply with all required laws and regulations. A network of nearly 700 wells provides OCWD a source for samples, which are tested for a variety of purposes. OCWD collects 600 to 1,700 samples each month to monitor Basin water quality. These samples are collected and tested according to approved federal and state procedures as well as industry-recognized quality assurance and control protocols.

The OC Basin also has prescribed groundwater beneficial uses and water quality objectives, which are described in greater detail in Appendix C of the Basin Plan.

#### **GROUNDWATER QUALITY**

Portions of the groundwater table beneath Irvine have high salts levels because of the natural geology and the history of agricultural use. The Irvine Desalter Project (IDP) includes five wells located near the I-5 freeway in Irvine. Salty water is pumped from these wells and sent to the IDP treatment facility. The treatment process uses reverse osmosis, decarbonation, and disinfection to make the water suitable for drinking purposes. The purified water provides 5,100 acre-feet or 1.6 billion gallons of drinking water, enough for 50,000 people per year.

The El Toro Groundwater Remediation program is designed to address trichloroethylene (TCE) in the groundwater basin beneath the former El Toro MCAS. TCE is a volatile organic compound that was used as a solvent for aircraft cleaning prior to the development of stricter environmental regulations. The IRWD, OCWD, and federal authorities are pumping water from a three-square-mile plume, treating the water, and returning the cleaned water to irrigate landscaping. This program provides 1.3 billion gallons of clean water annually.

Nitrate is one of the most common and widespread contaminants in groundwater supplies. Elevated levels of nitrate originate from fertilizer use, animal feedlots,

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<sup>20</sup> Map of the Orange County Groundwater Basin. Found here:  
<https://www.ocwd.com/media/3656/threelayerbasinmodelextent.pdf>

wastewater disposal systems, and other sources. Plants and bacteria break down nitrate, but excess amounts can leach into groundwater. Certain portions of Irvine have nitrate levels exceeding MCLs established in state law. IRWD Wells 21 and 22 contain nitrate at levels exceeding the primary MCL of 10 mg/L and total dissolved solids concentrations above the secondary MCL. IRWD has therefore constructed a reverse osmosis treatment facility to reduce concentrations in the water to meet state water quality standards before conveying water to the potable supply distribution system.

Selenium is a naturally occurring micronutrient found in soils and groundwater in the Newport Bay Watershed. Selenium is essential for reproductive health and immune system function in humans, fish, and wildlife. However, selenium bio-accumulates in the food chain and can cause public health concerns. Prior to urban development, the Irvine Subbasin contained an area known as the Swamp of the Frogs. Runoff from local foothills over thousands of years accumulated selenium-rich deposits in the swamp. To make this region suitable for farming, drains and channels were constructed. This mobilized selenium from sediments into the shallow groundwater. Thus, the Nitrogen and Selenium Management Program was formed to develop and implement a work plan to address selenium and nitrate in the watershed to comply with the requirements of NPDES Permits issued by the Santa Ana RWQCB.

### **Sustainable Groundwater Management Act**

The California Sustainable Groundwater Management Act ("SGMA"), a three-bill package signed into law in 2014, creates a framework for the management of groundwater sources throughout the state. Under SGMA, local agencies form Groundwater Sustainability Agencies ("GSAs") and create Groundwater Sustainability Plans (GSPs). If a GSA is not formed, special act districts, such as OCWD, can submit "Alternative Plans" to GSPs. Timelines and requirements are based upon basin priority. Under SGMA, the Orange County Groundwater Basin (Basin 8-1) is considered a medium-priority basin.

In January 2017 OCWD, the City of La Habra, and Irvine Ranch Water District submitted the Basin 8-1 Alternative Plan. The Alternative Plan incorporates the requirements of GSPs and is considered "functionally equivalent" to a GSP. The Alternative Plan analyzes existing basin conditions and demonstrates that the Basin has been operated within its sustainable yield for more than 10 years without degrading water quality, reducing storage, or lowering groundwater levels. The Alternative Plan will be updated and resubmitted every 5 years as part of SGMA requirements.

Under the Alternative Plan, four management areas have been created for the Orange County Groundwater Basin. Each of these management areas has slightly different management goals and strategies based on the government bodies that serve them. The management areas are as follows:

- ***La Habra-Brea Management Area***
  - Includes the northern portion of the Basin located outside of the OCWD service area.
- ***OCWD Management Area***
  - Includes OCWD's service area, covering approximately 89% of the Basin.
- ***South East Management Area***

- Includes the southern and southeastern portions of the Basin that are outside of OCWD's service area.
- **Santa Ana Canyon Management Area**
  - Includes the eastern portion of the Basin outside of OCWD's service area.

As the OC Basin is a medium priority basin, details regarding sustainable groundwater basin management will be required for future projects within the Irvine GPU area that trigger Senate Bill 610 and the development of a Water Supply Assessment (WSA). Projects that require the development of a WSA include residential developments over 500 dwelling units, shopping centers having 500,000 sf or more of floor space, a hotel with more than 500 rooms, a commercial office building with 250,000 sf of floor space, an industrial land use over 40 acres of land or 650,000 sf of floor area, or a mixed-use project that includes any combination of the limits noted above.

## **DRINKING WATER QUALITY**

The Irvine Ranch Water District strives to provide residents and business consumers with safe drinking water supplies. IRWD, OCWD, and the Metropolitan Water District of Southern California (MWD) conduct extensive testing for regulated and unregulated chemicals in their water supplies. OCWD manages the quality of the groundwater basin, MWD supplies imported treated surface water, and IRWD operates a surface water treatment plant and several ground water treatment plants.

Communities are required to adhere to stringent state regulations regarding primary and secondary drinking water standards. Primary standards are legally enforceable standards that are needed to protect public health. Secondary standards affect the color, appearance, and taste of drinking water, but are not health-related standards. Adherence to standards is measured in terms of maximum contaminant levels allowed in drinking water. Progress toward public health goals, as described below, is also required to be reported.

The EPA, the Office of Environmental Health Hazard Assessment, and the SWRCB Division of Drinking Water have set voluntary drinking water quality goals for some contaminants. The most common measure is public health goals (PHGs). Water quality goals are often set at such low levels that they are not achievable in practice and are not directly measurable. Nevertheless, these goals provide useful guideposts and direction for water management practices. IRWD strives to meet PHGs although state and federal law do not require adherence. IRWD produces an annual consumer confidence report that tracks the quality of Irvine's drinking water. IRWD continues to meet and/or exceed all primary and secondary drinking water standards that are required by state and federal law<sup>21</sup>.

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<sup>21</sup> Irvine Ranch Water District, Water Quality Information. Accessed October 2023. Found here: <http://www.irwd.com/services/water-quality-report>

**4.3.2 CAPITAL IMPROVEMENT PLANS**

**City of Irvine, Public Drainage Program** – There are three water quality improvements project currently in the City of Irvine, all occurring at the Great Park or PA 51. These CIPs are described in Table 18 and consists of improvements to the Great Parks water quality infrastructure, landscape enhancements, and utility modifications. All of these projects ensure water quality systems, irrigation components, and pond utility connections function at maximum efficiency. Table 18 identifies applicable City CIP projects.

**Table 17 Drainage System Capital Improvement Plans – City of Irvine**

Project Name	CIP Year	Project Description
Great Park Site Utility Infrastructure (CIP: 361612)	FY 23-24 Construction Phase <sup>1</sup>	Modification of the utility and water quality infrastructure to enable the addition, relocation and reconnection of various utility lines and service to new backbone infrastructure.
Great Park Western Sector Water Quality Basins (CIP: 361921)	FY 23-24 Design Phase <sup>1</sup>	The project consists of designing the plan for rehabilitation and modification of the storm water recirculation system for the Western Sector. This plan will detail the re-engineering and installation of effective water treatment and filtration systems. Additional water fountain features have been added to the scope of work.
Great Park Water Quality Enhancements (CIP: 371804)	FY 23-24 DesignPhase <sup>1</sup>	Design and installation of Western Sector water quality landscape enhancements and utility modifications
Sources <sup>1</sup> City of Irvine, Capital Improvement Program (CIP) Map. Accessed. March 2024 Found here: <a href="https://www.cityofirvine.org/public-works-department/interactive-capital-improvement-projects-map">https://www.cityofirvine.org/public-works-department/interactive-capital-improvement-projects-map</a>		

**OC Public Works**– OC Public Works Infrastructure Programs provides engineering services for regional flood control programs, such as OCFCD, throughout Orange County. OC Public Works manages the design of the County’s horizontal infrastructure, roadways, bridges, bikeways, channels, storm drains, dams, pump stations and other drainage related facilities. OC Public Works maintains a 7-year CIP list with several proposed projects within the City of Irvine which is in the design and construction phase for 2022-2023 year. See Table 18 for a summary of CIP projects lead by OC Public Works within the City and Focus Areas.<sup>22</sup>

**Table 18 Drainage System Capital Improvement Plans – OC Public Works**

Project Name	CIP Year	Project Description
NC IRWM Projects: William Mason Regional Park & UC Irvine WIPS Project	5-10 years Planning <sup>1</sup>	The project consists of diversion of runoff from F15P11 to natural treatment systems and then to the existing lake, diversion of Sand Canyon Channel, a storm drain line, a

<sup>22</sup> OCFCD 7-year Capital Improvement Program 2023-24 to 2029-30. Projects found at the link below: <https://ocpw.maps.arcgis.com/apps/Shortlist/index.html?appid=1e3a74d5dcb744fb9bab39f427fb0079>

		tank at the UCI Cheerleader Field, and a pump for water to the UCI Marsh.
NC IRWM Projects: NCWMA OCWD South OC Water Storage in OCWD	FY 25-26 In Design Water Supply <sup>1</sup>	Store additional water in the OCWD groundwater basin for use by interested south Orange County retail agencies for emergency supply.
NC IRWM Projects: Lane Channel (F08), Jamboree to Main Phase 1 OCPW	FY 23-24 In Design Flood Management <sup>1</sup>	This project will rehabilitate the existing dilapidated channel to pre-storm damage existing condition to convey the design discharge. Work on the channel will bring the status back to US Army Corps standings of receiving funding from PL84-99.
NC IRWM Projects: San Diego Creek Diversion/Trash Removal Project – Newport Beach	FY 23-24 Water Quality <sup>1</sup>	This project would mirror the Santa Ana-Delhi Channel Diversion project to (1) capture all dry weather trash and trash from a first flush storm, and (2) divert nuisance flows to OCSW for eventual use in the Groundwater Replenishment System.
NC IRWM Projects: Barranca Channel (F09), F05 Confluence to Barranca Pkwy	FY 23-24 Flood Management <sup>1</sup>	This project will rehabilitate the existing dilapidated channel to pre-storm damage existing condition to convey the design discharge. Work on the channel will bring the status back to US Army Corps standings of receiving funding from PL84-99.
NC IRWM Projects: Lane Channel (F08), F05 Confluence to SR-55 Freeway Phase 2	FY 26-27 In Design <sup>1</sup>	This project will rehabilitate the existing dilapidated channel to pre-storm damage existing condition to convey the design discharge. Work on the channel will bring the status back to US Army Corps standings of receiving funding from PL84-99.
OCPW - Santa Ana-Delhi Channel (F01)	FY 23-24 <sup>1</sup>	The project consists of widening portions of the channel to create additional habitat area, restoring channel slopes to convey a 100-year storm event, and replacing the existing bicycle bridge to allow continued coastal access.
MIP Construction Projects: Barranca Channel (F09) MIP Repair Phase 1A	FY 23-24 Active <sup>2</sup>	This project will excavate the earthen slope and invert. Remove & repair existing riprap. Install new riprap. Remove & replace CAB on maintenance road.
MIP Construction Projects: Borrego Canyon Channel (F20) Concrete Repairs	FY 24-25 Future <sup>2</sup>	This project will install a concrete invert and implement miscellaneous concrete repairs.
Sources <sup>1</sup> Source: Orange County Public Works, 7-Year Capital Improvement Program   Fiscal Years 2023-24 to 2029-30. Accessed March 2024. Found here: <a href="https://ocpw.maps.arcgis.com/apps/Shortlist/index.html?appid=1e3a74d5dcb744fb9bab39f427fb0079">https://ocpw.maps.arcgis.com/apps/Shortlist/index.html?appid=1e3a74d5dcb744fb9bab39f427fb0079</a> <sup>2</sup> Source: OC Construction Projects – Capital Improvement Program (CIP) and Maintenance Improvement Program (MIP). Accessed March 2024 Found here: <a href="https://ocpw.maps.arcgis.com/apps/webappviewer/index.html?id=5bbd1fa12e7a43fa8d27a55afa83afa8">https://ocpw.maps.arcgis.com/apps/webappviewer/index.html?id=5bbd1fa12e7a43fa8d27a55afa83afa8</a>		



As shown above in Table 17 and Table 18, there are multiple CIP projects within the Irvine GPU area over the next ten years. These projects will improve the regional drainage infrastructure serving the GPU and its focus areas.

#### **4.4 PROPOSED STORMWATER CONDITION AND CEQA THRESHOLD ANALYSIS**

California Environmental Quality Act (CEQA) significance criteria are used to evaluate the degree of impact caused by a development project on environmental resources such as hydrology and water quality. According to Appendix G of the CEQA Guidelines<sup>23</sup>, a project would normally have a significant effect on the environment if the project would impact any of the items listed below.

Would the Project:

- A. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?
- B. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.
- C. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
  - (i) Result in a substantial erosion or siltation on- or off-site;
  - (ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;
  - (iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
  - (iv) Impede or redirect flood flows?
- D. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?
- E. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Should the answers to these environmental factors prove to be a potentially significant impact, mitigation measures would be required to reduce those impacts to a less-than-significant threshold.

#### ***Impact A: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?***

**Impact Analysis:** Construction activities within the GPU area could potentially result in soil erosion and temporary adverse impacts to surface water quality from construction materials and wastes if left unregulated or unmitigated.

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<sup>23</sup> California Natural Resources Agency, CEQA appendix G. Found here:  
<https://resources.ca.gov/CNRALegacyFiles/ceqa/docs/ab52/final-approved-appendix-G.pdf>

Implementation of State and Local regulations will effectively mitigate construction storm water runoff impacts from the proposed land use changes that take place during construction. Standard erosion control practices shall be implemented for all construction within the City. Additionally, construction sites over one acre will be required to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) in accordance with the requirements of the Statewide Construction General Permit and subject to the oversight of the Santa Ana Regional Water Quality Control Board. The SWPPP must include BMPs to reduce or eliminate erosion and sedimentation from soil disturbing activities, as well as proper materials and waste management. Implementation of these State and Local requirements would effectively prohibit projects from violating any water quality standards or waste discharge requirements resulting from construction activities.

In terms of post-construction related impacts, the incorporation of site design, LID features and BMPs as required under the County of Orange MS4 Permit implemented by the City of Irvine are designed to protect surface waters and groundwater. The redevelopment of existing non-residential sites into the proposed higher density residential land uses will result in improvement to water quality runoff based on the implementation of water quality BMPs that likely do not exist under current conditions.

The individual development and redevelopment projects within the GPU will effectively retain or treat the 85th percentile 24-hour stormwater runoff for pollutants such as bacteria, metals, nutrients, oil & grease, organics, pesticides, sediment, trash, and oxygen demanding substances prior to discharge off their property. As properties within the City undergo redevelopment, existing properties that do not have water quality BMPs will be replaced with projects incorporating LID BMPs. Therefore, long-term surface water quality of runoff from the GPU areas would be expected to improve over existing conditions as more LID BMPs are installed and implemented. This is considered an overall benefit of the proposed land use changes associated with implementation of the GPU. Impacts to surface water and groundwater quality will be less than significant.

***Impact B: Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.***

**Impact Analysis:** Since groundwater is actively managed throughout the City by numerous water agencies and stakeholders, individual projects will not utilize site-specific wells for groundwater supply. All groundwater is managed through OCWD and the water retailers and planning documents such as the Urban Water Management Plans. It is also likely that through LID features, infiltration will be feasible in specific areas throughout the City and will augment groundwater recharge. Through management by the local water districts, land development and redevelopment within the City will not result in interference with groundwater recharge or management of the groundwater basin. Therefore, the impacts are expected to be less than significant.

***Impact C: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:***

- (i) Result in a substantial erosion or siltation on- or off-site;
- (ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;
- (iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
- (iv) Impede or redirect flood flows?

**Impact Analysis:** Under the existing conditions and proposed conditions, drainage patterns will largely be maintained and will utilize the existing drainage facilities within the public right of way. The majority of the development to occur through the proposed land use changes will be in-fill of vacant lots (new development) or redevelopment of existing non-residential properties into high density residential. In both circumstances, the surrounding area has already been developed and the overall drainage patterns, the primary public storm drain system and points of connection are set. Implementation of the proposed land uses will rely on the existing drainage systems to convey runoff. Current runoff is captured and conveyed by existing City or County storm drain infrastructure throughout the City before discharging to regional County flood control facilities and channels. From there, the runoff is ultimately discharged into Newport Bay. The City is primarily built-out, and no major changes in storm flows are anticipated. As noted previously, the City and the County have policies in-place that would require design and installation of detention systems to mitigate peak flows for certain development projects, and/or if downstream drainage facilities ever become deficient.

In addition, most storm drainage structures, streams, and channels that collect and convey runoff within the City are concrete-lined and not susceptible to scour or erosion. For areas that are tributary to streams that may be susceptible to scour, hydromodification requirements, as part of the regional MS4 permit, and will ensure that impacts are minimized. Overall impacts to erosion and siltation, because of GPU land use changes, are anticipated to be less than significant.

***Impact D: In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?***

**Impact Analysis:** The majority of the City of Irvine is located outside the 100-year flood zone, and therefore potential impacts to flooding in the City are less than significant. Areas of the City within FEMA designations of Zone A, AE, or AH represent areas where there is a 1% chance of annual flood hazard. All development within these areas will require conformance with FEMA requirements along with pad elevations and setbacks to adequately protect structures from flood hazards. These requirements are typically implemented through the City, and impacts are also considered less than significant for these areas when meeting all FEMA requirements. The City is not subject to impacts

from tsunami or seiche zones, and thus risks from these hazards are not applicable.

***Impact E: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?***

**Impact Analysis:** New development and redevelopment within the City of Irvine does not impact implementation of local or regional water quality control plans or sustainable groundwater management plans. All development within the City will follow the Santa Ana Regional Water Quality and Control Boards MS4 permit. Groundwater levels are managed by various stakeholders, and development projects with infiltration will be reviewed for conformance with groundwater management goals. Impacts to water quality and groundwater management will be less than significant.

## **5. APPENDICES**

**Appendix A** Water Demand Calculations

**Appendix B** Sewer Demand Calculations

## **APPENDIX A**

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# **WATER DEMAND CALCULATIONS**

**Appendix A Existing, Proposed, and Net Change in Water Demands**

Planning Area	Proposed Residential (DUs)	Density/ Acre	Acres of Residential Development	City of Irvine Land Use Category	Estimated Existing Water Demand				Estimated Proposed Water Demands				Net Change (Proposed-Existing)						
					IRWD Land Use Category	IRWD Water Use Factor Converted to (GPD/Acre)		Existing Water Demand (GPD)	Existing Water	IRWD Land Use Category	IRWD Water Use Factor Converted to (GPD/Acre)		Proposed Water Demand (GPD)	Proposed Water Demand (AFY)	Net Change (GPD)	Net Change (AFY)			
<b>Focus Area 1 – Greater Irvine Business Complex Area</b>																			
19 (Rancho San Joaquin)	2,202 DUs	50 DUs/ Acre	44 Acres	IBC Multi-Use	Light Industrial	70 GPD/ KSF	43,560 SF/ Acre	3,049 GPD/ Acre	134,287 GPD	150 AFY	High Rise Density - Irvine	125 GPD/ DU	50 DU/ Acre	6,250 GPD/ Acre	275,250 GPD	308 AFY	140,963 GPD	158 AFY	
36 (Irvine Business Complex)	12,798 DUs		256 Acres						780,473 GPD	874 AFY				1,599,750 GPD	1,792 AFY	819,277 GPD	918 AFY		
<b>Focus Area 2 – Greater Spectrum Area</b>																			
12 (Oak Creek)	4,907 DUs	50 DUs/ Acre	98 Acres	General Industrial & Medical and Science	Industrial - Light & Regional Commercial	70 GPD/ KSF	43,560 SF/ Acre	4,574 GPD/ Acre	448,873 GPD	503 AFY	High Rise Density - Irvine	125 GPD/ DU	50 DU/ Acre	6,250 GPD/ Acre	613,375 GPD	687 AFY	164,502 GPD	184 AFY	
31 (Irvine Spectrum 6)	2,934 DUs		59 Acres						268,391 GPD	301 AFY				366,750 GPD	411 AFY	98,359 GPD	110 AFY		
32 (Irvine Spectrum 3)	17,817 DUs		356 Acres						1,629,828 GPD	1,826 AFY				2,227,125 GPD	2,495 AFY	597,297 GPD	669 AFY		
33 (Irvine Spectrum Center)	949 DUs		19 Acres						86,811 GPD	97 AFY				118,625 GPD	133 AFY	31,814 GPD	36 AFY		
<b>Focus Area 3 – Great Park Neighborhood Transit Village</b>																			
51 (Great Park)	5252 DUs	50 DUs/ Acre	105 Acres	Trails and Transit Oriented Development	Regional Commercial	140 GPD/ KSF	43,560 SF/ Acre	6,098 GPD/ Acre	640,576 GPD	718 AFY	High Rise Density - Irvine	125 GPD/ DU	50 DU/ Acre	6,250 GPD/ Acre	656,500 GPD	735 AFY	15,924 GPD	18 AFY	
<b>TOTAL 46,859 DUs 937 Acres</b>					<b>ESTIMATED EXISTING WATER DEMAND 3,989,238 GPD 4,469 AFY</b>					<b>ESTIMATED PROPOSED WATER DEMAND 5,857,375 GPD 6,561 AFY</b>					<b>1,868,137 GPD 2,093 AFY</b>				
<b>NOTES</b>					<b>NOTES</b>					<b>NOTES</b>					<b>NOTES</b>				
*The City's GPU calls for up to 57,656 DUs, the number of DUs represented in this table only reflect 46,859 DUs or 81% of the proposed units. The remaining DUs are spread throughout the City and are represented in varying PAs. Seeing that the Focus Areas account for a majority of the proposed growth the comparison between existing and proposed water demands is limited to these areas that have the potential for more intensive residential growth.					*Light industrial water use = 70 gpd/ksf = (0.70 gpd/sf)*(43560 sf/acre) = 3,049 GPD/Acre *The average of industrial light and regional commercial water use is (70+140)/2 = 105 gpd/ksf / 1000 = (0.105 gpd/sf)*(43560 sf/acre) = 4,574 GPD/Acre *Regional commercial water use = 140 gpd/ksf / 1000 = (0.140 gpd/sf)*(43560 sf/acre) = 6,098 GPD/Acre					*It is assumed that there are 50 DUs/ acre, and water use for this density is represented by IRWDs water use factor for high rise density which estimates 125 GPD/DU. Converting 125 GPD/DU to acres is the following 125 GPD/DU* 50 DUs/Acre = 6250 GPD/Acre									

## **APPENDIX B**

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### **SEWER FLOW CALCULATIONS**

**Appendix B Existing, Proposed, and Net Change in Sewer Flows**

Planning Area	Proposed Residential (DUs)	Density/ Acre	Acres of Residential Development	City of Irvine Land Use Category	Estimated Existing Sewer Flows				Estimated Proposed Sewer Flows				Net Change (Proposed-Existing)										
					IRWD Land Use Category	IRWD Sewer Flow Factor Converted to (GPD/Acre)		Existing Sewer Flows (GPD)	Existing Sewer Flows (AFY)	IRWD Land Use Category	IRWD Sewer Flow Factor Converted to (GPD/Acre)		Proposed Sewer Flows (GPD)	Proposed Sewer Flows (AFY)	Net Change (GPD)	Net Change (AFY)							
<b>Focus Area 1 – Greater Irvine Business Complex Area</b>																							
19 (Rancho San Joaquin)	2,202 DUs	50 DUs/ Acre	44 Acres	IBC Multi-Use	Light Industrial	60 GPD/ KSF	43,560 SF/ Acre	2,614 GPD/ Acre	115,103 GPD	129 AFY	High Rise Density - Irvine	120 GPD/ DU	50 DU/ Acre	6,000 GPD/ Acre	264,240 GPD	296 AFY	149,137 GPD	167 AFY					
36 (Irvine Business Complex)	12,798 DUs		256 Acres						668,977 GPD	749 AFY				1,535,760 GPD	1,720 AFY	866,783 GPD	971 AFY						
<b>Focus Area 2 – Greater Spectrum Area</b>																							
12 (Oak Creek)	4,907 DUs	50 DUs/ Acre	98 Acres	General Industrial & Medical and Science	Industrial - Light &	60 GPD/ KSF	43,560 SF/ Acre	4,138 GPD/ Acre	406,123 GPD	455 AFY	High Rise Density - Irvine	120 GPD/ DU	50 DU/ Acre	6,000 GPD/ Acre	588,840 GPD	660 AFY	182,717 GPD	205 AFY					
31 (Irvine Spectrum 6)	2,934 DUs		59 Acres		Regional Commercial	130 GPD/ KSF			242,830 GPD	272 AFY					352,080 GPD	394 AFY	109,250 GPD	122 AFY					
32 (Irvine Spectrum 3)	17,817 DUs		356 Acres						1,474,606 GPD	1,652 AFY					2,138,040 GPD	2,395 AFY	663,434 GPD	743 AFY					
33 (Irvine Spectrum Center)	949 DUs		19 Acres						78,543 GPD	88 AFY					113,880 GPD	128 AFY	35,337 GPD	40 AFY					
<b>Focus Area 3 – Great Park Neighborhood Transit Village</b>																							
51 (Great Park)	5252 DUs	50 DUs/ Acre	105 Acres	Trails and Transit Oriented Development	Regional Commercial	130 GPD/ KSF	43,560 SF/ Acre	5,663 GPD/ Acre	594,821 GPD	666 AFY	High Rise Density - Irvine	120 GPD/ DU	50 DU/ Acre	6,000 GPD/ Acre	630,240 GPD	706 AFY	35,419 GPD	40 AFY					
<b>TOTAL</b>		<b>46,859 DUs</b>	<b>937 Acres</b>						<b>ESTIMATED EXISTING WATER DEMAND</b>		<b>3,581,002 GPD</b>	<b>4,011 AFY</b>						<b>ESTIMATED PROPOSED WATER DEMAND</b>		<b>5,623,080 GPD</b>	<b>6,299 AFY</b>	<b>2,042,078 GPD</b>	<b>2,287 AFY</b>
<b>NOTES</b>				<b>NOTES</b>						<b>NOTES</b>						<b>NOTES</b>							
*The City's GPU calls for up to 57,656 DUs, the number of DUs represented in this table only reflect 46,859 DUs or 81% of the proposed units. The remaining DUs are spread throughout the City and are represented in varying PAs. Seeing that the Focus Areas account for a majority of the proposed growth the comparison between existing and proposed water demands is limited to these areas that have the potential for more intensive residential growth.				*Light Industrial sewer flows = 60 gpd/ksf = (0.60 gpd/sf)*(43560 sf/acre) = 2,614 GPD/Acre *The average of industrial light and regional commercial Sewer Flows is (60+130)/2 = 95 gpd/ksf / 1000 = (0.095 gpd/sf)*(43560 sf/acre) = 4,138 GPD/Acre *Regional commercial water use = 130 gpd/ksf / 1000 = (0.130 gpd/sf)*(43560 sf/acre) = 5,663 GPD/Acre						*It is assumed that there are 50 DUs/ acre, and sewer flows for this density is represented by IRWDs Sewer Flows factor for high rise density which estimates 120 GPD/DU. Converting 120 GPD/DU to acres is the following 120 GPD/DU* 50 DUs/Acre = 6,000 GPD/Acre													